# The Information Society: Innovation, Legitimacy, Ethics and Democracy

## In Honor of Professor Jacques Berleur s.j.

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# THE INFORMATION SOCIETY: INNOVATION, LEGITIMACY, ETHICS AND DEMOCRACY

## IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

> *IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.*

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

# THE INFORMATION SOCIETY: INNOVATION, LEGITIMACY, ETHICS AND DEMOCRACY

*In honor of Professor Jacques Berleur s.j.*

*Proceedings of the Conference "Information Society: Governance, Ethics and Social Consequences", University of Namur, Belgium, 22-23 May 2006*

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***The Information Society: Innovation, Legitimacy, Ethics and Democracy***
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# Editors' Note

*Minor editorial changes have been made to some papers; any misinterpretation is the responsibility of the editing team.*

# To Professor Jacques Berleur s.j. ...

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Leaving, dear Jacques is always to stay a little. Your work and your actions are only milestones along a long road, which you traced out early on, still far from the end. Your intellectual integrity was never willing to settle for "close enough". We are more moved – dear professor, dear friend – than we are able to show.

It is impossible to give an account here in an adequate manner of a career so complete and rich, containing so many accomplishments and achievements – inasmuch as I only recently arrived at the Institute for Informatics, and did not take part in this long institutional and intellectual effort. Outside the brilliant administrative career which saw you attain the highest responsibilities in our institution, where you carried out the duties of Director of the Institute for 5 years, serving also as Rector of the University for nine years, in the international organizations or in professional organizations and federations, intellectually you have been one of those who founded the field, today so important and prosperous, known as "informatics and society ". It is still difficult to take account of such a vast domain, which includes aspects that connect it to law, to ethics, to politics, to philosophy, to sociology and even epistemology, it is enough to note that your contributions in all these domains have been numerous, fundamental, and brilliant. Your commitment to the defence of the idea of an ethical and humane informatics has never weakened. You have continued to fight against the idea of technical destiny, implying some sort of technical inevitability, continuing to evaluate a technology in the process of a stunning evolution on behalf of the idea of a technological democracy, ethical governance, and the possibility of a real social appropriation of information technology, all while never giving in to mere pragmatism nor to techno-economic rationalism, while continuing to seek protection for human dignity. The many missions you have engaged in, and the many, many miles you have travelled, all in accordance with your religious conscience, have also allowed you to connect fundamental research with fundamental social concerns, always on behalf of an informatics that serves man, all without falling victim on the other hand to the vertigo of utopias.

You have worked hard for the development of a humane informatics aware of its responsibilities; you have contributed much to the existence of a critical perspective independent of technical and economic determinism. You can be proud of the results obtained over the years, as of all your work. The hardest steps are yet to be taken, but you have clearly traced out the path to be followed.

The Institute has desired to pay you homage, dear Jacques, by pursuing not your work - for that would be quite presumptuous on our part - but indeed the problematic which has stimulated your work, by editing this book which represents the proceedings of a conference held in May 2006 in Namur marking the culmination of a series of research seminars "Communication and Society: technical reason, ethical reason, and democratic governance" held between February 2005 and May 2006.

This colloquium has been made possible thanks to a collaboration between the Institute of Informatics and the ICAM of Lille, France, with my colleague Sylvain Lavelle of the Catholic Institute for Arts and Trades (F) and through support from the Interfaculty Technology Assessment Group of the FUNDP, Namur (B), and with the support of the Center for the Philosophy of Law of UCL, in the person of Tom Dedeurwaedere, and in cooperation with the working group 9.2 of the International Federation for Information Processing (IFIP).

# Foreword

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A conference to honour the professional life of Jacques Berleur has inevitably been a platform for debate on the most fundamental issues that pre-occupy the working groups of the IFIP Technical Committee 9 (TC9) on the 'Relationship between Computers and Society'. Jacques Berleur has of course been one of those few ICT experts who, since the 1970s, has tirelessly worked within the IFIP community to expose the nature of the ethical dilemmas of a society increasingly relying on the complex ICT infrastructures, to raise awareness of the social challenges this poses, and to influence action compatible with the ethical values of western democracy. And while Jacques, in the wake of his retirement from his university post is accelerating the pace of building his oeuvre, we can take the opportunity of this event to reflect on the critical stance towards the Information Society he has contributed to form within the TC9, which he chaired for many years.

The institutional location of TC9 has been a crucial factor for shaping the focus of its conferences, publications, and other activities. Formed within IFIP's fraternity of computer scientists and engineers in order to address the social implications of the technology they have been developing, the TC9 has for very long been – and in some working groups continues to be – acting as the 'voice of consciousness' of professional technology designers. It has been geared primarily towards creating awareness of the way ICT innovation impacts on human institutions and has aimed at cultivating a professional attitude of respect to societal norms and values. Within this context the concept of 'human choice' emerged as the focal slogan of TC9, initially referring to choice in the design and deployment of technology.

With this inherently optimistic stance of privileging human agency over imperatives of technological 'progress', TC9 has fostered a critical discourse towards technological innovation and socio-economic change that has in many ways grown beyond its initial mission of informing socially aware technology design. The unfolding socio-technical change brought along multiple new actors whose professional or private action choices contribute towards shaping the ICT-mediated institutions of the contemporary world. While choice in technology design continues to matter, political choice of governments and citizens, economic choice of investors, business managers, and consumers, as well as the everyday choice individuals

exercise in the way they live their lives, all came to be recognised at TC9 *fora* as contributing to the construction of the so-called Information Society.

A number of key principles of social critique set from the very first TC9 conferences continue to be relevant today: improvement of the quality of working life, avoidance of centralization of political and corporate power due to concentration of information in huge databases, safeguarding of privacy, avoidance of surveillance at the work place and society at large, promotion of democracy at the work place and society at large. But the contentious issues have become more complex at the age of the internet and globalization. Unprecedented opportunities for social and economic reform opened up with advances in ICT and the visionaries of the Information Society in Europe and elsewhere set a course of innovation that spans the domains of employment, government, education, health, and leisure, but they have been accompanied by greater risks of social destruction. With the threat of unemployment ever-present as jobs migrate under the conditions of competition of the global economy to work forces accepting lower salaries, issues regarding quality of working life are rarely addressed and social welfare provisions of the era of industrial democracy are considered a luxury that even the strongest modern economies ill-afford. Security vulnerabilities lead governments and management to deploy ICTs for surveillance, violating principles of privacy. Continuous technology innovation in competitive open market economies do bring growth, but also inequality and the world is tolerating conditions of extreme poverty for significant minorities in the advanced economies and vast populations in developing countries. Amidst the euphoria for the virtually unlimited circulation of information over the internet, panic was created about the 'digitally excluded'. Less fuss is made about the continuing large rates of illiteracy, and only a few scholars are concerned with the cultivation of the critical judgement required for somebody to make sense of the relevance, 'truth', or meaning of information available on the internet.

In this context of continuing socio-technical change the critical tradition of TC9 research and debate faces new challenges. The principles of choice, accountability and ethical conduct continue to be of utmost significance. But there is need to understand what is the scope and options of choice under the emerging socio-technical conditions. And the ethical dilemmas of a multicultural global society are in many ways more difficult than in culturally homogeneous national societies. Besides, how is accountability to be exercised at the age of ICT-mediated globalization? Is western-type of nation-state representative democracy still appropriate and viable? Are the more immediate forms of direct citizens' expression of choice enabled by ICT more effectively democratic? A testing case for many of the challenges of the emerging social order concerns the efforts made for the control of the very ICT infrastructure and the access to information it can potentially support, the so called governance of the internet. It is no surprise that this is now a major preoccupation for Jacques Berleur's critical might. It is now widely accepted that, though initially heralded for its anarchic technical nature and its potential for breaking through economic conventions for unlimited access to information without authority constraints and at virtually zero cost, the internet needs to be 'governed'. But how much and what kind of government is appropriate for the techno-information infrastructure of the contemporary global world? What aspects need to be controlled or safeguarded? Domain names? Intellectual property rights? The

circulated 'content'? Access to available sites? Who should have governing powers? Nation state governments, economic actors, civil society bodies, or a mix of all of them? What is the basis for the legitimacy of internet governing power for each of them? How should the governing body be appointed or elected, and who should they be accountable to? Wouldn't its jurisdiction conflict with principles of national sovereignty? What mechanisms may be instituted for enacting and policing the decisions of such a supra-national governing authority? Such questions cannot be answered by abstract theoretical principles alone – indispensable as such thinking may be. There is no other way of making sense of the scope of choice but to engage with the unfolding events and realignment of actors, as Jacques Berleur does. This is what makes the discourse of the TC9 conferences part of the critical socio-theoretical tradition.

In short, the mission of TC9 has been broadened and changed as the socio-economic reforms ICTs are mobilized to enable have become increasingly more complex and radical. Its target audience now includes politicians, bureaucrats and NGO functionaries, managers, activists, and citizens at large. The ethical issues it studies implicate not only technology choices but also the shaping of a new socio-economic regime and the formation of new governance structures. The challenges are in many ways unprecedented and the techno-economic logic too confident and powerful to respond to critical investigation. The stakes for this community of discourse are raised higher. The issues that demand attention are complex and effective argumentation requires theoretical competence, empirical detail, and analytical rigour. But general argumentation, valuable as it may be, is not enough and TC9 has still to develop a think-tank role capable of addressing responsibly specific crucial questions and harnessing a more influential range of activities. Jacques Berleur, already engaging in action for a such as the WSIS, has a lot to teach us to that end.

# General introduction

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## Towards an Information Society

The impact of techno-scientific developments on societal evolution and lifestyles no longer needs to be demonstrated. The last half of the twentieth century in particular has witnessed a considerable acceleration of the integration of technological elements into the means of economic production and social life in general. The profound transformations that have taken place in the last few decades equally involve energy, transportation, construction, telecommunications, administration, medicine, pharmacy and agricultural sectors. The transformations are closely linked to techno-scientific developments in these various areas, and particularly to stunning developments in information and communication technologies. Yet the information society emerging in the contemporary period cannot be summed up simply as a series of technical mutations. This as yet unfinished global phenomenon, at once technological, economic, political and cultural, is in search of a social and a political project, references and reaffirmed values. We are faced with the task of building the world of networks on a cultural model incorporating clear collective choices, so that the principles of democracy are transferred on line - without loss - in the future.

The problem of restructuring the process of developing technical and scientific choices within an ethical perspective and democratic sphere arises in the context of this 'informationally-based' society. In a world full of doubt, technology becomes, or tends to become (despite an underlying suspicion to the contrary) the supreme reference of pragmatic and economic truth. Techno-scientific knowledge has a blinding effect by occultation in addition to factors such as purely and simply forgetting its possibilities, the viewpoint of universality and its meaning. Yet, short of admitting a total renunciation of reason, one cannot accept the social ideology at the source of the development of information technologies. This ideology consists in presenting the dynamics of technological conception and use as a sort of natural destiny, inexorably dragging humankind into a process of total rationalization accomplishing and annihilating modernity. The democracy that controlled politics has subsequently sought, and is still seeking, to discipline the economy. It has yet to control technological development. We should, first of all, understand that our

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technological destiny is not *outside of us but in us.* Thus, technical *hubris* calls for the setting of limits which have to be defined by societies, in choosing technical means adapted to the ethical ends they pursue. As the French Senate report on the information society reminds us, information technologies have now taken such an importance that they can no longer involve a management that is delegated to technicians alone. Hence it is incumbent upon us, according to the demands of *democracy* and *ethics,* to question the capacity of power and decision-making systems to solve the problems posed by the development of the information society - without succumbing to the ideology of a social determinism. In our reflections, it is hence a matter of determining the place of ethics more exactly in a regulatory context, as well as the relationship between ethics, rationality and technical innovation.

## Democracy in Question

The democracy that controlled politics has subsequently sought, and is still seeking, to discipline the economy. It has yet to control technological development and, first of all, understand that our technological destiny is not *outside of us but in us.* Thus, technical *hubris* calls for setting limits which have to be defined by societies, in choosing technical means adapted to the ethical ends they pursue. As the French Senate report on the information society reminds us, information technologies have now taken such an importance that they no longer involve a management that cannot be delegated to technicians alone. Hence it is incumbent on us to question the capacity of power and decision-making systems to solve the problems posed by the development of the information society according to the demands of *democracy* and *ethics* without succumbing to the ideology of a social determinism. In our reflections, it is hence a matter of determining the place of ethics more exactly in a regulatory context, as well as the relationship between ethics, rationality and technical innovation.

## The legitimacy of computer technology

It may well be that information and communication technologies (ICT) are being invested with unrealistic hopes and expectations in comparison to their real possibilities. Furthermore, the phenomenon of globalization which seems to ignore borders and national jurisdictions underlines the urgency of political regulation and an ethical vision of the "global information society". One of the problems raised by the legitimisation of technological innovations is linked to an inability to connect the technical justifications with social justifications in a coherent synthesis, in order to establish "socio-technical"justifications. The problem comes from the fact that taking into account certain social justifications (or the absence of justifications...) is not inconsequential for the technology itself. Construction of the social legitimacy of computer technology faces the problem of how to escape from a circular justification inside the technical ideology, that is, one that reduces all questions to the context of technical interpretation alone and thereby finding itself ensured of encountering no obstacle to the propagation of its own logic. There is a need for openness to other modes of "extra-technical" and economical justifications, able to found its social use

on a reflective examination not only of the utility, but also of the impacts, meaning and value of technology for society. It seems important to be able to evaluate the political and social role and the legitimacy of communication technology, and particularly of one technology – computer science - whose rationality, at once calculating, instrumental and reductive, shows its incapacity for incorporating the demand for meaning so characteristic of ethics. Perhaps it is time to "re-politicise" the area of social studies conducted on the sciences and technology, that has hitherto been quite taken up with the critical movements (movements for scientific responsibility, appropriate technologies, workshops on sciences, ecology and feminism...). By institutionalising itself in the 80's and 90's, this area has distanced itself from scientific and militant actors, at the price of weakening its capacity for questioning. However, since the field of Sciences, Technology and Societies (STS) studies the "social construction of sciences and technologies", why not benefit from this analysis and try to problematise the liaison between democracy, technological innovation, economics and information society?

## The information society, politics and the common good

Information technologies have already deeply modified the means of production of goods and services; Internet use facilitates a direct and generalized relationship among the planet's ever more numerous inhabitants. These technologies exert considerable effects on the economy because of minimal reproduction costs, and may also lead to an alternative development of techniques, to re-centering technologies on their users and to the appearance of "new planetary common goods". If we learn how to get the best out of it, this mutation may bring on a veritable inversion of values, competition for cooperation, a hierarchy of informational conviviality. We cannot content ourselves with accepting the ongoing transformations towards the dominant economism and the climax of the productivism of an energetic era, as we do now. If we go down that route the informational era will lose all of its power for building relationships between cultures, as well as its essential potential values. These particularly involve its sustainable regulatory capacity and preservation of the future, fostering learning and the exchange of knowledge for the benefit of all. These problems demanding responsibility concerning the social and cultural integration of ICT question the possibility and conditions of a democracy being able to regulate the information society and question its legitimacy. It is not enough that a technology - or rather a technological order, because technology is a system – should have passed through a "democratising" procedure for it to be described as "democratic". Once set up, such a technological order must be substantially compatible with, or even favour, social relations of a democratic type. Hence we should provide our democracies with a series of criteria and prospective tools, thus helping them evaluate the compatibility of a given technology with democratic values, as well as its desirability in terms of the projects at work in a society - which should also be discussed. In the days of worldwide "cyberspace" we have to worry about the nature of public space and general interest and, from this point of view, the information society, as a project and a reality, needing to be questioned. In the present context, we often observe that the "autonomy" of science and technology, and the enclosure of its institutions in

relation to the rest of society (once considered the conditions for production of truths on the world and generators of human progress) appear as obstacles to the constitution of knowledge and valid innovations, in a world becoming more uncertain and controversial. If there is no technological determinism, there is nothing but new possibilities we can transform into "opportunities". Concerning ICT, it is up to us to take advantage of the new potentialities for regulation, co-operation and human development, but also to struggle against their counter-productive sides (such as precariousness, flexibility, real time, short term dictatorship, digital divide, insignificance).

## For a Technological Democracy?

How is democracy going to impose itself within the world, given technological questions and developments, facing the obstacles it encounters (technicist logic, profit logic, power logic...)? What kind of democracy are we going to fit the governance of technological innovation into, without restraining the technical questions to an expertise that develops itself separately from societies, whilst introducing the ethical questions? How can we allow a democratic and ethical regulation of the development of techno-communications in the context of a project such as the information society? These questions are so much more urgent and sensitive since the borderline is thin between the risks of instrumentalisation and new opportunities for the democratisation of technological decision-making, between closure and openness, between the thoughtless self-proclamation of general interest by elected representatives and the dictatorship of lobbying and particularisms, between limits and excesses.

## Which Approaches for What Ethics?

We should first of all realize the failure of a method that consists of basing every ethical problem on a sociological analysis of the functioning of a techno-scientific system and decision-making, all of which is related to a unified and reconciled normative framework where scientific truth founds good ethics. The failure of such a methodology flows firstly from the application to the explanatory social theory of premises of epistemological relativism applied to the technoscientific sphere; and secondly, from instituting wishful thinking as a method of choice; morals and ethics thereby amounting to choosing in terms of the dominant social values. In fact it is only beyond the finite totality that each domain of legitimacies, specific criteria, relevancies and truths constitutes that any ethics whatever may be - including those for an information society. Techno-science is limited to playing with its own rules; anything beyond that is just playing with the results of that game – whose rules are set freely. It is only in being aware of this fact that techno-science and its actors can experience a relationship of responsibility and move from knowing to knowing more, arousal to a life where the self awakens from dogmatic slumbers. In contrast to objective and rational knowledge, ethics can only come from without, short of "trivializing" the individual, and this awareness is the only chance for ethics. This

problematic places demands beyond the dominant reasoning or economic approaches in terms of risks/benefits. It invites us to lay the foundations of a better governance of technoscience, by inviting us to ask about the significances of the legitimacies of ICT, by favouring the necessary institutional education and by avoiding a propensity to tie the politics of technologies to the question of risks or economic interest alone. It invites us to think differently about institutional experimentation in the area of democratic governance of innovation and to move beyond decision or technocratic models. It is possible, then, to build a common world based on a mosaic of identities, interests and rationalities present in complex societies, and to make uncertain and controversial situations governable.

## Structure of the book

This book, dedicated to the governance of the Information Society, is organized in the context of such questioning. It is organized in five parts.

**The first part 'Technology and Democracy: Views on the IS' introduces the subject of the Information Society.**

**Deborah Johnson**, in *'Computer Systems, Ethics, and Democracy'*, revisits the connections between the Internet and democracy. She conceives of information technology as socio-technical systems, as networks of artefacts together with social practices, social relationships, social institutions and values. The way she views computer systems helps to understand, at a deep level, how democracy can be affected by, and can affect, the design of computer systems. She describes how her thinking about technology and ethics has changed, and presents a new set of claims about the ways in which computer systems are and are not related to democracy and democratic practices.

**Stefano Rodotà** in his contribution titled *Democracy, innovation, and the information society* questions the relationship between the development of information communication technology and democracy. In our new technical world people can meet continuously in cyberspace; citizens can continuously access a tremendous amount of information; polls give continuous opportunities to be heard (or manipulated); electors can continuously pressure their representatives; the perspective of instant referenda implies the possibility of continuous consultation. Information and communication technologies make it possible. And some landmarks of the democratic process, election first, have already changed their meaning. What are the actual effects of these changes? Are citizens more powerful or only more manipulated and controlled? Is their voice becoming stronger or they are considered more and more only as numbered voices? Those questions are fundamental if we recognize, as Stephano Rodotà, that we are dealing with a new public space where the democratic process can be developed, rather than simply the substitution of the representative democracy by a direct one: so, electronic democracy cannot be regarded only as a new tool in an ancient, unmodified context.

**Klaus Brunnstein**, in *The Information/Knowledge Society as Risk Society*, demonstrates the vulnerability of the information systems and the ethical necessity of developing 'good practices' in this field. The information systems' losses and damages are due to the fact that Information Technology (IT) experts do not care sufficiently for the consequences of their design, products and usage. While some professional organisations have suggested some rules regarding the ethical behaviour of their members, contemporary curricula fail to include Ethics into the education of IT experts. "Good Practice" becomes even more important with the growing dependency of enterprises, organisations, governments and individuals on vulnerable and growingly interconnected IT systems.

**In Part II 'Ethics and democracy into the ICT's' questions the relationship between technology, ethics and democracy.**

**Rene Von Schomberg**, in his article *From the Ethics of Technology to the Ethics of Knowledge Assessment*, outlines the principle shortcomings of ethical with regard to the challenges of scientific and technological development. He makes a case for the need of an ethics of collective co-responsibility. He states that such an ethics should focus on the ethics of knowledge assessment in the framework of deliberative procedures, rather than on the ethics of technologies as such.

**Matthias Kettner**, in his contribution *Deliberative democracy : From Rational Discourse to Public Debate*, addresses the relationship between mass media and practices of deliberative democracy. Practices of public deliberation play an essential role in recent theorizing about democracy and, in particular, 'deliberative' democracy. However, little attention is usually paid to the role of the mass media in such practices of governance. The objective in this paper is to prepare a framework for the normative evaluation, criticism and appraisal of mass-mediated communication specifically in relation to the requirements of deliberative democracy.

**Jeroen van den Hoven**, in his article ICT and Value Sensitive Design, reflects upon how to behave morally with information technology: how to prevent harm to others, to improve the quality of life and to solve some of our hardest social problems. He sketches a conception of 'doing' responsible information technology. This approach is sometimes referred to as *Value Sensitive Design.* Value Sensitive Design assumes that human values, norms, and moral considerations can be imparted to the things we make and use. It construes information technology (and other technologies for that matter) as a formidable force, especially when we take the trouble of reflecting on its ethical aspects in advance.

**Part III 'Governance of IS: From Economic Regulation to a New Social Contract' reflects on the limits of economic perspective to regulate the IS and on the necessity of a new social contract.**

**Vasileios Laopodis**, in *Social Consequences of Information and Communication Technologies and the European Union*, discusses EU initiatives from a research and

innovation policy point of view. He then analyses the need for designing and implementing a policy initiative at European Union level for promoting the positive impact of Information Society funded RTD and deployment results on other EU policies. Finally the paper presents the "Information Society policy Link" initiative and in particular its first year results and policy implications on social responsibility for employers, employees and the State.

**Philippe Defraigne**, in *Economy, industry, innovation, and technical democracy*, focuses on the forces that have shaped European telecommunications policy in the last 20 years and on the dichotomy between the objectives actually pursued by these policies and those presented to the European Parliament and the public at large. The paper first looks into the circumstances that lead to the liberalisation of the telecommunications sector and ponders the respective roles of the European institutions in that process. The second part describes how the European policy evolved from a policy aimed at liberalising the sector to a new form of industrial policy. The third part analyses some of the assumptions behind the Lisbon agenda as well as the correlation between the failure to reach the goals set by this agenda and the renewed focus on ICT. Finally, the paper explores some of the conditions that would lead companies to take a long-term view regarding their impact on society, policy-makers to address actual problems before pursuing technological solutions, and citizens to use virtual communication to foster interpersonal communication rather than as a substitute to it.

**Eric Brousseau**, in *When Economics Meets Ethics: the Governance of Economic Activities in the Information Society*, reviews the economic arguments calling for a regulation of the digital space. Digital Technologies make possible decentralized institutional frameworks based on self-implementation of exclusive rights of use over information and on the self-regulation of on-line communities. Through a decentralized system of Intellectual Property Rights and 'collective rules' setting of this kind agents would benefit from coordination frames well adapted to their specific needs and preferences. However, such a process can also result in inefficiencies. While becoming subject to exclusion, information and coordination spaces remain non-divisible goods. Moreover, individuals and groups could succeed in taking non-contestable control over 'privatized' information spaces. Brousseau underlines that an institution of last resort (placed above the agents and the self-regulated communities) should make enforceable constitutional principles. Its purpose would be to guarantee some fundamental rights to producers of information and knowledge and users of the digital infrastructure.

**Tom Dedeurwaerdere**, *The Institutional Dynamics of Sharing Biological Information : Towards reflexive governance of the information society,* seeks to contribute to building a framework for reflexive governance of the information society. The hypothesis is that new institutional economics as an interdisciplinary research program can provide some of the necessary tools for this framework and help us to understand how the reflexive feedback of actors and users on the social challenges of the new technologies can be embedded in the institutions of regulation. To test this hypothesis, he develops a specific case study on the building of the

microbiological commons. As his analysis attempts to show, the success of these initiatives in building both efficient and legitimate means of information sharing is dependent on a double reflexive mechanism embedded in the institutional rules: (1) organizing feedback of the actors and users on the institutional rules and (2) the building of common understanding amongst different stakeholder communities.

**Richard Delmas**, in *The Internet: New Principles of Political Right, New Social Contract*, underlines the need for a new 'social contract'. The Internet is now at the crossroads of the information and media spheres, at the juncture between private and public areas. Since the '90s, with the widespread use of the *web* and the domain name system the power to name, to identify, to search and to retrieve data on the Internet includes a deep societal and ethical dimension. Therefore one could identify multiple regimes of '*governmentality*' of the Internet. As a background of further analysis, the recent two Summits on the Information Society organised by the United Nations and held in Geneva in 2003 and in Tunis at the end of 2005 have agreed on a series of texts. In this context, the impetus given to the bottom up '*multistakeholders*' approach will be successful if ethics, values and principles are put forward at the same level as any process of reflexivity. It is clear that the ambition and prospect of these texts and of the Agenda would need, in order to be effective and implemented, the formalization of common agreed principles and to set up adequate international instruments. In short this would imply a new *social contract* for the digital world.

**In Part IV 'Applied Issues : Health, Profession and Education' develops a more applied perspective reflecting on the integration of an ethical perspective within e-health policy, professional issues within University Degree Courses and in methods of teaching.**

**Jean Herveg** and **Yves Poullet**, in *Which Major Legal Concerns in Future e-Health?* Stress a radical change of perspective in the development of new e-Health projects. Indeed these projects are no longer conceived as simple answers to well-identified and punctual needs. Today they are part of an Infrastructure Policy aiming at the establishment and the operation of real information highways in healthcare. The authors test the creation of these highways against four validity criteria: necessity, transparency, security and confidentiality, and quality.

**Les R. Neal (and alii)**, in Embedding Professional Issues within University Degree Courses, address the British Computer Society's (BCS) requirements for accreditation with respect to the content and delivery of professional issues within UK Information Systems and Computing undergraduate degree courses. They discuss the professionalism required of BCS members in general, the requirements placed on computing degree programmes by the UK academic authorities and the specific requirements placed on such courses for them to meet BCS accreditation demands. They present the major issues that need to be addressed by the providers of the programmes and conclude by relating the success of the enterprise to its implementation through the application of self-regulatory and democratic principles.

**Bern Martens**, in IT, Ethics and Education: Teaching the Teachers (and their Pupils) shows that, at colleges and universities, computer ethics has established itself as an integral part of computer science and information technology programmes. However, many of the issues involved are not only relevant to IT professionals, but also to IT users or even any citizens of our IT intensive society. It is therefore important that ethical issues in IT receive proper attention in secondary school, both in IT classes and other contexts. For this to be possible, firstly, educational policy and plans have to be adjusted. Secondly, teachers must get a thorough introduction to computer ethics, and learn appropriate teaching methods. Finally, teaching materials have to be developed and distributed.

**The final section (Part V) 'For an ethical and democratic Governance of IS/ The lessons from the WSIS' takes a broader perspective and aims to reflect on the result of the WSIS (the World Summit on the Information Society) concerning the regulation and the framing of the Information society.**

**Yves Poullet**, in *Internet Governance: Some Thoughts after the two WSIS*, explores new ways for the regulation of the Information Society. Traditionally, legislators are in charge of regulating the activities taking place within a society. Due to its peculiar nature, the Internet has been regulated quite differently. Since the beginning, obscure private organisations like W3C, IETF or Icann have taken decisions which are more important for shaping human relationships within the Information Society than governmental decisions. Furthermore, even the governmental actors are pleading clearly for self-regulation and co-regulation. What are the main arguments in favour of these new ways of regulation and to what extent are they acceptable? From this perspective they analyse different specific topics such as IPR, electronic signature, Privacy and harmful and illegal content.

**Jacques Berleur,** in *Governance Challenges: First Lessons from the WSIS – An ethical and Social Perspective*, draws a synthesis on the past landscape and the current stakes of the Internet regulation. From the time of the first UN Resolution until the post 2005 Summit position of the civil society, thousands of people have been preoccupied with an age, which seems still to be on the horizon, but in which we are already living - referred to variously as: the Information Age, the Information Society, the knowledge society, the digital society. They have begun to consider warnings concerning the social and ethical issues. In this article Jacques Berleur gives his reflections on the outcomes of the World Summit on the Information Society (WSIS), in Geneva (2003) and in Tunis (2005).

# PART 1 - TECHNOLOGY AND DEMOCRACY: VIEWS ON THE IS

# Introduction to part I

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The celebration of the professional life and work of Professor Jacques Berleur is in some way also a celebration of the many advances that have been made in information and communication technologies (ICTs). These advances have resulted in what we commonly call the Information Society, due to the pervasive nature of ICT in our everyday lives. An important aspect of Professor Berleur's work has been his contribution to raising awareness of social and ethical issues related to the Information Society. One such issue is the impact of ICT on democracy which is the focus of the three papers in this chapter by Professor Deborah Johnson, Stefano Rodotà, and Professor Klaus Brunnstein respectively.

ICT and the technical infrastructure of computer networks have issued in a 'new' type of democracy which has associated social, political and cultural dimensions. The networked society facilitates what Stefano Rodota calls a 'continuous' democracy. Here all aspects of citizens' participation in the networked society (e.g. meeting, accessing, consulting, chatting, protesting) can occur continuously. Professor Johnson sees this reinvention of democracy in the wider context of a global world, where ICT is an infrastructure linking interdependent individuals within nations and across nations. While one may argue that this 'new' democracy has been shaped by the availability of new technology, it is worthwhile to note here that Professor Johnson is quick to dispel the notion of technological determinism. She argues that technology is not autonomous, that while technology changes society, social forces also change technology (for example ICT designed to embody democratic values).

It is important to note that the very technology that enables participative and continuous democracy can invariably affect the quality of the democracy that it facilitates. Stefano Radata, warns that electronic technologies have their drawbacks in that they are often used for the surveillance and control of societies (e.g. for counter-terrorism, tagging, tracking) hence negating the very essence of democratic principles especially individual autonomy. Professor Johnson draws attention to the fact that technology is not neutral and relationships between technology and systems of authority usually exist. Hence technology can be used to impose social bias and other agendas. Finally, Professor Brunnstein, highlights some drawbacks of

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technology, noting that the information society has inherent risks associated with software/hardware failure and misuse. Such failures may mean that the full potential of the technology is not realized, hence affecting the quality of the democracy that it is intended to facilitate.

The education of IT experts and citizens/ users in the information society is seen as critical to maintaining the 'new' ICT democracy. Professor Johnson argues that ICT is 'sociotechnical' consisting of hardware and software as well as a combination of artifacts, social practices, social relationships and institutions. She further argues that ICT professionals need to be educated to understand the significance of their work, in terms of its wider social, political, economic and cultural impact. In lamenting the systemic failures in ICT and the associated risks to society Professor Brunstein also calls for the education of IT professionals to enable them to enhance the quality of programs and testing; and to develop safer and secure designs, thereby reducing IT risks. With regard to citizens/users, Professor Johnson sees the need to educate citizens to enable them to participate in technological decision making, by understanding how technological choices are intertwined with social, political and cultural choices. Professor Brunstein, argues that the complexity of present IT systems, poor design and inadequate documentation may mean that users are not able to understand how to use such systems, leading to risky 'trial and error' attempts.

He further argues that users are 'slaves' to technologies that they are unable to master and control, therefore educating users is critical in the information age. Technology and democracy are inextricably linked. Technology impacts on democracy (for example facilitating 'continuous' communication and participation), however, our democratic values can also impact on technology (through the design of technology). This realization enables a society to gain better control over its destiny. It empowers citizens to question and effect technological change when necessary rather than become subject to the notion that technology autonomously determines social phenomena. The three papers in this chapter, while acknowledging the impact of ICT on democracy, also strongly assert that social forces/values impact on ICT in order to influence the growth of social institutions (like democracy). This thesis is one that Professor Jacques Berleur will readily concur with, especially since some of his work, (for example, in the area of social informatics) has specifically focused on how social forces and practices influence the social organization of information technologies.

# Democracy, Technology, and Information Societies

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**Abstract:** Computer systems, like other technologies, are socio-technical systems; they are networks of artifacts together with social practices, social relationships, social institutions and values. Viewing computer systems in this way helps to understand, at a deep level, how democracy can be affected by, and can affect, the design of computer systems. In this paper I will revisit my earlier work on the connections between the Internet and democracy. I will describe how my thinking about technology and ethics has changed and I will present a new set of claims about the ways in which computer systems are and are not related to democracy and democratic practices.

**Keywords:** Information society, ethics, democracy, sociotechnical systems, values, technological determinism, information technology professionals, citizenship

## 1. Introduction

During his life, Jacques Berleur witnessed the birth and evolution of one of the most powerful technologies in human history. What began as fairly rudimentary calculating machines, evolved first into huge mainframe computers capable of calculating numbers that were never before necessary or imaginable; then to small, 'micro' and 'personal' computers bringing incredible capabilities into small businesses and individual homes; to networks of computers and telecommunication connections that bring millions of people across the globe into instantaneous, real-time communication; to thousands of other kinds of technologies and components embedded in familiar and new products and devices; and eventually to what we refer

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to today in the all inclusive term, 'information and communication technology" (ICT).

At this moment it is difficult to see the future of ICT and the world which it will constitute. While I hesitate to speculate, it seems likely that the evolution will continue to bring individuals and organizations across the globe closer and closer together, while at the same time, the artifactual components of the technology become more and more invisible. Not only are we likely to continue to become closer in the sense that our lives will be more intensely intertwined, but we are likely to become more physically and individually intertwined with ICT. Our bodies will become more complicated ICT-flesh hybrids; many more of us will, to varying degrees, become cyborgs – human-technology combinations.

In honoring Jacques Berleur we focus our attention on "the information society" and the "issues, problems, and challenges" it poses. Because we are honoring Jacques, we want in particular to think about how we can effectively shape information societies into worlds in which we want to live. We seek, as Jacques Berleur has sought, to understand information societies in ways that help us to act in and influence the development of better information societies.

In an information society, a large number of individuals are educated for, and employed in, roles involving the design, production, maintenance, buying and selling, and use of ICT. Information societies need and depend on the special knowledge and know-how of these ICT professionals/experts. ICT professionals can deploy their expertise recklessly or cautiously, use it for good or ill, and the organization of these individuals into professional associations is an important social means of managing that expertise in ways that serve human wellbeing. ICT professionals are key players in an information society. Information societies need ICT experts and professionals who understand the values of democracy and see the connections between their work and the democratic character of the world they create through their work.

To prepare for a future of information societies, we need a framework for understanding and addressing governance, ethics, and social consequences of ICT. This is a daunting task, and I will try to get a handle on the territory by addressing its various components and identifying what I take to be the key premises that should direct our thinking about, and making decisions about, information societies. My analysis moves in sequence from ideas about democracy, to the conception of technology with which we should work, to ICT, and finally to technological choice and democracy.

## 2. Democracy and Technology

I begin with some basic thoughts about democracy. Democracy is a powerful idea and part of its power has to do with its uncanny combination of simplicity and complexity. The simple idea can be expressed as something like – individuals should have a say in decisions that affect their lives. Christiano, for example, writes about democracy that "broadly speaking, it is a form of decision-making wherein many of the individuals bound or affected by a decision have the opportunity to play

a roughly equal role at an essential stage in the making of the decision" (Christiano, 2001). Christiano goes on to identify participation, decision making, equality, and openness as key dimensions of democracy.

The simplicity of the idea of democracy leads to its complexity, for the simple idea can be manifested in many different forms – at different places, in different times, with differing institutions, in different cultures. Democracy has been and continues to be interpreted and reinterpreted, invented and reinvented as the world changes, because of new technology, new ideas, new circumstances, and many other kinds of change.

The simple idea of democracy is not just amenable to interpretation and reinterpretation, it promotes it. Democracies vary in how they achieve participation, decision making, equality, and openness, and these very features of democracy promote variation; that is, when individuals participate in relatively equal roles, in open environments, new ideas and new forms of democracy are envisioned and created. While the worthiness of the simple idea of democracy is rarely challenged, various versions of democracy can be and generally are challenged. Challenges to forms of democracy are encouraged by participation and openness, and this, in turn, leads to further interpretation, reinterpretation, and continuous change in democracies.

As an ethicist I understand the moral foundation of democracy to be connected to a Kantian conception of human beings as ends in themselves. The moral idea of democracy is that every human being is an end in him- or herself, worthy of respect and, hence, never to be used merely as a means to another's end. For Kant and many moral philosophers, the respect that is due to human beings is tied to their autonomy. When we treat human beings merely as means, we deny and violate their autonomy. Dictatorships and oligarchies are morally unacceptable forms of government precisely because they do not respect the autonomy of human beings (even if or when they claim to respect the value of human beings). Giving individuals a say in the governance of institutions that directly and indirectly shape their lives acknowledges the value of human beings as ends; it acknowledges their autonomy. Indeed, giving individuals a say in decisions that affect their lives doesn't just acknowledge, it calls upon and activates the autonomy of individuals.

The challenge, of course, is to figure out how, when, where, and at what point individuals should participate, what institutions are best at achieving participation, equality, openness and decision making. The challenge today is figuring out how to achieve democracy *given the complexities of modern life and the increasing interdependence of individuals within nations and across nations.*

The challenge of democracy today is the challenge of interpreting and reinventing the simple idea in the context of a global world, a global world in which regional and national economies and politics are intensely interdependent, a world in which individual and collective behavior in one place can fairly dramatically and quickly affect individuals and nation states in other places, near and far.

ICT is a major component of the intertwining of lives across the globe. While geography has always been understood to be a significant factor in democracy and politics, technology (especially ICT) has become a part of the materiality upon which politics and economy are built. For this reason, current and future reinterpretations

and reinventions of democracy will have to take ICT into account. The challenge of reinventing democracy today is the challenge of reinventing democracy in a world that is constituted by ICT. ICT is the infrastructure, the platform, the body, if you will, of the global world in which democracy must now be realized.

All of this is to say that in thinking about governance, ethics, and ICT, we have to go back to the simple idea of democracy and keep it in mind as we reinvent democracy for a world that is constituted by ICT. Of course, we should not assume that ICT is hard or fixed, i.e., that it is the only way it can be and can't be changed. Unlike nature, ICT is human-made and can be made to fit and to serve future worlds that we desire.

# 3. Understanding Technology

ICT is technology and misconceptions of technology often get in the way of reinventing democracy. Recent work in science and technology studies (STS) cautions against three mistakes that are often made in thinking about technology. These mistakes are important to avoid in discussing democracy, governance and ICT. The first mistake is that of presuming technological determinism; the second is the mistake of thinking that technology is merely physical objects or artifacts; and the third is the mistake of thinking that technology is neutral. These mistakes are fairly well known; they are emphasized here because they are deeply rooted in discussions of the information society, and not easily expunged from such discussions. They continue to frame discourse about the information society and direct thinking in non-useful ways.

## 3.1 Think Co-shaping

Recent scholarship in STS is focused on understanding the relationship between technology and society, and accounting for the forms, meanings, successes, and effects of technologies. At the core of this focus is a reaction against the presumption of technological determinism. While multiple definitions and forms of technological determinism are described and then contested by STS scholars, technological determinism seems to involve two key tenets (Johnson & Wetmore, 2007). The first tenet is the claim that technology develops independently from society. According to this claim, technological development either follows scientific discoveries—as inventors and engineers 'apply' science in some straightforward step-by-step manner—or it follows a logic of its own, with new inventions deriving directly from previous inventions. Either way, technological development is understood to be an independent activity, separate and isolated from social forces. A growing STS literature now documents the misleading aspects of this view of technological development. The literature points to a variety of social factors and forces that influence development in this or that direction (MacKenzie & Wajcman, 1999). These factors include the intentions of particular individuals or organizations, cultural notions, funding choices, pre-existing institutional arrangements, coincidental historical events, and so on.

In short, the technologies that we have today are not the result of isolated discovery of what nature allows us to do and make. The technologies we have today are products of highly complex and contingent processes, processes that are just the opposite of isolated. The processes by which technologies are developed are social, political, economic and cultural, as well as technical. Moreover, the technologies we have today are not the only possible technologies nor are they necessarily the best technologies that can be.

A second major tenet of technological determinism is that technology (when taken up and used) 'determines' the character of a society. The STS response to this tenet is complicated. While most scholars in the field agree that 'determines' is too strong a term to describe how technology affects society, most scholars concede that technology is, nevertheless, an important, and even powerful, force in shaping society. The flaw in this aspect of technological determinism is not in its claim that technology affects society but rather its failure to recognize influence in the other direction. Society shapes technology. As already mentioned, many social factors come into play influencing which technologies are developed and what design features they have. There seems to be a general consensus among STS scholars that a co-shaping or co-constitution thesis best explains the technology-society relationship. Technology and society co-produce each other – technology shapes and is shaped by society – society shapes and is shaped by technology (Bijker 1994).

The lesson here is that technology is not autonomous; it is not the way it is because that is the only way it can be; it is shaped by social forces and can be reshaped to fit the values and institutions we desire. So it is with ICT and the information society, we should not presume that ICT is the logical outcome of nature's bounty and we should not presume that ICT determines the information society, as if information societies are simply the byproduct of ICT. Information societies have developed as they have in part because of ICT but ICT, itself, is, in part at least, a product of the character of the societies that produced it. We can change the information society in part by changing ICT and we can change ICT by changing our societies. The two move in lockstep.

## 3.2 Think Sociotechnical Systems

STS theory calls for a shift in conceptualizing technology and consequently a shift in the unit of analysis for the study of technology. Technology is not merely material objects or artifacts. To be sure, artifacts are a component of technology, but those artifacts have no meaning or significance and couldn't even exist without social practices, social relationships, and social institutions. Social practices, social relationships, and social institutions are required to design, produce, distribute, and use technology. STS scholars argue that technology *is* and should be understood to be the combination of artifacts, social practices, social arrangements, and systems of knowledge or know-how. The combination is sometimes referred to as *sociotechnical ensembles* (Bijker, 1994) or *sociotechnical systems* (Hughes, 1994) or *networks* (Law, 1987). An artifact becomes a 'something' and it becomes functional through the social meaning and social practices around it. Artifacts cannot exist, cannot be used, and cannot have effects without social practices, social organization,

relationships or arrangements. Likewise, many social organizations or practices could not exist *as they do* without artifacts. Human-made material objects never come into being or exist in a vacuum; they are never used in a vacuum; and they never have meaning or effects in a vacuum. They are created in a social context, function in a social context, and are shaped and reshaped around complex social practices.

Perhaps the best illustration is to think about the Internet. While the Internet is often conceived of as the combination of hardware, software, and telecommunication connections, the Internet is much more than this. The hardware, software and telecommunication connections would not exist were it not for a wide variety of social institutions, political and economic arrangements, and social relationships, all of which were necessary to bring about the Internet, and continue to be essential to maintaining it. Think here of such institutions as the companies that design, produce, and market hardware and software, and the corporations and public agencies that make use of the Internet and call upon countless individuals to use it. Think of all of the regulatory or quasi-regulatory agencies such as ICANN that assure that the Internet works. Moreover, consider that users are not born knowing how to use computers and software, they have to learn how to use computers; there have to be incentives to learn and use ICT, and so on. ICT is embedded in social institutions, comes into being because of social institutions, and is wholly incomprehensible without such social institutions and arrangements.

The lesson here is to remember that ICT is not simply computer hardware, software, and telecommunications connections. ICT, like all technology, is combinations of artifacts, social practices, social institutions, and social and cultural meanings associated with the artifacts. The unit of thinking and analysis here should be sociotechnical systems or sociotechnical ensembles. In thinking about ICT and democracy, the connections between the two are hardly visible when we think of technology and ICT as merely physical objects or artifacts. Viewing ICTs as sociotechnical systems allows us to ask a whole host of questions about the democratic character of the social practices, social relationships, and social institutions that, with hardware and software, constitute ICT. This view of ICT compels us to ask questions we would not have thought to ask otherwise. Likewise, we must think of democracies as sociotechnical systems – combinations of social institutions and artifacts such as buildings, voting machines, maps, web sites, and so on. The shift in unit of analysis to sociotechnical systems reframes and helps us to see the links between ICT and democracy.

## 3.3 Think Technology Infused with Value

Finally, the third mistake identified in the literature of STS is that of thinking that technology is neutral. Technology is infused with values; ICT is infused with values. My earlier work on democracy and the Internet contemplated the values embedded in the Internet. I identified metaphysical, moral, material and associational values connected to the Internet (Johnson, 1997). Other scholars have identified and made salient a variety of values embedded in different computer systems and tools. Friedman and Nissenbaum (1996) provide cases illustrating bias in computer systems; Introna and Nissenbaum (2000) show how the design of search engines is

laden with value choices; and Brey (1999) argues for 'disclosive computer ethics' on grounds that it is critical to 'disclose' and make visible the values at stake in the design and use of computer technology.

In STS, the seminal piece on values and design is Langdon Winner's 1986 piece "Do artifacts have politics?" Winner identifies the relationship between technology and systems of power and authority. His account implicitly acknowledges the point made in the preceding section, that technology is sociotechnical systems. Winner argues that particular artifacts cannot exist (function) without particular kinds of social arrangements. He argues that adoption of a particular technology means adoption of a particular social order, e.g., nuclear power necessitates a complex, hierarchical system of decision making, windmills require a more decentralized form of authority. Winner also illustrates how artifacts can enforce social biases and agendas. His discussion of the bridges of Long Island, New York designed by Robert Moses in the 1930s to be at a height that prohibited public buses from reaching the beaches used by the wealthy white elite, has reverberated in the STS literature for several decades now, pointing to connections between technology and social hierarchy (Winner, 1986). Studies of gender and technology further support this claim (Wajcman, 1991; Cockburn & Omrod, 1993).

More familiar to those who study ICT will be Lawrence Lessig's claim that architecture – the architecture of computer systems and the Internet – is a form of regulation (1999). Lessig identifies four different ways that social behavior is regulated: law, social norms, markets, and architecture. Lessig illustrates how different computer architectures create different social-political orders. Of course, the point applies not just to computer architecture; human behavior is regulated (and regimented) through buildings and roads and the design of everyday objects (Latour, 1992). Of the four forms of regulation, architecture may be the one that is least recognized as such. Those whose behavior is regulated by architecture may be unaware of its influence. We drive on roads, stopping at stoplights or we accommodate to the placement of levers and switches, without thinking much about how we accommodate to the built environment and how the designs of objects tell us what to do. Yet our built environment and the technologies that are now seamlessly part of our lives shape our behavior in very powerful ways.

Of course, we must be careful here, for Winner and Lessig can be read in a way that slips us back into a version of technological determinism; that is, they both seem to be telling us that technology determines our behavior. Hence, it is important to remember that the problem with technological determinism is not that it is wrong about technology influencing social behavior, social arrangements, and social institutions. Technology does have such influence. The mistake of technological determinism is believing that the technology is the way it has to be and believing that technology cannot be shaped and reshaped to be otherwise. When architecture regulates behavior, behavior is being indirectly regulated by those who designed the technology. Decisions are made about the features of technology and believing in technological determinism hides the systems of power and authority that produced and shaped the technology.

Lest I be misinterpreted here, I am not suggesting a conspiracy theory. I am not claiming that individuals with power and authority consciously intend to regulate

behavior in this or that way through technology. Of course, sometimes they do and should as when roads are designed to get us to go certain places and not others. However, the point is that decisions are often made about technology by human beings acting through institutions and in processes, these institutions and processes shape the outcome in ways that affects thousands of people, and, most importantly, those affected are unaware of, and have no input into, the decisions that affect their lives.

Winner and Lessig are important here not because of their perspectives on technological determinism, but rather because of the salience with which they make the point about values and technology. Technology is not neutral; it constitutes social arrangements, it facilitates and constrains various forms of interaction; it embodies values of a variety of kinds, including moral, political, cultural, and economic. Winner's work is particularly interesting here because it frames the values-technology relationship around institutions of power and authority and, therefore, points to the connections between democracy and technology and especially democracy and ICT.

The lesson is clear. ICT is not neutral and in thinking about ethics, governance, ICT and democracy, we should ask who and how the co-shaping is occurring and what sorts of institutions and processes are best for sociotechnical change. In other words, we should be focused on the institutions and arrangements in which technological decisions are being made and should be made in the future.

The lessons of this foray into the literature of science and technology studies can now be summarized. While ICT seems to arrive at our doorstep ready-made, ICT is not designed in the only way it can be. ICT is shaped by an array of social factors and forces. ICT in turn shapes society, information society. ICT is not merely material objects (hardware, software, and telecommunication connections) but rather, a combination of artifacts and social practices, social relationships, and social institutions. ICT is infused with values, both in its design and in the social practices, institutions, and relationships around its development, distribution, and use. To achieve democracy in a world constituted by ICT, ICT has to be designed for democracy; its design and the social practices that constitute it must embody democratic values.

## 4. Information Societies, Technological Choices and ICT Professionals

The lessons from the literature of science and technology studies point to the importance of the design of ICT – design of its artifactual and social components – for reproducing the principles of democracy. And, of course avoiding 'technological determinism' is crucial to avoiding the ideology of 'fatality and the destiny of technology.' Technological determinism must be expunged from our thinking if we are to realize democratic values in constituting information societies.

As mentioned earlier, there is something right about technological determinism, namely that technology affects the character of society, and, in this respect, technological determinism is right about the importance of technology. The

technologies we develop and adopt are powerful components in constituting the societies in which we live. Nevertheless, technological determinism is the culprit when we believe that technology is autonomous, that is, when we believe that it is the only way it can be. When we believe that technology has a logical course of development, unstoppable and independent of social forces, we are paralyzed; we don't even try to understand the power, the social forces and decisions that are (covertly) deciding and choosing what technologies are developed and how they are developed. In other words, technological determinism is something like a self-fulfilling prophecy. If you believe it, it becomes true.

Of course, it is not enough to identify the culprit. We need alternative ideas that will – not just free us from paralysis but – facilitate action. The preceding analysis provides a direction for this. If we acknowledge that technology and society are inextricably intertwined, a corollary of this understanding is that technological choices *are* social choices. Technological choices are the stuff of realizing, reinventing and reinterpreting democracy. Our choices about technology (ICT) are choices about the kind of society in which we want to live.

Now, while there are many directions in which we might go from here, I want to conclude by briefly discussing two implications of acknowledging that technological choices are social choices. First, IT experts are implicitly making social and political choices when they design and produce ICT; hence, how ICT experts are educated is critically important. And, second, given that technological choices are social choices, how citizens are educated about technology is also critically important.

## 4.1 Educating ICT Professionals

While the term 'information society' is generally thought to refer to the economic and sociological arrangements of a society, one of the distinctive features of such societies is that they are highly dependent on ICT professionals and ICT expertise. The complexity of modern, information societies means that ordinary citizens as well as public officials cannot fully understand the building blocks of their world. Increasingly we move in the direction of a world in which citizens must know how to use ICT, but don't necessarily understand how ICT works; they don't understand the importance of technological choices and how they affect the world. Thus, the public trust and depend upon the ICT professionals who design, produce, maintain, distribute, upgrade, enhance, and use ICT. Considering how much of our world is constituted by ICT and how the world continues to move in that direction, trust in ICT professionals is not a small matter.

Recognition of the importance of trust in ICT professionals points directly to the importance of professionalism, and typically this takes us to codes of ethics for the professions of ICT. However, related to this and equally important is the education of ICT professionals. If the preceding analysis is right, then the importance of the trust we place in ICT experts expands exponentially. When, that is, we fully digest the idea that choices about ICT are not just technological choices, but social choices about the kind of world we will have and the values that are facilitated and constrained, enhanced and impeded, then we see that ICT experts aren't just making

and providing things, they are making the world we live in. They are invisible social designers and even legislators.

Thus, when it comes to the education of ICT professionals, it seems critically important that they understand the full significance of their work. ICT professionals should be educated in ways that compel them to see that it is as important for them to understand social, political, economic and value issues as to understand computer science, mathematics and physics. ICT experts of the future should be sociotechnical analysts.1 They should be capable of thinking about the values that are infused in hardware and software, and the social practices and social relationships that come with the hardware and software.

While I have only been suggestive here, I leave it as a critical challenge of information societies to appropriately educate ICT professionals so that they understand their role and responsibilities as designers and builders of society, and are discouraged from thinking of their work as simply making hardware and software.

### 4.2 Educating Citizens in Information Societies

In many ways the challenge of figuring out how individuals should be educated for citizenship in information democracies is more daunting than figuring out the appropriate education of ICT professionals. The easy part is to say that like ICT professionals, citizens should be given the kind of education that helps them to see the intertwining of technological, social, political, and cultural choices. The easy part is seeing how important it is to do this. The hard part is figuring out how to do it.

This takes us back to the simple idea of democracy, the idea that individuals should have a say in decisions that affect their lives. If the preceding analysis is accurate, then citizens should have some say at an essential stage in many technological choices. Some, of course, will argue that citizens already do have such a say, through the market. This, I would argue, is only true of certain kinds of products, but in any case, my concern here is not so much with how citizens have a role in decision making but rather with the prior issue of *what sort of education will facilitate their participation in technological decision making.*

We can't expect citizens to understand technology in the way that experts do. On the other hand, they have to understand enough to participate in meaningful dialogue. Thus, a major challenge for information societies is figuring out this balance.

## 5. Conclusion

To summarize, in rising to the challenge of the future of information societies, we should avoid the three mistakes I mentioned above. We should reject the 'ideology of the fatality of technology.' We should adopt a view of technology as sociotechnical systems, sociotechnical systems that are infused with value. This will

1 This term was suggested to me by Benjamin Cohen in describing the kind of education engineers should receive.

allow us to see the links between technology and democracy. It will focus our attention on reinventing democracy in a world that is constituted by ICT. Moreover, two keys to shaping future information democracies are figuring out the appropriate education for ICT professionals and figuring out what citizens need to know in information democracies. Addressing these two issues will help to build systems of trust between experts and citizens. Addressing these two issues is essential to developing information democracies.

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# Democracy, innovation, and the information society

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**Abstract:** We are now rethinking the idea of electronic democracy. Today nobody is looking at e-democracy from the perspective of a living room, push button, instant referenda democracy. In the electronic age it is more and more evident that we are facing a complex evolution of the functioning of political systems – that democracy is becoming not direct, but continuous; that we can look at an extreme democracy. At the same time, we are making a distinction between e-government and e-democracy. Talking about e-government we are looking mainly at the efficiency of the administration. Talking about e-democracy we are looking mainly at the citizens' participation in the political and democratic process. But in the search for efficiency citizens should not be equated merely to consumers. The Internet, or the cyberspace, must remain available to allow free development of personality, the exercise of freedom of speech and associations carrying out civic initiatives, experimenting with all new forms of democracy. Furthermore we can easily see that we are promised a future full of administrative efficiency and consequently more rich in democracy. But at the same time we are too often obscuring a present where growing forms of control and social selection are dramatically limiting individual and collective rights – and mainly through electronic technologies. We cannot accept a kind of institutional schizophrenia. We cannot build up two non-communicating worlds giving people the illusion they are living in a place where they are experiencing technologies of freedom when they are more and more victims of technologies of control. If we look at the information and communication technologies in the framework of the democratic state, we cannot accept the silent transformation of our society in surveillance societies. We have to look to democracy as a process and to the Internet as the new crucial public sphere, a commons for interaction, for the production of public discourse, for the creation of an "espace citoyen", a place for citizenship. We must avoid the transformation of the global agora to a global panopticon, and make available for all citizens a "social software" that can give them the opportunity to be actors of a knowledge control-participation-deliberation democratic process, and not voices to be heard only at the end of this process, transforming democracy into electronic populism.

**Keywords:** e-democracy, social software, agora, espace citoyen.

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The old electronic democracy has disappeared without ever having been born. Today, for instance, nobody could propose an Electronic Congress, empowering all United States citizens to decide and legislate at the place of the member of the historical Congress as a republican leader Newt Gingrich, did ten years ago in his "Contract for America", supported by people like Alvin Toffler. The idea of all-pervasive electronic referenda, of a push-button or living room democracy is no more a part of the agenda in respect of the discussions around democracy and information and communication technologies (ICT).

At the same time, the promise and the perspective of a technological renewal of democracy is still alive. References to net or cyberdemocracy, network society, emergent and extreme democracy make apparent how deep the impact on the political and social debate is. What has changed during the last years?

We have realized that we are dealing with a new public space where the democratic process can be developed, and not simply the substitution of the representative democracy by a direct one: so, electronic democracy cannot be regarded only as a new tool in an ancient, unmodified context. We realized that the immediate impact of electronic democracy can be experimented at the local level, in the 'democratie de proximité', better than in a wider, national one. We have realized that participation and control can be more important than simple deliberation. We have gained a deeper awareness of the risks of a transformation of electronic democracy into the political form of modern populism, of a new plebiscitarian democracy. In trying to describe this change, some scholars say that we have passed from teledemocracy to cyberdemocracy. Going beyond the definitions, the change also reflects the rise of computer networks, making possible many-to-many not just one-to-many communications.

Times are changing, democracy too. In countries like the United States and Europe following the times of the 'democracy of the elites' followed by the mass democracy of the past century, are we entering the new era of the democracy of the public made possible by the information and communication technologies? Is Athens coming back? A strange mix of new possibilities and models is before us. It is not surprising that the information society is regarded as the moment in which the political systems could reach something that over centuries has been considered as the highest democratic idea: Athens direct democracy, a model of citizen participation. At the same time, however, the new technologies are regarded as the means that can make possible a fragmentation of the society, as the forum closer to the logic of political populism or to the negative utopia of the society of total control. Is the actual perspective - that of Orwell - in Athens?

In any case, what is actually happening must be analyzed more carefully, if we would like to have a more precise indication about what kind of society is now emerging. I would like to stay one more minute in Greece. Why are many political scientists looking at the Athenian model? In fact, maybe the Sparta model is more close to some forums of political communication and participation. In ancient Sparta the members of the council, the city government, were elected in this way: Candidates passed one after the other in front of the assembly in the order determined by the drawing of lots. The order in which the candidates passed was not known to the group of impartial evaluators who were sat in a separate room with writing tablets and who could not see the candidates. The evaluators' job was simply

to assess the loudness of the cheering that each candidate received when he walked in front of the assembly. The candidate receiving the loudest shout and applause was deemed the winner. This model was very far from the open and rational debate of the Athenian institution. Maybe it looks like the 'applaudometer' of some TV shows or the reaction determined by some polls. Can we escape this model?

Many scholars are describing the functioning of political systems by making reference to the words used in the Internet. You can find many books with titles like "republic.com", "vote.com", "governance.com". But at the same time we can confront ourselves with more analytical approaches to the problems and challenges of democracy in the electronic age. In the great majority of debates the perspective of the political system in the age of information and communication technologies are analyzed with regard to the possibilities of a new, richer, direct democracy. This approach reflects in some ways ideas and models which do not correspond to the framework that these technologies are building. In fact the crucial point today is not the conflict between direct and representative democracy or the research of their possible integration. Citizens do not elect a parliament every day, nor were they convened in Athens agora every day. What we are facing now is the passage from an intermittent to a continuous democracy, others say to an endless democracy, in which the voice of the people could be heard in every moment and passive citizens could be changed to active ones. To explain this change the correct reference maybe is not to Athens or Aristotle but to Jean-Jacques Rousseau and James Bryce. In the social contract Rousseau said that English citizens were free on the Election Day and slaves at all other times. How to fill this gap and have citizens instead of slaves in the times between elections has been until now one of the greatest problems of modern democracy. James Bryce in his "American Commonwealth" noted that the political system of the United States was marching towards a stage where "this way of public opinion would become more complete because more continuous".

The model of a "continuous democracy" is before us in many developed countries. But it is what will happen everywhere in the world, maybe very quickly: people can meet continuously in cyberspace; citizens can continuously access a tremendous amount of information; polls give continuous opportunities to be heard (or manipulated); electors can continuously pressure their representatives; the perspective of instant referenda implies the possibility of continuous consultation. Information and communication technologies make it possible. Some landmarks of the democratic process, election first, have already changed their meaning. What are the actual effects of these changes? Are citizens more powerful or only more manipulated and controlled? Is their voice becoming stronger or they are considered more and more only as numbered voices?

Let me start from the distinction between e-government and e-democracy, even if it is not always possible to place some facts only within the framework of either the former or the latter. When talking about e-government we are referring mainly to the efficiency of the administration. When talking about e-democracy we are looking mainly at the citizens' participation in the political and democratic process. But this distinction must be analysed more deeply, starting from two initial remarks.

First. Those citizens are equated merely to 'consumers' in the search for efficiency is to be prevented. We must prevent that the logic of the network society will be entirely captured by the logic of the market. Many of the techniques used in

the political and administrative process are coming from the business market. A *modus operandi* should be found in order to prevent the network society from being progressively identified with the commercial environment in which only the rights related to the exchange of goods and services are recognized. What has been defined as the soft new totalitarianism of consumerism is to be prevented. So that citizens are not equated merely to consumers, the new citizenship should not be measured through management criteria like "consumer satisfaction". The Internet and its transformations - cyberspace - must remain available to allow the free development of personality, the exercise of freedom of speech and associations carrying out civic initiatives, and experimenting in all new forms of democracy.

Second. We can easily see that we are promised a future full of administrative efficiency and consequently more rich in democracy. But at the same time we are too often obscuring a present where there are growing forms of control, social sorting and social selection that dramatically limit individual and collective rights, mainly through electronic technologies. We cannot accept a kind of institutional schizophrenia. We cannot build up two separate worlds giving people the illusion they are living in a world where they are experiencing technologies of freedom when they are more and more victims of control technologies. A two-speed democracy could become a tragic caricature of democracy.

If we look at information and communication technologies in the framework of the democratic state should we accept the silent transformation of our society in surveillance societies? The birth of what has been called a naked crowd, the transition towards a nation under suspicion changes all citizens to 'suspects' through the all-pervasive and intrusive technologies of control. It is happening under the pressure of terrorism, but this argument is also exploited for improving other forms of control in the interest of the business community - for instance for fighting piracy in the Internet. But can we fight terrorism by changing the very nature of our societies? How can we work towards having a counterbalance between security and rights and freedoms?

In many international documents, such as the European Convention on Human Rights and the Charter of Fundamental Rights of the European Union, the legitimacy of the limitations of rights and liberties is grounded on the respect of the democratic nature of the states. That is today the most important issue to be discussed when we are looking to e-democracy because of the growing use of electronic devices for controlling, selecting and discriminating between people. This is the first and essential test of compatibility between technology and democracy. So we cannot accept the interpretation given by some United States scholars that the passage from a surveillance aimed to control some specific suspected or dangerous people to a mass control implies a democratization of the system in that the move from a selective control into a universal one improves equality among citizens. That is a paradoxical conclusion. Equality towards the state could now be grounded on the end of all guaranties.

To better understand these trends, it is useful to quote something Tony Blair said two years ago, when he announced that all dangerous people in the United Kingdom could be tagged and tracked continuously via an electronic bracelet, radio frequency technology, microchips under the skin, even after they have left prison. This could be considered only in the context of an announcement, and difficult to be transformed

in actual practices in the short run, but it reveals a cultural change. And looking always to what is happening in the United Kingdom, we encounter the cases of employees required to carry a small "wearable computer", which allows the employer to guide their activities via satellite, direct them to the goods to collect, specify the routes to be followed or the work to be done, monitor all their movements and thereby locate them at all times. In a report published in 2005 by Professor Michael Blackmore from Durham University, commissioned by the English GMB trade union, it was pointed out that his system already concerned ten thousand people and had transformed workplaces into "battery farms" by setting the stage for "prison surveillance". We are facing a small-scale Panopticon, the harbinger of the possibility for these types of social surveillance to become increasingly widespread. Similar results, although concerning only location at the workplace, are already possible by means of the insertion of a RFID (Radio Frequency Identification) chip in employees' badges.

We are confronted with changes that have to do with the anthropological features of individuals. We are confronted with a stepwise progression: from being "scrutinised" by means of video surveillance and biometric technologies, individuals can be "modified" via the insertion of chips or "smart" tags in a context that is increasingly turning us into "networked persons" - persons who are permanently on the net, configured little by little in order to transmit and receive signals that allow tracking and profiling movements, habits, contacts, and thereby modify the meaning and contents of individuals' autonomy and, consequently, altering the fundamental features of a democratic system.

It becomes apparent that we cannot approach the relationship between technology and democracy by only looking at the deliberative process, at the organization of the public bodies, at the same opportunities given citizens to participate. Democracy is, at the same time, a process and a context, where the basic features of citizenship are defined.

We have to follow an analytical and multilevel approach not only for reconciling technology and democracy, but for understanding better the ways and means that could make e-democracy Possible. Democracy is more and more connected, first of all, with access issues. Access to information means not only the openness of the administration, but also more and more the creation of knowledge commons, grounded for instance on free software, open source, new ideas of copyright, which can improve the future of ideas in the new electronic environment. This is essential, because the democratic debate needs a free and continuous production and confrontation of ideas. In this perspective, access also means the possibility of the diffusion of ideas through free access to the Internet, the possibility of anonymity on the Web, and the absence of censorship. As Cass Sunstein has pointed out *"people should be exposed to materials that they would not have chosen in advance"*.

But in the global world all totalitarian states are interested in controlling access to, and use of, the Internet, as China has shown in recent times with the cooperation of Yahoo! and Google. So electronic democracy means cyber rights for all citizens, grounded in a new global Bill of Rights, as has been proposed at the United Nations World Summit on Information Society in Tunis (November 2005), in a Global Internet Freedom Act, such as that introduced in the United States Congress by the congressman Chris Cox.

These are some essential pre-conditions for a democratic functioning of cyberspace and for making citizens' participation in the political process effective. It means not only giving people the opportunity to interact with politicians. It needs the consideration of cyberspace as a truly real public sphere. But it raises some problems. I would like to quote an interview by Howard Dean, one of the candidates in the last presidential primaries in the US, who experienced an extensive use of information and communications technologies in his electoral campaign. The interview was published by the review magazine *"Wired"* under the title *"How the Internet invented Dean"* What did Dean say? I quote: *"If I give a speech and if the blog people don't like it, next time I change the speech".* It has been said, and it is still said, that candidates are more or less created by television, at least in the sense that they must be accepted by their capability to use television communication. Now we could say, as the title of the interview of "Wired" indicated, that we are entering the era where candidates are created also by the Internet. But through Dean's words we can look at some new and also worrying aspects of the politics in the electronic dimension. Are we facing the birth of a political model where programs and proposal are better tailored to the needs of the citizens or it is a model where technology gives incentives to the search of consent at any price, irrespective of general choices and principles, making politics poorer in the dimension of the search of general interest? When Dean said *"I'd change my speech"* does it mean that he is taking what the people said seriously, or that he is ready to change his ideas and his capability to give a political indication connected with general interest?

The problem of access to electoral competition gives us another way of looking at the perspectives of electronic democracy. Fund raising through the Internet can make candidates more free and independent from big business: for Dean, but also for John Kerry in the first part of his campaign, funds collected via the Internet were the first source of financing. But Dean's strategy was not primarily aimed at fund raising but to integrate many electronic means - websites, mailing and telephone lists, SMS text messaging, web, television. So Dean had the possibility to directly contact in one month more than 600,000 people – giving a new relevance to the most important meta-network existing in the United States. This meta-network is called *"meet-up"* regrouping 4,000 communities with 1,200,000 members, regularly meeting in 700 cities in the US. But these meetings are not just electronic ones. After an initial electronic contact they make possible house meetings, meetings in cafés, bars and other places. Two remarks about this point. First: through millions of contacts there is in fact the transfer in the real world of the logic of the electronic network. Through the electronic network a network has built up where people are not only meeting virtually, but also in the real world. Second: this case shows that new electronic technologies do not imply necessarily a discontinuity. In many cases the improvement of the democratic process can be the result of the encounter of old and new technologies.

Look for instance at Seattle, where the non-global movement was born. That meeting was organized through the Internet. Without the Internet the manifestation could not be possible. But the real event was created when people met in the real places and streets in Seattle, and the images of the people regrouping and meeting in Seattle were transmitted everywhere in the world by an old media, television. That global and very influential event was not only a result of the new technologies, of the

electronic possibilities offered for the participation of the people, but also of the combined interaction of more traditional ways to meet - places, streets (the agora), the old television technology - and Internet. A mixed reality is emerging through this interaction. So it is apparent that many forces are at work reshaping democracy through information and communication technologies, and that we are facing not substitutive, but cumulative effects.

But if we are interested in improving citizens' participation, we must also promote trust. This means to give them adequate guarantees concerning the respect of the private sphere, looking at data protection not only in the traditional perspective of privacy as the right to be left alone, but as a precondition of the exercise of rights and liberties. If we look at e-government, we must realize that the use of the new electronic opportunities offered to citizens is also a function of the fact that, for instance, their access is not regularly tracked and registered, data retention is strictly limited, principles of finality and proportionality are respected. Otherwise, if citizens are worried about the use of the data collected in connection with their access and with their participation, they could renounce this opportunity, thus making the presence of active citizens in public life poorer and weaker.

It means that e-government is not in itself democratic. It depends on the context. In the absence of strong safeguards for the information concerning them, people are increasingly in danger of being discriminated against because of their opinions, religious belief, or health. Data protection is therefore to be regarded as a key component of the 'equality' society. In the absence of strong safeguards for data concerning political opinions or membership of parties, trade unions or associations, citizens run the risk of being excluded from the democratic process. Never should one forget what happened under totalitarian regimes where deep violation of fundamental rights were made possible exactly by the massive collection of information which allowed continued, pervasive and oppressive surveillance of every day life. From this point of view, data protection must be the ultimate asset and least dispensable component of the society of dignity.

From this perspective, we have to look at democracy as a process and to the Internet as the new crucial public sphere, a commons for interaction, for the production of public discourse, for the creation of an "*espace citoyen*", a space for citizenship. At the time of the protest everywhere in the world against the United States' intervention in Iraq, the "New York Times" wrote that Internet made possible the birth of a new mobile, global super-power. It means that the Internet must be considered as a constitutional space where the reference values cannot be the technology itself or market-driven forces. We cannot only make reference to a general concept such as the collective mind, in the sense of Levy, or collective intelligence in the sense of De Kerkhove or mobile multitudes that will spontaneously drive our society in a new and active democratic process.

It is true that we are living more and more in a world of networks. But can we conclude that the future will be networks instead of states, a post-democracy near to a *"new medievalism"*?

If we look at what it is happening in the real world, at China or athe request of the United States government to Google, or to the telephone companies for having all types of data concerning their customers, we can easily see that we must deal with conflicting values and interests and that the solution cannot be found in

developments driven by the technology itself. The fascinating utopia of the Web as a place of anarchist freedom, that cannot be limited and does not need rules, has been overcome. We are experiencing a situation where the freedom of expression is under attack; traffic data are traced, stored, and transmitted to public bodies; and access to knowledge is restricted in many cases for security or economic interests.

These are the reasons why some scholars, like Benjamin Barber, continue to propose some caveat – that could be considered too pessimistic – but which reflects a situation whereby the Internet can still be considered a dimension through which some democratic needs – prudent judgment, mediation, universality, control by people – are dangerously challenged by a rush towards deliberation, the difficulty of selecting truly relevant issues, the segmentation of society, the privately owned portals.

These problems show that we need not only a careful and continuous cost-benefit analysis. Above all, the perception of this kind of problem implies that in the short run the main issue of *'cyberdemocracy'* is the production of a *"social software"*.

Once again, a multilevel strategy is needed. We must improve civic networking, where the direct awareness of citizens makes more difficult the populist, plebiscitarian use of technologies. We must improve citizens' access to knowledge and their power of producing and diffusing knowledge. We must look at the protection of the private sphere as an essential condition for autonomy and freedom in the public sphere. Only by providing people with this basic social software is it possible to achieve a strong citizenship, avoiding an outcome whereby popular participation will be converted to an illusion, a slogan without any change in the true deliberation process.

If we reflect on the past, we can easily discover a paradoxical effect of the first approach to electronic democracy issues. Searching for a direct hyperdemocracy, in fact the result was a *"democratic reductionism"*, because the core issue of democracy was identified only with the final stage of the process – deliberation. There was an expansion only of some well known institutional devices – plebiscites, referenda. And the substance of the political process remained up/down.

Entering the horizontal society - the true product of the information and communication technologies - we cannot simply try to substitute a bottom/up or top/down approach. It is for that reason we must look at the social software, with a new distribution of political and social power. Social software applications include, for instance, electronic commons, blogs, content syndication, forum, chats, instant messaging, collaborative editing, deliberative polling (according to the proposal of James Fishkin and Bruce Ackerman), social network platforms, open Internet and maybe public portals like the Quaero project in France (a new version of the public sphere, where the core issue is the reconstruction of the citizenship).

It implies a consideration of local and decentralised initiatives not as a minor version of the whole electronic democracy, but as a starting point of the people's inclusion, initiative and participation. It implies the concept of openness, starting from the reference to software. Open politics must become the key reference for cyberdemocracy, giving people a true and wide range of powers.

The basic concept cannot only be the information society, but must also include a knowledge and participation society. Starting from shared knowledge we can pass

to organization; from organization to control; from control to initiative; from initiative to participation; and finally to deliberation, deeply transformed by the new institutional context.

Taking this perspective we are neither dealing with a radical discontinuity with the traditional way of working of the democratic, representative systems nor entering an autoreferential dimension of each network. And the relationship between citizens and states will be modified because it is becoming possible to pass, in many cases, from public surveillance it its opposite, what has been called *"sousveillance"*, with citizens keeping watch of public bodies.

New forms of interaction are in front of us: between people of course, but also between new actors, new forms of public action and the traditional democratic institutions. A new face of democracy can be discovered and built up, and it can happen without a complete disintermediation, the end of all forms of the representative democracy that, on the contrary, could be renewed and improved by technology.

We must remember what happened at the time of the birth of Internet, with the enthusiasm for the end of all forms of mediation in accessing knowledge. The reality is a new form of mediation: without Google or Yahoo! access to knowledge would be impossible.

So, we are facing new general problems. Lack of political participation and of communication between the general public and decision makers reveals not only a weakness on the side of society. It also weakens the mediation function of the traditional representative institutions, so producing a functional and structural deficit in the political system. Reopening channels of communication, empowering citizens through new technologies, making possible new forms of social dialogue could reinvent forms and places of mediation: a mediation not *excluding* but *including* the direct contribution of people, working together in a new, open, wider public space, where power is continuously distributed and decisions are not the monopoly of a single, separated institution.

# The Information/Knowledge society as Risk Society : Assessing and Enforcing IT safety and security standards for IT systems : about responsibility of experts and governments

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**Abstract:** As daily experience demonstrates, contemporary networks (esp The Internet) and computer systems (whether clients or servers) are "Insecure and Unsafe at any speed" (quotation from Ralph Nader, addressing industrial products). Besides many beneficial effects of IT for enterprises, organisations and individual, many incidents have contributed to significant loss and damage. Even pubertarian boys succeed easily in attacking important IT systems and produce significant damage to systems, users and customers. Among several reasons, including basic design of technologies, IT experts do not care sufficiently for the consequences of their design, products and usage. As technical improvements of contemporary IT systems will - for a foreseeable period - only partly help to overcome basic causes of InSecurity, education of IT engineers to safer and more secure design and implementation of their products may help to reduce IT risks. While some professional organisations such have suggested some rules for ethical behaviour of their members, contemporary curricula fail to include Ethics into the education of IT experts esp. Including System and Software Engineering. *"Good Practice"* becomes even more important with growing dependency of enterprises, organisations, governments and individuals on vulnerable and growingly interconnected IT systems, IT and legal experts must find ways to enforce *"good practice"*.

**Keywords:** systems security, vulnerability, computer professionals, user empowerment, democracy

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# 1. Evolution of Digital Technologies (DTs) in "Information and Knowledge Society (IS/KS)"

In the history of mankind, several technologies have contributed to change economic and individual conditions and perspectives. While most technical inventions – such as horse-driven cars, windmills and ships – developed rather slowly concerning technology as well as regarding their impact on society, James Watts invention (1761) of the vapour pressure driven "machine" changed economic conditions and in their wake the world order at significantly higher pace than any technology before. In their first – stationary – form, production of industrial goods was operated by heavy machines with relatively small power (though large compared to human "manufacturing") but it was the start to essentially change the production of related goods. This change gained more speed and had more effects when Watts machines became sufficiently light and more powerful as to drive wagons on iron rails ("locomotion") to support faster transport of material resources to the fabrication sites and of products to consumers. Both the stationary and the mobile machine supported developments of the "Industrial Society" which gained more momentum with other technical inventions and developments such as electrical energy, telephony and the energy production from resources such as oil and uranium.

When comparing economies and state organisation, law, education and the role of individuals between the advent of Watts engine and 1960 when computers began to significantly spread into (then large) business and universities, then economic and societal changes are evident, at least in the so called (technically) "developed countries". And changes affected many areas: from hierarchical to democratic organisations, legal systems supporting individual rights, opportunities for education and medical support for all, etc. But over the span of about 200 years of industrial history (1762-1960), the speed of change was rather slow.

As basis of predicting future developments of ICTs, an analysis of similarities and differences in developments of industrial technologies may help. Concerning economic effects on political economies, economical theories (Schumpeter, Kondratieff et al) have observed cyclic behaviours in Industrial economies where new technologies stimulated economic growth. When concentrating on essential ("lead") technologies, industrial developments can be classified into essentially 4 cycles, each with about 40-50 years of duration (~45 years).

Faster than industrial technologies before, Information and Communication technologies (ICTs) continue to change economies and societies in ways affecting many aspects of human lives. "Traditional" communication – telephony using terrestrial cables, satellite and mobile cell-based communication – has enlarged human communication space even in its previously analogous, now also digitalized forms. Cables are still the major basis of digital networks but in some areas, flexible mobile communication is a major factor of information exchange in enterprises and daily life.

Concerning "lead technologies", it is interesting that phase 1 of the Information Economies depended upon initially large, heavy and difficult to handle "engines" (mainframes and their software) operated by specialists in "computer centres" – similar to factories in the Industrial economies - which developed into smaller and

more powerful machines (Mini, Micro and Personal Computers). With their advent, transport of digital results between remote sites became important and networks developed both within enterprises (Intranets, Local Area Networks) and globally. The development of The Internet – designed and intended for scientific and military communication – became the major "lead" technology for the 2nd phase, similar to the development of railway transport in the 2nd phase of the Industrial Age.

In the Industrial age, railways enabled faster transport of resources and products as well as they also supported human transport on broad scales. Thus, railways changed economic and human relations as they enabled to progress from local to regional and finally global activities. In similar ways, Information and Communication technologies have started to rapidly and deeply affect many relations established within the Industrial societies.

From Local-Area Networks (LANs) to the Internet as a cooperation of many Wide-Area Networks (WANs), digital communication based on the uniform Internet communication Protocol (IP) is changing many relations in and between enterprises (Business to Employee, B2E; Business to Business, B2B), but also between business and customers (business to customer, B2C) and governments (B2G). In same sense, though with lower speed of development, individual relations as patient (Health to Patient, H2P), student (School to Student, S2S, Student to University, S2U) and citizen (Citizen to Government, C2G) use technical features of digital communication combined with storage and processing of information. Essential processes of the Information and Communication Societies will be based upon production of digital values such as Information Search (aka Data Mining, I-Search): Changes in education such as distant and e-Learning as well as in democratic processes, e.g. e-voting are underway.

Remark: following contemporary implementation, such processes are labelled "e-"for "electronic", thus indicating the implementation using electromagnetic media and processes. As future technologies will likely use photonic and quantum technologies, it seems advisable to label such relations as "d-relations" thus addressing their digital nature.

Admittedly, speed and impact of these developments vary grossly over the planet. As in the Industrial Age, several countries (better: regions within nations) advance technical developments rapidly and benefit from their advantages esp. including the transfer of related products and methods into other parts of the world. The uneven distribution of development between regions and nations also implies that e-relations develop rather differently over the planet. With respect to the opportunities of modern technologies, the "digital gap" hinders less "developed areas" to participate in this global process for the best of their people. On the other side, this "digital gap" protects less-developed areas to be affected by unwished side-effects and serious (e.g. security) problems of these technologies which affect enterprises, governments, organisations and individuals growingly with undesired effects.

## 2. Risk Analysis of emerging Digital Technologies

After short times of usage of these technologies, organisations and individuals have become so dependant upon proper functioning of these highly complex and hardly understandable systems that any deviation from "normal" behaviour may have adversary if not damaging effects. It belongs to the daily experiences of "users" of Information and Communication Technologies that computerized systems fail rather often for reasons which a "normal user" can hardly analyse or understand. Failures range from unforeseen crashes, infections with malicious software esp. imported from Intranet or Internet communication to loss of data and programs and to a complete loss of any digital function and of connectivity.
A Risk Analysis of contemporary ICTs reveals a variety of reasons why such systems fail to work properly or to work at all. Following the "life cycle" of ICT concepts and products, risks can be graded into "vulnerability classes" which range from paradigms dominating their design – paradigmatic risks – over risks from deficiencies in the quality of production and products – implementation risks – to risks in ways how systems are used – usage risks. In addition, ICTs may be deliberately misused for criminal purpose.

**Paradigmatic risks (Vulnerability Class 1):** risks in this class are deeply inherent in assumptions made in the design process, and in the methods applied in the production (aka implementation) of hardware, systems and application software. Assumptions range from the concept that complex problems can be solved by cutting them into parts ("modules") which can be produced independently and subsequently combined to yield systems of high complexity. Apart from problems of adequate "cutting" of the modules and of their adequate interoperation, contemporary systems have become so complex that even experts can hardly understand their effects. In order to archive more functionality and interoperability, complex systems are combined with others to produce even higher grades of complexity. When systems from different origins with no common "interface" are combined, instruments are needed to "glue" such systems together; such "glue-ware" – "script" programming languages such as Java or Virtual BASIC – must be powerful to achieve many different adaptations which also provide easy means of exploitation even by less qualified "script kiddies". Indeed, the plenitude of malicious software (computer viruses and network worms, Trojan horses, trapdoors, backdoors, spy-ware etc) is essentially based on script languages used e.g. in office systems (Visual Basic for Applications etc). In summary, concepts and tools used in the design process very deeply influence both functions and risks of these digital technologies.

**Risks from inadequate implementation (Vulnerability Class 2):** the production of digital technologies, esp. system and application software (and to a lesser degree also of hardware and their "drivers") has many weaknesses, the most evident of which are inadequate qualification of programmers, inadequate testing and production under heavy time pressure. Undesirable results of conceptual and programming faults materialize mostly at user sites where such software behaves in unpredictable manners including destruction of achieved work and broken

connections. Numbers of experienced "computer emergencies" are rapidly growing, with sometimes millions of servers and even more local computers being affected by software weaknesses and "infected" by network "worms".

Software weaknesses are inherent in all kinds of contemporary software but the predominant effects materialize on systems of the most dominant system and software producers. Here, Microsoft leads both the markets of sold software and the world of software flaws as well as of malicious software living upon Microsofts insecure software design and imperfect software implementation. Although there are also many problems with non-MS systems (e.g. Linuxes), Microsoft systems dominate the scene of those incidents where in some cases many millions computer systems were affected.

**Risks from usage (Vulnerability Class 3):** not surprisingly, usage of unsafely designed and insecurely implemented software presents additional risks. After distributed software reaches user sites, installation and administration of system and application software when improperly performed may adversely affect performance and proper functioning of such software. Due to the complexity as well as due to inadequate documentation of these systems, users hardly understand effects of their attempts to "properly" use such systems. Consequently, users apply "trial and error" methods in learning to work with new features, rather than trying methodologically to understand which functions may have which effects, and which precautions should be taken to avoid unwished side-effects. This somewhat "explorative" way to use systems rather often leads to a risky attitude with potentially hazardous effects, e.g. by clicking on unknown attachments without due care.

Software manufacturers often argue that failure of software is mainly caused by improper actions of users. But in many – if not most – cases, the human-computer interface (e.g. the display of functions and operations on the screen, or the handling of input devices such as mouse and keyboard) are inadequately designed and users are not properly supported by help functions (which when existing in many cases are so complex that users are further mislead). While users are primarily interested to do their work, one must admit that they rather often tend to forget about any precaution and even sometimes bypass security measures when thinking that their work performance is reduced.

**Risks from deliberate misuse (Vulnerability Class 4):** Digital Information and Communication technologies provide many opportunities for deliberate misuse including criminal purposes. Though only few cases of criminal misuse have been reported and prosecuted, some of which were broadly covered in media although few of which produced major damage (such as the "SoBig" worm affecting some 100 millions of emails and several 10.000 enterprise servers), deliberate misuse for criminal purposes has not yet reached a significant impact on business and government use. Consequently, both legal provisions and the ability of prosecution agencies is less developed than in other areas of criminal law. But there is no doubt, that further development of ICTs will be associated with growing misuse, esp. as long as Class 1 and Class 2 vulnerabilities are so dominant in contemporary ICTs.

# 3. Impact of Vulnerabilities on Information and Knowledge Societies

As industrial technologies in the industrial age, Information and Communication Technologies will unavoidably affect many (though not all) parts of human organisations, economies, government and individual lives. As in the industrial society, these technologies are driven by supply-side concepts, and an analysis of any impact upon customers is (too) rarely in the scope of ICT developers. Consequently, such impact comes over the users – which have rarely any choice of avoiding ICT applications - without any possibility for them to understand or contain unwished effects.

Some of these changes have materialized in the first phase of the Information Society (based upon stationary operation), such as dependability from complex systems: as nobody can control whether results are correct in any detail, a consciousness of blind reliance among users has developed: "this must be true because this was produced by a computer". This pattern of overreliance and risk acceptance are even now, at the beginning of the 2nd phase (network-based operation) dominant. Comparable to those animals (lemmings) which blindly follow their forerunners, users tend to accept risks of PCs and The Internet as they feel unable to avoid them. In some sense, the more technologically a society advances, the more risks are blindly accepted. This seems to be a general pattern in contemporary societies as sociologists and philosophers observe and even label them as "risk societies" (Beck).

Besides general impact such as acceptance of risk, impact on individual attitude and behaviour can also be observed. While email as tool of direct and fast communication supports personal and business needs very well, at the same time it enforces an adaptation in user behaviour. At best, email enforces fast reaction and thus tends to dominate the time management of users: if you await fast reaction, you must also react fast, independent whatever else you are doing. Replying to email resets any other priority. This becomes esp. critical when unwished email seems to require reaction, such as malicious software requesting sanitary actions or floods of unwished email (spamming).

In general, usage of time changes significantly with contemporary communication systems. Similar to workers in industrial factories, users in connected ICT systems behave as slaves of engines which they can hardly understand and control. It remains a major task of education in the Information Age to unable users to master these engines rather than becoming controlled by them.

## 3.1 Responsibility of Experts and Governments to Deploy Safe and Secure Digital Technologies

In an Information Society so strongly depending upon complex and difficult to understand technologies, it is a primary responsibility of IT experts designing, implementing and operating related infrastructures and methods to avoid related risks as far as possible, and to make users aware of existing risks in order to help them to master related problems. Hence, risk assessment and risk management are major tasks for the forthcoming generations.

With "risk avoidance", Information and Knowledge systems must be structured in such a way that a class of given risks cannot materialize. Example: this strategy implies that a system is designed and constructed so that it cannot fail.

With "risk reduction", methods and mechanisms must be realized which reduce unwanted effects when some risk materializes, hopefully with lower probability. Example: this strategy implies that a system may fail but that there are curative mechanisms which reduce the damage when the system fails.

With "risk acceptance", nothing preventive or curative is done ("do not care" strategy). Example: although one knows about the vulnerability of a system, one simply hopes that nothing will happen and so one does nothing to prevent or reduce the risk.

While risk acceptance is what the vast majority of users practice, risk reduction is the strategy which many enterprises and governments presently apply: in order to reduce impacts of crashing systems and programs, "computer viruses" and "worms", hacker attacks, mass distribution of unwished email etc, special forms of security software (antivirus software, firewalls, intrusion detection systems etc) are deployed to reduce threats.

Risk acceptance may be regarded as acceptable strategy as long as large damage can be avoided. This strategy will be no longer acceptable when large damage cannot be avoided with minor protection methods. At the end of the 2nd cycle of the Information Society, dependability will have reached a degree that many small failures combine to blackouts similar to (though more serious than) recent power outages in USA and Europe.

In order to avoid that networks become so strongly interconnected that any failure becomes "critical" for large parts of societies and economies, the only solution in the next decennium is to redesign basic technologies as to become inherently safe and secure. Regrettably, mankind will only learn – as in the Industrial Ages – by severe accidents how urgent the need for safe and secure system designs even today is.

Beyond technical solutions, additional measures such as regulation of required preventive actions as well as requirements for curative "post mortem" (that is: provisions when systems have severely failed) must be taken by government and regulating bodies. Besides regulations requiring security standards enforcing "best practice", additional regulations (directives, national and international laws) must enforce protection of customers (persons AND enterprises) in cases of failure or dysfunctional behaviour, esp. including compensation of costs and consequences of experienced damage. Here, a minimum amount of knowledge about Digital Technologies and their weaknesses must be available at the regulating bodies, and these bodies must protect users rather than supply side, implying some resistance against the interference of the (presently dominant) IT lobbies. Indeed, manufacturers of insecure systems and software must become liable for significant loss of data and time as consequence from crashes of their products.

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# PART 2 - ETHICS AND DEMOCRACY INTO THE ICT

# Introduction to part II

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In the words of Nurminen, Berleur and Impagliazzo (2006:2) "how can we build up, whatever we may call it, an Information Society, a Knowledge Society, a Digital Society *for all*?" Surely, an ethical but also democratic process must be at the very core of this information society that we build? Such is the argument put forward by the authors of the second part of this book.

The unintended consequences of rapid technological development and explosive knowledge creation have decreased the area of personal ethical choice by directing the possibilities open to us and at the same time closing other possibilities. Personal and institutional changes – increases in roles and in institutions – have also decreased opportunities for personal ethical choice. Since role responsibility – which follows from these – is clearly not enough for the new technologically and socially complex times, we need an ethics of collective co-responsibility. Discourse, fact analysis, foresight, even constitutional change may be needed to ensure an ethically viable society. The difficult question is how to ensure the kind of public discourse in the new technical environments that will enable democratic decision making? Should the discourse in the public sphere (an increasingly large part of which is changing to digital form, especially in the Internet) be regulated and if so, how? It has to be acknowledged that discourse is always regulated in one form or another – if in no other way, then at least by the technology itself and by the choice of words used by those in power – it should at least be as free as is commonly understood and practiced by the populace.

In such a complex environment as the Internet, who has responsibility? The responsibility should only fall on the collective body of people affected; thus a democratic change is a necessity. However, counter to what Horner (see e.g. Horner 2004, 2005) has repeatedly argued, the authors in this section argue that we must take, and make use of, a predictive approach. That is, we have to make the best possible guesses on where the future will take us, based on a knowledge assessment of the technological facts, the decisions on the normative choices made through this discourse, and the collective normative choices of the people.

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One way of ensuring an ethical and democratic participation in Information Communication Technologies (ICT) would be to recognize and adopt the idea of "value sensitive design". Based on public discourse, normative analysis and a democratic method of governance, the institutions governing ICT development can influence the direction towards which public funds and legal measures are put. The values of any specific company designing ICT artefacts cannot be determined, but the choices available to them can be influenced through ethical and democratic governance of the field. An analysis based on the ethical compliance of an ICT artifact is not enough; instead we need a proactive ethics. These artifacts ought to be designed so that they *enhance* morally preferred solutions rather than attempting to mitigate their socially negative effects.

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# From the Ethics of Technology to the Ethics of Knowledge Assessment

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**Abstract:** This paper gives an overview of the way foresight knowledge concerning scientific and technological developments is deliberated in policy. It also offers an approach to assessing the quality of foresight knowledge generated during foresight exercises. Although "foresight knowledge" is a special case, the idea of having a procedure, approach or method available for assessing the quality of knowledge is tempting: foresight knowledge comes from various sources such as different scientific disciplines, normative visions on the future, planning, and scenario's. It also receives input from different sectors of society, such as industry, academia and civil society. How can we then assess the quality of knowledge inputs from such diverse sources and its implication for foresight exercises? This paper is a first attempt to address this subject matter. We realise that this type of work has not been done before, and we hope therefore that this first attempt will stimulate others to further explore this issue. Since the aim of this paper is to address "knowledge assessment" on "Foresight knowledge", we will first give an overview of what foresight actually is, before entering into the core issue of the paper - that is, what "knowledge assessment" addresses and where it could intervene in the framework of a Foresight-exercise. It may thereby also clarify the relevance of knowledge assessment beyond the context of foresight knowledge itself; although it will be seen that "foresight" is a particular case for which "knowledge assessment" is required. The first part of the paper is devoted to the deliberation process in the policy context and especially identifies the normative dimensions of such a process and its consequences for knowledge generation. The second part will enter into the issue of knowledge assessment of foresight knowledge. In both parts foresight knowledge is illustrated by reference to issues of sustainable development.

1 The views expressed here are those of the author and may not in any circumstances be regarded as stating an official position of the European Commission

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**Keywords:** Ethics of technology, foresight, deliberative procedures, precaution, knowledge assessment

# Introduction

My analysis departs from the contested assumption that contemporary ethical theories can not capture adequately the ethical and social challenges of scientific and technological development. This assumption is rooted in the argument that classical ethical theory always addresses the issue of ethical responsibility in terms of how intentional actions of individuals can be justified. Scientific and technological developments, however, have produced unintentional consequences and side consequences. These consequences are very often the results of collective decisions on the way we wish to organise our economies and society, rather than from individual actions. For a long time, it has not been sufficient to construct an ethics of science and technology on the basis of the image of a scientist who intentionally wishes to create a Frankenstein. So as a minimum we would require an ethical framework that addresses both the aspect of unintentional side consequences (rather than intentional actions) and the aspect of collective decisions (as opposed to individual decisions) with regard to complex societal systems such as the operation of our economy. We do not have such a theory at our disposal. More disturbing than the principle shortcomings of ethical theory, are the shortcomings of conventional ethical practice vis a vis technological developments.

Below I will use four developments to illustrate these shortcomings, which centre on the fact that individuals in our society can simply not be held fully accountable for their individual role within the context of scientific technological developments. I will call it the shortcomings of a theory (and practice) of individual role responsibility. From there, I will argue why we have to shift our attention to an ethics of knowledge assessment in the framework of deliberative procedures instead.

## Four developments that illustrate the shortcomings of individual role-responsibility

There has occurred a proliferation of roles within which individuals define their responsibilities. First, as a consequence of the professionalisation of multiple tasks previously carried out in nontechnical or private spheres we see an enormous differentiation of new roles individuals can take in our society. Science and engineering itself provides a modest illustration as it has broadened its functional specialisations from research, development, design, and construction to include production, operation, management, and even sales engineers; and its content specialization to include biomechanical engineering, biomedical engineering, biochemical engineering, nanoengineering, and more. Stepping outside the technical fields, the unfortunate *reductio ad absurdum* in this trend is the role professionalization of virtually every work-related activity: janitors become maintenance professionals, friendship becomes professional grief counselling, one

hires professional personal trainers to help one get the right exercise, etc. Although this development is primarily manifest as the quantitative proliferation of roles, it inevitably has qualitative implications.[2]

Second, and in parallel, the area for which an individual may be held responsible has been narrowed, as may be illustrated with an example from the sciences that could apply equally well to engineering. In the 1700s there were natural philosophers who pursued natural science. In the 1800s William Whewell coined the term "scientist", and initially there were simply scientists as such (separate from philosophers). This was followed by a period in which it was possible be a physicist, chemist, or biologist. Today, however, not even the term microbiologist is sufficiently descriptive of a scientific role. As a result some individual scientists may only be proficient in research they conduct on one specific microorganism, perhaps only in relation to a restricted number of biochemical processes in that microorganism. Individual scientists increasingly "know more and more about less and less," and thus can hardly foresee the consequences of their discoveries for related fields, let alone the possible applications that could result from interactions with other fields. Such an excessive differentiation of roles implies both a formal and a substantial delimitation in individual role responsibility.

Third, the number of roles that any one individual may possibly fill has dramatically increased. Synchronically, one person may well be a structural engineer (that is, a kind of civil engineer) doing research on earthquake remediation, a grant or contract administrator, a professor of engineering, a student advisor or mentor, an academic administrator (as department head or dean), an author -- not to mention a spouse, parent, church member, citizen, consumer, and more. Diachronically, the same person may alter all of these roles and/or complement them with literally hundreds of others. Moreover, the interchangeability of individuals and roles has expanded along with individual mobility, both temporally and geographically. This means, practically, that responsibility is more identified with a role than with a person, thereby complicating the responsible organization of professional tasks while significantly diminishing technical professional ethical commitments - not to mention loyalty.

Fourth, contemporary society is not only characterized by the differentiation of roles but also by the intensified institutionalization of the social-institutional spheres in which the role differentiation takes place. Science, engineering, economics, education, politics, art, religion, and more have all become so institutionally distinct that they largely determine the conditions for their own functioning. Regulation, insofar as it occurs, must increasingly take place internally within each sphere. Scientists regulate science, engineers engineering, economists the economy, and so on. As a result of this four-dimensional transformation of role differentiation space, technical roles may be said to have become increasingly less robust at the same time that opportunities for role conflict have only intensified, proliferated, and specialized, with individuals more freely floating between roles, although large role aggregates are more rigidly separated from each other than ever before in history. The result is a multifaceted undermining of that very role responsibility which has

2 See, e.g., Ivan Illich *et al.*, *Disabling Professions* (New York: Marion Boyars, 1977).

been the traditional basis of social order - and for which it is dubious that principle responsibility alone is able to compensate.

Although roles are increasingly central to the functioning of technoscientific society, technical responsibility - while continuing to be framed in terms of roles - is progressively weakened in the moral sense. During the last half of the 20th century in contemporary technological societies, professional roles gained such prominence that, together with their associated expectations and codes of conduct, they constitute one of the major foundations of contemporary ethical problems and dilemmas. Especially the role responsibility of executing assigned tasks from superiors has, outside of professional philosophy, become an important ethical issues of the 20th century.

As was most dramatically demonstrated in the 1962 trial of Adolf Eichmann, strict adherence to role responsibility easily leads to an almost banal immorality[3]. During the trial, Eichmann defended himself by appealing to his role as chief administrator of the mass execution of Jews during Word War II, pointing out that his responsibilities were limited to administrative tasks in a hierarchy in which he had to fulfill the orders and follow the instructions given to him by superiors. Although the Eichmann case is exceptionally horrifying, the kind of appeal he made is not so exceptional at all. Repeatedly individuals in technoscientific and contemporary management positions find themselves resorting to precisely this line of reasoning to justify their behaviors. The widely studied Challenger disaster of 1986, for example, may readily be interpreted as illustrating this phenomenon[4].

This infamous example and its not-so-infamous parallels have not, however, led to any wholesale rejection of individual role responsibility ethics. Instead, in the first instance it is often argued that individuals must simply acknowledge more than an administrative or technical role. Discussion has therefore focused more on the ethical dilemmas and conflicts that arise when two or more roles conflict[5]. This has varied from an emphasis on conflicts between the roles of being the member of a family and a professional to issues of the extent to which a technical professional may in certain situations have a responsibility to become a whistleblower. Rather than leading to an examination of the ethical foundations of role responsibility itself or the contemporary role differentiation pace, the dilemmas of role responsibility have become the focus of discussion. To resolve these dilemmas within an occupational role responsibility framework has been the primary intellectual concern, rather than to challenge the ethics of role responsibility itself.

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3 See, e.g., Hannah Arendt, Eichmann in Jerusalem: A Report on the Banality of Evil (New York: Viking, 1963).

4 See Diane Vaughan, The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA (Chicago: University of Chicago Press, 1996)

5 This is far and away the most common comment on role responsibility ethics. Dorothy Emmet, for example, in "Ethical Systems and Social Structures," Internatinal Encyclopedia of the Social Sciences (New York: Macmillan Free Press, 1968), observes in passing how individuals are often called upon "to meet the demands of a number of different and perhaps conflicting roles" and cites Chester I. Barnard's The Functions of the Executive (Cambridge, MA: Harvard Univesity Press, 1938) for documentary evidence. For other examples, see Downie, Roles and Values (1971); and David Luban, ed. The Good Lawyer: Lawyers' Roles and Lawyers' Ethics (Totowa, NJ: Rowman and Allenheld, 1983).

Still a third attempt to address role responsibility problems has involved attempts to develop an "ethics of technology"[6] or "ethics of science",[7] as well as a variety of studies that typically build on the phrase "social aspect of" in their titles -- e.g., the social aspects of engineering, the social aspects of computing, etc.[8] Such fields of scholarly activity are, however, more concerned with exploring and cataloging the phenomena themselves than with the underlying social orders or the development of normative responses to the occupational responsibility problem itself.

Interdisciplinary studies of the ethics of science and technology nevertheless regularly highlight the extent to which people increasingly feel inadequate to deal will the complex moral dilemmas in which role responsibility places them. The more common phenomenon, in the face of Eichmann-like situations, is not Eichmann-like self justification, but what Austrian philosopher Gunter Anders might associate with the doubts and guilt manifested by "Hiroshima bomber pilot" Claude Eartherly.[9] But was Eartherly really responsible? What about J. Robert Oppenheimer, the leader of the scientists and engineers who designed the bomb? Or what about President Harry Truman, who ordered the bomb dropped? Or President Franklin Roosevelt, who established the Manhattan Project? Or even Enrico Fermi and Albert Einstein, who wrote the 1939 letter to Roosevelt that called attention to the possibility of an atomic bomb?

The very complexity of the atomic bomb project calls into question any attempt to accept personal responsibility for the results. Yet certainly Oppenheimer and many other atomic scientists experienced some guilt, and their concerns led to the kinds of public activism illustrated by the founding of the Federation of Atomic (later American) Scientists and the creation of the *Bulletin of Atomic Scientists*. Anders' paradoxical critique and idealist call for expanding human powers of imagination and responsibility[10] is but the more philosophical manifestation of that intensification and multiplication of moral dilemmas which has led many people to

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6 See particularly Hans Jonas, The Imperative of Responsibility: In Search of an Ethics for the Technological Age, trans. Hans Jonas and David Herr (Chicago: University of Chicago Press, 1984).

7 The ethics of science has been much more institutionalized, but at the same time remained relatively internalist. See, e.g., Kristin S. Shrader-Frechette, Scientific Research Ethics (Lanham, MD: Rowman and Littlefield, 1995).

8 One prominent synthesis of such approaches has become known as the Science, Technology, and Society (STS) movement. For a good introduction to STS, see Stephen H. Cutcliffe, Ideas, Machines, and Values: An Introduction to STS Studies (Lanham, MD: Rowman and Littlefield, forthcoming); and Stephen H. Cutcliffe and Carl Mitcham, eds., Visions of STS: Contextualizing Science, Technology, and Society Studies (Albany, NY: State University of New York Press, forthcoming).

9 Claude Eartherly and Gunter Anders, Burning Conscience (New York: Monthly Review Press, 1961). In fact, Eatherly was not the pilot of the plane that dropped the Hiroshima atomic bomb on August 6, 1945. The pilot of that plane, the Enola Gay, was Paul Tibbets, and his bombardier Thomas Ferebee, neither of whom ever expressed any regret about his role. Eartherly was the piolot of a reconnaissance place that preceded the Enola Gay and gave the a go ahead. Questions have also been raised about the reality of Earthery's feelings, but he still stands as a symbol for a certain kind of response.

10 Gunter Anders, Die Antiquierheit des Menschen, 2 vols. (Munich: Beck, 1980).

feel that various issues are at once their responsibility and/or beyond their role competencies. The familiar not-in-my-backyard (NIMBY) syndrome in response to industrial construction or waste disposal and personal refusals to limit the consumption of high pollution consumer goods such as automobiles are but two sides of the same coin.

What thus emerges from our description of this four-dimensional transformation of the technical role responsibility space and the three attempts to respond to such a transformation is the picture of a society in which there is an imbalance in the relation between the individual's responsibility for a particular and temporary role and the collective responsibility which is represented by the simultaneous fulfilment of a great number of roles for the long-term. This is illustrated by the fact that in increasing numbers of instances it is impossible, even in a hierarchically structured technical professional system to assign to any one person responsibility for solving some particular problem. Who or what role is responsible for nuclear weapons proliferation? For stratospheric ozone depletion? For global climate change? Indeed, who or what role is responsible for even such mundane problems as traffic congestion? For the malfunctioning of my computer? For the presence of unlabelled genetically modified foods in grocery stores? The chance that any one individual can be identified as responsible for the consequences of our collective actions within and between the myriad systems and subsystems of the technoscientific world has become infinite small. Instead, in most instances it is increasingly the case that some form of co-responsibility for a collective organisation and action leading to consequences (both intended and unintended) is operative. At the same time, such collective coresponsibility is difficult to grasp and elusive; it often seems as difficult to pin down as some individual, organization, or even single body that might be held accountable for scientific and engineering developments.

## From Individual Role Responsibility to Collective Co-responsibility

I have described, in an admittedly summary manner but with strong empirical references, a society in which it is difficult for anyone to be held responsible for the consequences of many technoscientific actions. We rely on a theory of occupational role responsibility that is no longer in harmony with existing social reality, in response to which we commonly propose an alternative and expanded notion of role responsibility. The fact is that the consequences of a wide variety of collective actions cannot be reconstructed from the intentions of responsible individuals, and role responsibility ethics can bear only on the consequences of individually and intentionally planned actions.

Individuals assume responsibility for the consequences of their actions if and only if they can intentionally direct those actions and reasonably assess the consequences, both intended and unintended. (Unintended consequences may on some occasions be effectively covered by insurance, as with automobile insurance.) But the consequences of scientific discovery and engineering design often escape all common or natural means of assessment.

Science and engineering exist, in the first instance, within the scientific and technological systems and, subsequently, by means of a complicated transformation

and use, are transplanted into the system-specific logics of the economy, politics, and law. None of these system logics are traceable to the intentions of individuals, nor are the possible unintended consequences always assessable. Scientists having knowledge leading to applications which are then criticised by many in society, may rightly point out that they anticipated other applications. Engineers who design products, processes, or systems that wind up actually being used in a variety of ways (guns that kill people as well as protect them, for example) make the same argument. Scientists and engineers may even claim that the possible applications and/or uses are not part of their occupational role responsibilities as scientists or engineers.

What is clearly required is thus some transformed notion of responsibility beyond the simple multiplication of roles or the expansion of occupational role responsibility to encompass public safety, health, and welfare. Indeed, techno-scientific applications can remain ethically problematic even in cases where scientists and engineers have the best possible intentions and users have no conscious intention to misuse or abuse. (Think of the example of automobile pollution.) This situation constitutes the major ethical challenge we face today.

How are we to address the problematic consequences of collective action? Technological risks are examples of special concern. The nature of many technological risks is far beyond the framework of individual responsibility. Such risks arise, as Charles Perrow has argued, as a consequence of an interaction of semi-independent systems, many of which may themselves be in part so complex as to be outside direct control[11]. (Think of the examples of the economy or the legal system as well as those of the various sciences and fields of engineering.) Such risks often cannot even be constrained within the dimensions of some particular time and place, which makes the identification of possible victims impossible. For such risks it is thus not even possible to take out insurance. Many of the technological risks in our society have the same status as natural catastrophes[12].

In response to this problem, we would need an ethics of collective co-responsibility. The itemised inadequacies of occupational role point precisely in this direction. Such a collective ethics of co-responsibility arises from reflection on the social processes in which technological decision making is embedded. (It may even be interpreted as involving a renewed appreciation of Cicero's four-fold root of role responsibility.) That is, any new ethics must deal with the same substance as the old role responsibility ethics, namely with values and norms that restrict or delimit human action and thus enable or guide traditional decision making; but in the new ethics these values and norms will arise not simply in relation to occupational roles. Here it is appropriate to address at least four general features and requirements for the implementation of such an ethics, from which I can only elaborate the fourth feature in more detail here.

1. Public debate: *To be co-responsible includes being personally responsive.* It is clear that the norms of specific technical professions are insufficient because they arise from restricted perspectives. A true ethics of co-responsibility must be both

11 Charles Perrow, Normal Accidents: Living with High-Risk Technologies (New York: Basic Books, 1984). Revised edition, Princeton: Princeton University Press, 1999.

12 See, e.g., the argument of Ulrich Beck, Riskogesellschaft: Auf dem Weg in eine andere Moderne (Frankfurt am Main: Suhrkamp, 1986).

interdisciplinary and even intercultural, in order to provide a standard of justice for evaluating and balancing conflicting occupational role responsibilities. If we fail to provide such an ethics, we inevitably continue to aggravate the clash of cultures and unarticulated hostile responses to particular (globalised) technologies.

According to my view, an ethics of collective co-responsibility is expressed at the level of free (international) public debate in which all should participate. It is unethical and even unreasonable to make any one individual responsible for the consequences and/or (adverse) side effects of our collective (especially technological) actions. It is, however, ethical and reasonable to require individual participation in public debates (subject, of course, to the particular situation), or at least make this the default position for which persons must give reasons for being excused from such a duty. Upon everyone's shoulders rests a particular moral obligation to engage in the collective debate that shapes the context for collective decision making. It is not just engineers who do social experimentation; in some sense all human beings are engineers insofar as they are caught up in and committed to the modern project.

If we trace, for instance, the history of environmental challenges, we see that many issues which depend on the involvement of personally responsible professionals were first identified and articulated within the public sphere. Public deliberation does not primarily aim at creating of itself a reasonable consensus, but serves, among others, the function of presenting different relevant issues to the more or less autonomous systems and subsystems of society - that is, to politics, law, science, etc. The typically independent discourses of politics, law, science, etc. are called upon to respond to issues raised in public debate. An appropriate response by the appropriate subsystem to publicly identified and articulated issues constitutes a successful socioethical response. Conversely, responsible representatives of the subsystems are drivers for new debates, when they publicize particular aspects of an issue that cannot be fruitfully resolved within the limits of some specialized discourse. The continuous interaction between the autonomous subsystem discourses and a critically aware public provides an antidote for frozen societal contradictions between opposing interests, stakeholders, or cultural prejudices.

2. Technology assessment: To be collectively co-responsible involves developing transpersonal assessment mechanisms. Although the institution of the public realm and interactions with the professionalized subsystems makes it possible for individuals to be co-responsive, these deliberations are in many cases insufficiently specific for resolving the challenges with which technological development confront us -- that is, they do not always lead to the implementation of sufficiently robust national or international policies. Therefore all kinds of specific deliberative procedures - for instance deliberative technology assessment procedures - must be established to complement general public debate and to provide an interface between a particular subsystem and the political decision-making process. The widely discussed consensus conferences are one example of an interface between science and politics[13]. (Of course, the question remains here whether these types of interface are adequate ones).

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13 See I. Mayer, Debating Technologies: A Methodological Contribution to the Design and Evaluation of Participatory Policy Analysis (Tilburg, Netherlands, Tilburg University Press,

The implementation of ethics codes by corporations also constitutes an interface between the economic sector, science, and stakeholder interest groups, while national ethics committees are often meant as intermediaries between the legal and political system. Experiments with such boundary activities or associations have been, depending on the case, more or less successful. They represent important experiments for enabling citizens to act as co-responsible agents in the context of technological decision making. Yet the absence of adequately deliberative forums is certainly one reason why we are not yet able to democratically plan our technological developments.

3. Constitutional change: *Collective co-responsibility may eventually entail constitutional or structural political change.* The initiation of specifically new forms of public debate and the development of transpersonal science and technology assessment processes may eventually require constitutional adjustment. Indeed, the adaptation of specific deliberative principles in our constitutions must not be ruled out. Consider, for instance, the possible implementation of the precautionary principle, which is inscribed in the European Treaty and now also guides important international environmental deliberations (the Kyoto Protocol on Climate Change, the Biosafety Protocol, etc.). This principle lowers the threshold at which governments may take action to restrict scientific or technological innovation. It does not have to be shown with certainty that bad consequences will follow; it is sufficient if there is an absence of scientific certainty in cases where there is some indication of possible serious or irreversible harm to human health or the environment. The very implementation of such a principle requires new and badly needed intermediate deliberative science-policy structures. It imposes an obligation to continue to seek scientific evidence and enables also an ongoing interaction with the public on the acceptability of the plausible adverse effects and the chosen level of protection. The principle also requires companies to become more proactive and necessarily shapes their technoscientific research programs in specific ways.

4. Foresight and Knowledge assessment. The issue of unintentional consequences can be traced back among others to the (principle) limited capacity of the scientific system to know in advance the consequences of scientific discoveries and technological actions. Virtually all complex technological innovations from which our societies do benefit, are surrounded by scientific uncertainties and several degrees of ignorance. Instead of addressing the ethics of technology, it could therefore be more appropriate to address the "ethics" of knowledge transfer between our societal spheres such as the knowledge transfer between science and policy. As the "quality of the knowledge" will, by and large, determine our relative successes in using this knowledge in the context of all kinds of possible applications. At the same time, we do constantly need a form of foresight (as predictions about our future have been shown to be enormously imperfect) in which we evaluate the quality of our knowledge base and try to identify at an early stage societal problems and new

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1997); and I. Mayer and J. Geurts, "Consensus Conferences as Participatory Policy Analysis: A Methodological Contribution to the Social Management of Technology," in P. Wheale, Rene von Schomberg, and P. Glasner, eds., The Social Management of Genetic Engineering (Aldershot, England: Ashgate, 1998), pp. 279-301.

knowledge needs. In the next section I will analyse the normative elements of foresight knowledge assessment[14].

## Foresight and Knowledge assessment

The challenges that science related to public policy face today, have to do with the increasing recognition of the complexity of socio-environmental problems, requiring (ideally) extended engagement of relevant societal sectors for their framing, assessment, monitoring, and an extended deliberation process.

Foresight aims at providing visions of the future to explore effective strategic policy. Envisioning is inherent to any technological, environmental and social activity. It is explicitly or implicitly in assessment methodologies, policy documents or political discourse. Foresight is naturally bound by uncertainty and ignorance, multiple values, requiring a robust knowledge base made of different types of knowledge as the background and the justification of the exercises' outcomes.

The threats and opportunities of biotech have often been explored on the basis of the experience with nuclear technology. Nanotechnology is increasingly being compared on the basis of experience with biotechnology (see for example Grove White *et al,* 2004). Analogies or counterfactuals, do not allow for predictions but produce prospective plausibility claims, which, however, do have sufficient power to allow us to explore the future on the basis of consolidated knowledge from known areas. Conflicting plausibility claims articulate and make us aware of uncertain knowledge whereby equally plausible claims are based on alternative sources of knowledge (most often from different scientific disciplines). However, these plausibility claims mutually lack any falsifying power (see Von Schomberg, 2003). They either lose substance or become more persuasive, once empirical research supports particular paradigms resulting from those plausibility claims. For instance, the argument (an analogy) of a "greenhouse effect" set the plausibility of the occurrence of global warming: an analogy that has been strengthened by actual observed temperature rises over the last decade, although the empirical basis in itself would not be sufficient to prove the thesis of the greenhouse effect. Foresight knowledge distinguishes itself from "normal" scientific knowledge, in the sense of Kuhn's normal science, and shares many aspects (although not identical) with what Ravetz & Funtowicz (1990) have called *post-normal science*:

Foresight knowledge can be distinguished from knowledge produced by normal science since it has the following features:

1. Foresight knowledge is *non-verifiable* in nature since it does not give a representation of an empirical reality. It can, therefore, also not be related to the normal use for the "predictability" of events. The quality of foresight knowledge is discussed in terms of its plausibility rather than in terms of the accuracy of the predictability of certain events. Foresight exercises are therefore often characterised as "explorative" in nature and not meant to produce predictions;

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14 For an extensive analysis see: Von Schomberg *et al* (2005), Deliberating Foresight Knowledge for Policy and Foresight Knowledge Assessment, A working document from the European Commission Services, Directorate General for Research, Brussels.

2. Foresight knowledge has a high degree of uncertainty and complexity whereby uncertainties exist concerning particular causal relationships and their relevance for the issue of concern;

3. Foresight knowledge thematises a usually coherent vision whereby relevant knowledge includes an anticipation of "the unknown";

4. Foresight knowledge has an action-oriented perspective (identification of threats/challenges/opportunities and the relevance of knowledge for a particular issue) whereby *normal* scientific knowledge lacks such an orientation;

5. Foresight knowledge shares a typical hermeneutic dimension of the social sciences and the humanities, whereby the available knowledge is subject to continuous interpretation (e.g. visions of "the future" or what can account for a "future" are typical examples of such an hermeneutic dimension);

6. Foresight knowledge is more than future-oriented research: it combines normative targets with socio-economic feasibility and scientific plausibility;

7. Foresight knowledge is by definition multi-disciplinary in nature and very often combines the insights of social and natural sciences.

Foresight knowledge can be understood as a form of "strategic knowledge" necessary for agenda setting, opinion formation and vision development and problem-solving. In the case of underpinning the objective of sustainable development, Grünwald[15]16 has captured the characteristics of "strategic knowledge for sustainable development", in which many of the above mentioned general aspects of foresight knowledge reappear, in the following three statements:

- strategic knowledge, as a scientific contribution to sustainable development, consists of targeted and context-sensitive combinations of explanatory knowledge about phenomena observed, of orientation knowledge evaluative judgements, and of actionguiding knowledge with regard to strategic decisions (compare the aspects 4,5 and 7 above);
- this strategic knowledge is necessarily provisional and incomplete in its descriptive aspects, as well as dependent on changing societal normative concepts in its evaluative aspects (compare aspects 2 and 6 above);
- dealing with strategic knowledge of this sort in societal fields of application leads to a great need for reflection on the premises and uncertainties of knowledge itself. Reflexivity and the learning processes building upon it become decisive features in providing strategic knowledge for sustainable development (relates to aspects 1 and 3 above).

## Foresight and Deliberation

Foresight activities should be adapted to processes of deliberative democracy of modern western societies. Deliberation goes obviously beyond the meaning of simple discussions concerning a particular subject matter, and in its broadest

15 Grunwald, A. (2004) 'Strategic Knowledge for Sustainable Development: The Need for Reflexivity and Learning at the Interface between Science and Society', *International Journal of Foresight and Innovation Policy*, 1.1–2: 150-67

meaning can be understood as "free and public reasoning among equals" (Cohen, 1994)[16].

Deliberation takes place at the interface of different spheres, as we will see for example when we deliberate on the basis of foresight knowledge. In this section, I especially explore the deliberations that take place at the policy making level and at the science-policy interface.

The deliberation levels that relate to particular spheres, such as *"politics"*, *"science"* or *"policy"*, can be characterised by specific normative boundaries. The specific outcomes from each deliberation level can be fed into other levels of deliberation, which are constrained by yet another set of distinct normative boundaries. Most often these boundaries are not simple consensual assumptions, justly shared by the actors involved, but may be fundamental policy or constitutional principles which are the result of longer learning processes and which have to be shared in order to achieve particular quality standards of policies and decisions. For instance, deliberation on risks and safety under product authorisation procedures within the European Union are guided by the policy objective, which is enshrined in the EU treaty, to aim at a high level of protection of the European citizen.

Below, I will outline the normative boundaries of the different levels of deliberation (see table 1) within which foresight activities are invoked, implemented or applied. It should be noted that the different levels of deliberation do neither represent a hierarchy nor necessarily a chronological sequence, as deliberation levels mutually inform and refer to each other, deliberation at each particular level, can spark new deliberation at other levels.

We work here on the basis of examples of a most *advanced form of embedded foresight* integrated in a wider policy context. What follows is an ideal-type of description of all relevant deliberation levels in relation to the use of foresight knowledge (although there are striking similarities with the usage of (scientific) knowledge in policy as such). Theorists of deliberative democracy work on the clarification of particular levels of deliberation within particular spheres of society. Neblo[17] (2004) describes levels of public deliberation in terms of "deliberative breakdown". Fisher1[18] (2003) and Dryzek[19] (1990) describe procedures of discursive politics. Grin *et al.* (2004)[20] defines particular deliberations as practices of "reflexive design". We will here elaborate the levels relevant for deliberating foresight knowledge for public policy.

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16 Cohen, J(2004). Procedure and Substance in Deliberative Democracy in S.Benhabib (ed) Democracy and Difference. Princeton, New Jersey, Princeton University Press.

17 Neblo, M.A. (2004). *Thinking through Democracy*: *Deliberative Politics in Theory & Practice*, Paper presented at the Conference on "Empirical Approaches to Deliberative Politics" European University Institute, Firenze, 21-22 May 2004

18 Fischer, F. (2003). Reframing Public Policy. Discursive Politics and Deliberative Practices. Oxford: Oxford University Press

19 Dryzek, J.S. (1990). Discursive democracy: politics, policy, and political science, Cambridge: Cambridge University Press.

20 Grin, J., Felix, F., Bos B. and Spoelstra S. (2004). Practices for reflexive design: lessons from a Dutch programme on sustainable agriculture, *Int. J. Foresight and Innovation Policy*. Vol 1. Nos 1/2 , pp.126- 149.

The very first level concerns a broad *political* deliberation, which assumes a political consensus on the need for long-term planning when it engages in foresight exercises.

At that broad political level, foresight will be understood as a form for early anticipation and identification of threats, challenges and opportunities that lie ahead of us. Foresight exercises are essentially about the identification of such threats/challenges/opportunities. It is thereby important to realise that, for instance, a Technology Foresight exercise *identifies* technologies or other developments that may have an important impact, rather than assessing those technologies themselves:

"The act of identification is an *expression of opinion* (italics: by authors of this paper) (which amounts to a form of implicit, covert assessment, the assessment of the relative importance of the technologies identified must necessarily follow their identification" (Loveridge, 2004: p.9).

Those "opinions" are unavoidably normative in nature, and do not relate directly to the assessment of the technology but rather to the assessment of their potential with regards to particular perceived or actual threats/challenges and opportunities. A proper foresight exercise should therefore make these dimensions explicit in order to feed a deliberation process on a *sound* basis before achieving final conclusions. Foresight exercises need to refer to widely shared objectives (for instance those in international treaties and constitutions) such as the objective of sustainable development with its recognised three pillars (social, economic and environmental) in order to embed the broad political context. Foresight exercises can also be built on more controversial assumptions, yet those exercises may have a function of stimulating and informing a broader public debate rather than aiming at particular policies and or actions. Foresight exercises can be *invoked* at this political level of deliberation.

In a second level, one can identify deliberation at the *policy level* which immediately builds upon outcomes of political deliberation. It will need to map and identify those challenges/ threats and opportunities which are (in)consistent with more particular shared objectives, such as a high level of protection of consumers and the environment, sustainable growth and economic competitiveness. At this level a policy framework needs to be agreed upon for the implementation of foresight in a broad sense, at least by identifying institutions and actors which will take charge of foresight exercises. A number of countries have institutions, such as particular councils, committees or assessment institutes for those tasks in place. Such institutions can then plan studies which are part of the foresight exercise and can include activities such as (sustainability) impact studies, cost-benefit analysis, SWOT analysis, scenario studies etc. These studies should outline scenario's, challenges and threats and verify its consistency with relevant drivers.

A third deliberation level, the *science/policy* interface, is of particular interest since it qualifies the input of a diverse range of knowledge inputs, e.g. those of the scientific community, stakeholders and possibly the public at large by *applying* foresight (scenario workshops, foresight techniques/studies/panels etc).

At the science/policy interface, the state of affairs in science needs to be identified in relation to the identified relevant threats/challenges and opportunities. A particular task lies in the qualification of the available information by formulating statements on the available information in terms of sufficiency and adequacy – a

preliminary form of *Knowledge assessment*. The identification of knowledge gaps is a particular task to sort out the state of affairs in science, possibly leading to later recommendations for further scientific studies to close those gaps. Also, depending on the timelines during which those decisions should be made, particular decision procedures for situations under conditions of uncertainty need to be taken into account. When communicating the results of the science/policy interface to the policy and political level, the proper handling of uncertainty has to be taken care of, and failure to do so have often lead to disqualifications of the used scientific knowledge at political level and in public debate. With uncertain knowledge, particular assumptions must be made as to whether particular consequences pose in fact a threat to us or not. For example: do we see 1, 2 or three degrees temperature rise as *unacceptable* consequence in terms of climate change? Do we think a 3 percent increase on public and private investments in science and technology by 2010 would make our economy sufficiently competitive? These assumptions represent "transformable norms", as their acceptability changes in the light of ongoing new scientific findings. For instance, an initially assumed acceptable normative target of a global two degrees temperature rise may turn unacceptable when new scientific findings indicate to more serious consequences than previously thought. New knowledge about these issues leads to continuous reframing, making Foresight and monitoring practices necessary partners.

| Normative boundary of deliberation level | Type of operational normative rationale | Factors/normative considerations to be taken into account | Normative decision modi |
|---|---|---|---|
| Broad political debate | Political consensus on long term planning | *Invocation of Foresight* Threats/challenges /opportunities; normative reference points: Three pillars of Sustainable development/ Lisbon/Barcelona | Early anticipation/ identification |
| Choice of Sustainable Development targets and challenges | Aim at high level of protection Aim at sustainable growth Improve quality of life | High Level of protection Sustainable growth, competitiveness | Defining/ Mapping Threats and Challenges |
| Political/societal | Choice of policy framework | Implementation of foresight | Allocation of tasks to Foresight institutions/involvement of parties |
| Broad policy debate | Cost/Benefit analysis impact analysis | Health/environment takes precedence over economic considerations | Priority setting/selection e.g. minimalising costs, maxamilising benefits, priority to health etc |
| Type of measures | Enabling Monitoring practice | Proportionality requirement | Measures to enable Monitoring practice, Learning practice development of indicators/bench marking |

| | | | |
|---|---|---|---|
| Normative qualification of the scientific debate | Identification of state of affairs in science/normative qualification of knowledge Identification of knowledge gaps | Particular threats/challenges/ opportunities<br><br>Application of foresight | Normative qualification of available information. Relating the quality of available information to Importance of challenges etc |
| Normative approach to dealing with threats/challenges/ opportunities | Identification of transformable standards, 3 percent target, etc scientific and technological options | (Undefined) normative standards for acceptability, safety etc of products/processes | Choice of transformable standards: growth rates, sustainability targets, for example:reduction of biodiversity, acceptable levels of temperature rise , levels of use of renewables etc |

*Table 1: Deliberation levels involving the progressive invocation, application and implementation of foresight with its normative boundaries*

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# Deliberative democracy : from Rational Discourse to Public Debate

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**Abstract:** This paper will discuss the concept of a "deliberative" democracy. Various key authors on deliberative democracy will be highlighted: James Bohman, Amy Gutmann, Jürgen Habermas and John Rawls. The role for political communication of the mass media and of the internet will be outlined.

**Keywords:** Deliberative democracy, democratic legitimacy, public reason, discourse ethics, mass-media, Jürgen Habermas, John Dewey, James Bohman, Amy Gutmann.

Practices of public deliberation play an essential role in recent theorizing about democracy and, in particular, "deliberative" democracy. However, little attention is usually paid to the role of the mass media in such practices of governance. My objective in this paper is to prepare a framework for the normative evaluation, criticism and appraisal of mass-mediated communication specifically in relation to the requirements of deliberative democracy.

## 1. Democratically required Forms of Publicity

Consider the following essentialist argument from the concept of publicity. Publicity, one might say, is the condition of

(1) being known as a permitted topic for conversation, or knowable without special effort, to all members of a community of communication,

(2) where this condition itself is public in the sense of (1).

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Publicity in this sense can be glossed as non-exclusionary thematizability. Any form of democracy (so the argument goes) requires publicity - be it in a minimalist sense of the publicity required for general elections and other voting procedures or be it in the more demanding sense in which we speak of rational opinion formation as a public process, e.g, when citizens deliberate with regard to political public goods. The mass media control the overall flow of public communication. So they provide, shape, channel publicity, engendering it and limiting it at the same time. Hence democracy requires the mass media.

This conclusion is not exactly wrong but it is not exactly right either. Consider: What is really required for democracy are *suitable* forms of publicity; and nothing intrinsic to mass-mediated communication guarantees that a particular mass media configuration will generate or support rather than destroy or impede such forms. As a matter of fact, *any* form of political governance needs "suitable" forms of publicity. This holds for dictatorships, for theocraties, and other "well-ordered" (in the sense which John Rawls gave the term) but non-democratic societies. Any form of political governance must involve mass media that are configured in the right way for providing *its* requisite forms of publicity.

To the extent that alternative ways for generating such forms are insufficient or do not exist at all, mass media are integral to political governance and good political governance depends (in some measure) on whether their overall configuration suits the respective form of political governance.

How should a set of mass media be configured so that they support or at least do not subvert a democratic regime of political governance? This question can be rephrased in the following way: What is it for a configuration of media to be conducive to those forms of publicity that are required in order for some particular mode of democratic governance to flourish? This sense 'required' is a broadly functionalist sense that is available in normative as well as in non-normative theories of democracy.

Within *non-normative* theories of democracy, different theoretical models of democracy may compete for empirical adequacy or some other laudatory mark of sociological excellence. But we inevitably move from non-normative into normative theories of democracy as soon as a particular theoretically specified form of democratic governance has to be justified as being more recommendable as a form of political governance than other democratic (or non-democratic) forms of political governance.

*Normative* theories of democracy vindicate particular forms of democratic governance as politically good governance (or politically better than x) by elaborating distinctive political rationales whose justificatory potentials can be compared and evaluated. How does media-theory bear on this? The gamut of media theories ranges from the cultural to the engineering sciences and is a variegated field of broadly empirical knowledge about the realities (functions, structures, effects, history, "software", "hardware", etc.) of mass-mediated communication. Assume we subscribe to a particular normative theory of democracy that vindicates some particular form D of democratic governance, e.g., governance by a secular parliamentary representative state system, as in France. This permits us to frame

media political prescriptions. Consider the following schematic justification for media political proposals:

(1) For such and such reasons R, we ought politically to prefer to govern our affairs in the framework of a political system that accords with D.

(2) Our normative theory of democracy helps us to distinguish between forms of publicity that are in alliance with D and those which are not.

(3) Given what our best media theory says about media realities, we have reason to think that subversive forms of publicity (as specified in 2) are in fact related to such and such determinate features of the media configuration that we have or could establish if we so wished.

(4) We ought politically to prefer changes in our media system that bring the relevant features of that system closer to changes into the direction of forms of publicity that are in alliance with D and away from those which are not (as implied by 2 & 3).

Note that whatever the right features of the media turn out to be, the media ought to have them for no other reasons than for those which already do all the normative work in premise (1): reasons by appeal to which we can justify claims that we make on each other as citizens to the effect that something ought politically to be preferred, or that politically preferring something - having some determinate political preference - is a valid policy for us to try out. Depending on their respective foundational strategy, normative theories of democracy will differ in what they specify should count as good R-reasons in premise (1), since different normative theories of democracy employ different conceptions of the political, of political governance, and of what democratic political governance is good for. Is democracy "best viewed as a device for protecting rights, a device for aggregating mere preferences, a device for distributing power, or a device for identifying political truths?"[1]

## 2. Democratic Legitimacy as rooted in the Consent of the Governed

Depending on what we hold to be the most important point of democratic political governance, democracy has been defended because it results in wise policies, or in a just society, or in a free society, or that it engenders decisions which promote the public interest or the common good, or that respect individual rights, or promote science and intellectual activity, and so on. "The list is limited only by one's resourcefulness in enumerating the good things of life and the conviction with which one is able to argue that democracy will promote them".[2]

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1 Copp, David & Hampton, Jean & Roemer, John E. (1993), eds.: The idea of democracy. Cambridge: Univ. Press, p. 18.

2 Jones, Peter (1982): Political Equality and Majority Rule. In J. Arthur (1992) ed., Democracy. Theory and Practice. Belmont, Wadsworth (208-222), p. 209f. For a critical discussion see Cohen, Carl (1971): Democracy. Athens, Univ. of Georgia Press.

We may add to this rhapsody of *outcome*-oriented rationales of democratic modes of governance still other normative theories of democracy, namely those that elaborate specifically *procedure*-oriented rationales. The procedurally most important point of democratic political governance, then, may be glossed as "communicative rationality" of the legislative process, [3] or alternatively as "fairness" in the sense of treating as equal all citizens' interests that arise out of their membership in the political community, [4] or as "fair compromise". [5] All normative theories of democracy have in common that each particular conception of *good* political governance can be rephrased in the language of normative claims to intersubjective bindingness, i.e., in terms such as 'political legitimacy', 'political validity', or 'political acceptability'. The reason is that any notion of democratic governance, be it outcome or process oriented or both, must somehow refer to the *consent* of the governed, and political legitimacy, validity, or acceptability are systematic elaborations of the democratic core notion of the *consent of the governed.*

Let 'democratic legitimacy' be shorthand for what normative theories of democracy seek to articulate as a distinctive, namely political, form of normativity. Democratic legitimacy should be associated with democratic political arrangements and should not be reducible to other forms of normativity, e.g. moralities or religious commandments. If a normative theory of democracy claims on strength of some rationale that democratic legitimacy of any particular use of political power, (e.g. formulating and putting into force a certain piece of legislation) ought to rest on good reasons, then it must also claim that such reasons ought to be *public reasons.* Otherwise, some or all the citizens who stand to be affected by that particular use of political power would have to consent or dissent for no reason at all, or for no reason known to all citizens alike. The consent of the governed would be, for that matter, uninformed, ignorant, blind. Interestingly, the allegation that such blindness is the predominant condition in democracies is a standard topic in cynical or sceptical attacks against too sanguine claims of normative theories of democracy. [6]

Supposedly, the easiest way to render reasons public is by making them known via mass mediated communication. If mass media can in fact be so configured that they can satisfy this condition which is (according to the rationale of the respective normative theory of democracy) a necessary condition for all claims of democratic legitimacy, then they ought politically to be so configured (on strength of the same rationale).

However, with publicity being merely a necessary condition on reasons of democratic legitimacy, we do not have much to go on. Now let us make the condition stronger. Consider: The rational point of giving reasons is their use in

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3 Habermas, Jürgen: Between Facts and Norms. Cambridge, MIT Press 1996.

4 Beitz, Charles (1989): Political Equality: An Essay in Democratic Theory. Princeton, Univ. Press.

5 Singer, Peter (1973): Democracy and Disobedience. Oxford, Univ. Press.

6 See the meanwhile classic controversy between Walter Lippmann (Lippmann, Walter (1925): The Phantom Public. New York, Harcourt) and John Dewey (The Public and its Problems. J.A. Bodyston (1988) ed., The Later Works 1925-1953. Carbondale, Southern Illinois Univ. Press, pp. 235-372). For a more recent trenchant scepticism see Herman, Edward S. & Chomsky, Noam (1988): Manufacturing Consent. The Political Economy of the Mass Media. New York, Pantheon.

available practices of deliberation and argumentation. Reason-giving and practices of argumentative discourse are rational complements. The publicity of reasons thus has its rational complement in the availability of public deliberation and argumentation.

Of course, not all normative theories of democracy exploit this complementarity (which in turn has to be justified in a theory of rationality). Call those that do, the "advocats of deliberative democracy". Advocats of deliberative democracy maintain that democratic legitimacy must rest on, i.e. ought politically to rest on, no other reasons than reasons that can be made good by public uses of public reasons.[7]

If my aim were to criticize existing theoretical models of deliberative democracy I would criticize them mainly on four counts:

(1) Media ignorance. Although some of the authors of such models realize, however dimly, that mass-mediated communication plays a crucial role for the constitution of 'public reason', they invariably undertheorize the relation between empirical media theory and normative theory of democracy.

(2) Illusionary idealizations: Many models of deliberative democracy involve idealizations that founder on the facts of deep value pluralism and subcommunal fragmentation that are endemic in the political and non-political culture of modernity in advanced capitalist societies today. For instance, Rawls contends that "there are many nonpublic reasons and but one public reason".[8] In my view, this is a unitarian idealization that renders Rawls' liberalism unrealistic.[9]

(3) Insufficient sensitivity to globalization: The consequences of globaliziation processes on democratic modes of governance remain to be fully accommodated in normative theories of democracy, especially theories of deliberative democracy.[10]

(4) Avoidance of a moral point of view: Often "the domain" of the political is set over against "the moral domain" without due recognition of the fact that political argument has a moral edge to it.

The first and third points are momentous but cannot be elaborated within the confines of this paper. Let me address the fourth point now before I take up the second. Consider the following scenario. You conceive of democracy as a set of institutions that would engender outcomes more in the perceived interest of a majority of society. This gives you a (relative to your conception) good public reason for claiming in debate with me or other German citizens that our public service broadcasting ought politically to be dismantled in favour of commercial

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7 The term 'public reason' (cf. Rawls, John: Political Liberalism. New York, Columbia Univ. Press
1993, pp. 212-254) has become common parlance, though interpretations both of public use and of public reasons vary considerably. Compare, for instance, David Gauthier Gauthier ("Public Reason", Social Philosophy and Policy, vol.12 no.1 (1995) pp. 19-42), Gerald Postema ("Public Practical Reason: An Archeology", Social Philosophy and Policy, vol.12 no.1 (1995) pp. 43-86), James Bohman (Public Deliberation. Pluralism, Complexity, and Democracy. Cambridge, MIT Press 1996).

8 John Rawls: Political Liberalism. N.Y., Columbia University Press 1993, p. 220.

9 That Rawls takes "cultural pluralism" only insufficiently into account is forcefully criticized by John Gray (Liberalisms. London, Routledge 1989, cf. ch. 9 & 10) as well as by James Bohman (Public Deliberation. Pluralism, Complexity, and Democracy. Cambridge, MIT Press 1996, pp. 71-106) who extends his criticism to Habermas' conception of public reason.

10 But see John B. Thompson: The Media and Modernity. Stanford, Univ. Press 1995.

broadcasting, since a majority of German citizens actually perceive the latter to be more in their interest than the former. I conceive democracy as a set of institutions "which treat all individuals as autonomous agents capable of forming reasoned judgements through the assimilation of information and different points of view, and which institutionalizes a variety of mechanisms to incorporate individual judgements into collective decision-making processes [so that] the legitimacy of a decision stems from the fact that the decision is the outcome of a process of generalized deliberation".[11] This gives me a (relative to my conception) good public reason for claiming the opposite, since only the former media configuration is legally held up to the task of nourishing public deliberation by fostering a balanced diversity of public reasons. This institutional responsibility is enshrined in article 5 of the German constitution which specifies the responsibility of the public broadcasting system.

When should (your) reasons pertaining to the importance of people's *getting* what they actually want defeat (my) reasons pertaining to the importance of people's *deliberating* about what they want? Suppose we do not find sufficient common ground in our different conceptions of democratic legitimacy for deciding our controversy. Yet it is important for both of us which reasons eventually will win out. After all, the legitimacy of a political decision eventually places us under an obligation to comply with it and sanctions state authority to enforce such compliance. This is no small deal. The momentous consequentiality of legitimacy stems from its alliance with coercive power. This is why *political* deliberation inevitably has a *moral* edge.

In our controversy, we will soon be driven (in order, for instance, to find a fair compromise) to explore very abstract normative assumptions of our respective conceptions, whence we sail into the waters of a moral discussion. Of course, nothing in this shift from scrutinizing political normativity to scrutinizing moral normativity guarantees us that we will achieve a determinate consensus. But *discourse ethics* provides at least the morally required parameters for a space of critical reasoning in which we would be free enough to find out. In the next paragraph I turn to the second point on my list of four critical points to consider.

## 3. Deliberative Democracy: From Discourse to Public Dialogue

What is deliberative democracy all about? Gutmann and Thompson give a succinct normative answer along the following lines: "The essential idea is that all institutions of government have a responsibility for deliberation. Institutions should be arranged so as to provide opportunities and incentives for officials and citizens to engage in moral reasoning. Institutions should also be transparent in the sense that their actual purposes should coincide with their publicly acknowledge purposes. (...) The practice of deliberation should not be confined to the institutions of government. Unless citizens have the experience of reasoning together in other institutions in which they spend more of their time they are not likely to develop either the interest

11 John B. Thompson: The Media and Modernity. Stanford, Univ. Press 1995, p. 255.

or the skill that would enable them to deliberate effectively in politics. That is why it is so important that the processes of decision making that citizens encounter at work and at leisure should seek to cultivate the virtues of deliberation. The discussion that takes place in these settings not only is a rehearsal for political action, but also is itself a part of citizenship in deliberative democracy. Deliberative democracy does not demand that all social institutions primarily serve its ends, but its success does depend on the support of the whole range of intermediary institutions – those that act on citizens (such as the media, health care organizations, professional sports), those in which they act (interest groups, private clubs, trade unions, professional associations), as well as those in which they work (corporations, small businesses, government agencies, military services). In an effort to make democracy more deliberative, the single most important institution outside government is the educational system". "Deliberative democracy is more idealistic than other conceptions because it demands more than democratic politics normally delivers. It is more realistic because it expects less than moral agreement would promise. While acknowledging that we are destined to disagree, deliberative democracy also affirms that we are capable of deciding our common destiny on mutually acceptable terms."[12]

It is evident that the deliberation of deliberative democracies cannot be confined to specialized publics (e.g., parliaments) and particular confines of discourse (e.g., constitutional review). Consequently, deliberation in deliberative democracies will have to be practiced in highly diverse settings where people with wildly differing value orientations come together.

Suppose we have strong political and moral arguments that establish that deliberative democracy ought politically and morally to be preferred over various other forms of governance. Then all legitimating reasons for doing politically significant things (e.g., law-making) ought to be such that they can be made good by public uses of public reasons. However, this condition is still too formal. It does not capture that citizens, due to the fact of pervasive value heterogeneity, may differ in their perceptions of the political relevance of any public use of any public reason. The only sensible move for a normative theory of democracy is to embrace this fact, not to deny it. This is hard since it means cutting back on any claim to privileged interpretative authority and acknowledging that "political significance" really is a social construct - an essentially contested one - emerging from the interpretative efforts of all citizens who are actually engaging in such efforts. I propose the following realistic concept of a *res publica reason*:

For any public use of any *public* reason R, if a determinate subset S of citizens share a determinate interpretation of R's political significance because qua members of S they recognize some concern as their common concern, then R is a *res publica* reason relative to S.

Obviously, R can be a merely public reason relative to one subset S1 and fail to be a res publica reason for S1 and at the same time be a res publica reason relative to another subset of citizens, S2. For any action A that is intended to have differential political consequences, A is legitimate for the subset of citizens who can recognize

12 Amy Gutmann & Denis Thompson: Democracy and Disagreemant. Cambridge: Harvard University Press 1996, pp. 358, 361.

in A, on the basis of appropriate public uses of relevant and undefeated res publica reasons R, their "res publica", i.e. their common-wealth or common well-being. Deliberation is political, I would like to say, if it aims at scrutinizing, extending or limiting, promoting or withdrawing the recognition of reasons as res publica reasons.

How would communicative public space have to be configured in order to support rather than stifle this kind of deliberation?

It is tempting (at least for some advocates of deliberative democracy) to respond that communicative public space should be configured as a *rational discourse*. However, a Habermasian concept of fully fledged discourse, though it has great theoretical merits in other respects, cannot embrace drastically differing value orientations that are normal when citizens meet in real public deliberation over some politically controversial issue.[13]

Bohman, after extensively arguing this point, concludes that "what is required in cases of deep conflict is a genuinely moral compromise in which plural public reason is exercised in the process of creating a framework for such an ongoing public consensus, now a minimal one that demands only the willingness to continue to cooperate."[14] Note that "willingness to continue to cooperate" in the face of irreconcilable dissensus is a far weaker and for that matter far more realistic constraint on public deliberation than are the highly demanding rational presuppositions of an argumentative discourse in the Apel-Habermasian sense of that term.

In the remainder of this paragraph I will supplement Bohman's suggestion with John Dewey's interesting concept of a political public. Deweyan political publics emerge as self-organizing responses to external effects of internal activities within a community of interaction and communication: "Indirect, extensive, enduring and serious consequences of conjoint and interacting behavior call a public into existence having a common interest in controlling these consequences."[15]

How so? Dewey distinguishes private and public forms of association. For the members, the consequences of their conduct in private associations are "direct" consequences. But the activities of such groups often have consequences for persons who are not within the group: "indirect" consequences. Sometimes these are perceived as momentous. A Deweyan public comes into existence as soon as some members of a body politic perceive themselves as "indirectly and seriously affected for good or for evil"[16] by activities of their co-associates and become interested in bringing those activities and their important indirect consequences under some kind of collectively binding arrangement. One and the same person will belong to

13 For a critical discussion of the general discourse principle that Habermas has introduced in his work on the democratic state (Jürgen Habermas: Between Facts and Norms. Cambridge: MIT-Press 1996) see Matthias Kettner: "The Disappearance of Discourse Ethics in Habermas' 'Faktizität und Geltung'", in: Rene von Schomberg & Kenneth Baynes (eds.), Discourse and Democracy. Essays on Habermas's Between Facts and Norms. Albany, N.Y.: SUNY Press 2002, pp. 201-218.

14 James Bohman: Public Deliberation. Pluralism, Complexity, and Democracy. Cambridge, MIT Press 1996, p. 84.

15 John Dewey: "The Public and its Problems". J.A. Bodyston (1988) ed., The Later Works 1925-1953. Carbondale, Southern Illinois Univ. Press, p. 314.

16 Ibid. p. 257.

different publics, depending on the different ways she is subjected to adverse effects from various sources. The historical contingency in significance-perceptions of practical problems is a correlate of the vicissitudes of political publics. Some publics will be large, some small; some will be limited by geography, others not. No two publics will have precisely the same membership and any given public will have members from other publics. For instance, the subset of citizens that are suffering from the ecological recklessness displayed by Shell in the Brent Spar affair is not identical with the subset of citizens that are threatened by gasoline price increases. There is overlap.

For Dewey, "the" public is always already a public of publics. It is a protean patchwork of more or less determinate multifarious publics in co-evolution, not a single homogeneous "sphere". For any public among publics the primary problem - beyond how to achieve enough self-integration - is how to achieve appropriate recognition as a determinate social actor amongst a host of heterogeneous other social actors. Both the finding and identifying itself as a public and the achieving of "such recognition of itself as will give it weight in the selection of official representatives and in the definition of their responsibilities and rights"[17] can be facilitated or impeded, depending on the production of suitable forms of publicity which in turn depends on the communicative profile of an existing configuration of mass media. Inasmuch as mass-mediated communication is necessary for shared perceptions of indirect, extensive, enduring and serious consequences of conjoint and interacting behavior to occur, the media make political publics; and they make political publics visible inasmuch as mass-mediated communication is necessary for publics to be able to take notice of each other as publics with a potential for becoming social actors.

With the help of their reliably conventionalized aesthetic strategies of imaging, narrating, and highlighting, of condensing and diffusing, centering and decentering, surprizing and repeating, of irritating and reassuring, etc., the mass media manage to populate our imagination, thought, and conversation with variegated social actors, for instance, the state administration, nongovernmental organizations, the legal system, the science system, the churches, the political parties, associations of civil society, and so on. Their "visibility" as social actors which the mass media ought politically to bestow on publics can yield sufficient intelligibility to permit extant or emerging publics to situate themselves in, and to shape intelligent responses to, the ongoing interactions of publics.

The capacity of mass media for generating such intelligibility works satisfactorily, I would maintain, except under extremely adverse societal conditions (e.g., state-centralist models of media organisation, total media illiteracy in substantial segments of a citizenry, total de-professionalization of journalists, etc.). Realistically, normative deliberative democrats will not and need not expect more of the media.

17 Ibid. p. 313, 283.

# 4. Conclusion

Let us draw a conclusion. It is plausible to formulate the general aspirational standard for the "proper" media configuration in a deliberatively democratic society in the following way: Mass media should support rather than subvert the role of Dewean publics as political deliberators.

Political deliberation traces the difference of the political by establishing and checking the recognition of reasons as res publica reasons; and it tracks within the extant body politic the bounds of mutually sharing such recognition (or its withdrawal) across variegated publics of publics. The publics are the bearers of political deliberation, not the media. Media configurations, however, can be judged according to what they do or fail to do and yet could do under given conditions for any and every discernable element of political deliberation that has a significant bearing on the overall rational qualities of such deliberation.

Instead of asking what "ideal" media can do for democracy, pragmatists of deliberative democracy see more value in diagnosing the media realities that we have or that we are likely to see evolve, in order to ask what our diagnosis implies with regard to the flourishing of political deliberation that we cherish.

# ICT and Value Sensitive Design

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**Abstract:** It is argued that information systems are intentionally or unintentionally informed by moral values of their makers. Since information technology has become a constitutive technology which shapes human life it is important to be aware of the value ladenness of IT design. Examples of values incorporated in design are discussed. The approach to software engineering and systems development, which is referred to as "value sensitive design", studies the ways in which our accepted moral values can be operationalized and incorporated in IT design. The historical background and future program of value sensitive design in IT are sketched.

**Keywords:** ICT, Ethics, Value Sensitive Design, Value Laden IT

In the age of high technology and applied science it seems appropriate to think about how to behave morally with information technology: how to prevent harm to others, to improve the quality of life and to solve some of our hardest social problems. I sketch a conception of doing responsible information technology. This approach is sometimes referred to as *Value Sensitive Design.* Value Sensitive Design is a way of engaging ICT that aims at making moral values part of technological design, research and development. It assumes that human values, norms, moral considerations can be imparted to the things we make and use and it construes information technology (and other technologies for that matter) as a formidable force which can be used to make the world a better place, especially when we take the trouble of reflecting on its ethical aspects in advance.

The idea of Value Sensitive Design has a wider application in all engineering and design disciplines, but was first proposed and discussed in connection with information and communication technology and that is still its main area of application. There were several ideas and proponents that gave rise to it. First, there

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is work by researchers such as Terry Winograd, Batya Friedman[1], John Perry, Ben Shneiderman and Helen Nissenbaum[2] in the mid nineties[3]. They showed that software could easily come to contain biases, arbitrary assumptions and peculiar worldviews of makers, which could affect users in various ways. They also stressed that systems could be designed in compliance with ethical ideals such as privacy and user autonomy. Secondly, legal scholars around the same time observed that regulation in society was taking place by means of computer code and software. Code functioned as law and laws would in the future literally be en-coded, as Joel Reidenberg and Larry Lessig[4] pointed out. Advocates of so-called Privacy Enhancing Technology at the Dutch and Canadian Data Protection Offices[5] observed that this was probably the only way in which we could deal with privacy compliance and law enforcement issues given the increasing amount of laws and regulation and the vast amount of data that are processed in our society. It is impossible to have lawyers check manually whether certain data practices are in breach or in compliance with the law. The software would in the long run have to take care of that on our behalf, and not only in the privacy area.

Rob Kling's Social Informatics[6] had been instrumental in making research in social studies in science and technology available in the ICT field and highlighted the social shaping of technology. At Rensselaer Polytechnic Langdon Winner[7] famously argued that artefacts can be used for political purposes and in important ways contain the ideals of their makers and Deborah Johnson had articulated a broad range of ethical issues in computing[8]. These developments converged in a focus on moral values and IT design.

The resulting idea is straightforward: Information technology has become a *constitutive technology* and partly *constitutes* the things to which it is applied. It shapes our discourses, practices and institutions and experiences in important ways. What health care, public administration, politics, education, science, transport and logistics are and will be within twenty years from now, which values will be expressed in it, will in important ways be determined by the ICT applications we decide to use in these domains.

A couple of examples will demonstrate how intimate the relation between IT and moral values often is.

Jenkins and McCauley (2006) describe a software application where the choice for an algorithm has drastic and far reaching moral consequences[9]. In their paper "GIS, SINKS, FILL, and disappearing wetlands: unintended consequences in algorithm development and use" they describe how Geographic Information Systems

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1 See for an overview of work and projects:
http://www.ischool.washington.edu/vsd/publications.html
2 See for an overwview: http://www.nyu.edu/projects/valuesindesign/index.html
3 See for example also http://www.designforvalues.org/projects.htm
4 For information about Larry Lessig's work: http://www.lessig.org/blog/
5 See for an explanation of PET by one of Privacy researchers who coined the term: http://www.datenschutz.de/files/what_is_pet.htm
6 http://www.slis.indiana.edu/SI/si2001.html
7 Winner, Langsdon. "Do Artefacts Have Politics?" Daedalus 109 (1980): 121-36.
8 Deborah Johnson, Computer Ethics, Prentice Hall, 1985, 1994.
9 Jenkins and McCauley, paper at SAC2006, ACM conference, Dijon.

(GIS) software has become an important computational tool in several fields. Based on the output from this software GIS users make important decisions to plan and manage landscapes (e.g., cities, parks, forests) with real consequences for the ecosystems. Jenkins and McCauley discuss a programming decision in a GIS algorithm originally used to discern flow direction in hydrological modelling: the mapping of streams and rivers. Topographic depressions ("sinks") are "filled" in the algorithm to map water flow downstream; otherwise, the GIS algorithm cannot solve the problem of accurately calculating and representing the flow direction. Unfortunately, sinks are often "isolated" wetlands which provide essential habitat for many species not commonly found elsewhere. Thus the algorithmic filling of sinks can make these wetlands "disappear" in GIS output and land-use decisions based on this output. This outcome occasioned by the choice of the algorithm may have potentially devastating real-world consequences for numerous wetlands because land-use plans made in ignorance cannot adequately conserve these unique habitats and the vital ecosystem services that wetlands provide. These consequences were not anticipated by the programmers who originally implemented the flow direction algorithm and may not be known to GIS users. Local authorities and planners however may welcome this particular effect, since it would make environmentally contested projects invisible and would give environmentalists no occasion to protest.

Dardelet and Darcy describe the development and testing of software that supports firemen in their operations by means of a real time broadband audio videolink with an emergency medicine centre[10]. The software and hardware seemed to work perfectly well in the testing situations, from a technical point of view. But one thing which was not anticipated and turned out to be of crucial importance for the success of this type of application was the clarity and consensus about professional roles and responsibilities of firemen and medical professionals. Tests clearly demonstrated that there were conflicting views of what had to be done by the firemen on the site of the fire, accident or disaster. Emergency medicine experts have different priorities from their professional ethics than firefighters. Different value systems and different conceptions of what is important and relevant, different ideas about responsibility meet and the results are often confusion and disagreement. A value analysis needs to be made in advance and protocols need to implement them. No IT application of this type can work satisfactorily if its value implementation is inadequate.

Other work by e.g. Nissenbaum and Camp clearly illustrates how values choice inform the design, coding, and architecture of systems and applications.

If our moral and political discourse on user autonomy, patient centred-ness and citizen centred-ness, our privacy, security is to be more than an empty promise, these values will have to be expressed in the design, architecture and specifications of systems. If we want our information technology - and the use that is made of it - to be just, fair and safe, we must see to it that it inherits our good intentions. Moreover it must be seen to have those properties, we must be able to demonstrate that they possess these morally desirable features, compare different applications from these

10 B. Dardelet and S. Darcy, Rescuing the Emergency – Multiple Expertise and IT in the Emergency field.Methods of Information in Medicine, 2003, 42, 4, pp. 353-359.

value perspectives and motivate political choices and justify investments from this perspective.

Value Sensitive Design provides us with the opportunity to deal with these ethical issues in a new and fresh way: by 'front-loading ethics' and by means of the pro-active integration of ethical reflection in the stage of design of architectures, requirements, specifications, standards, protocols, incentive structures, and institutional arrangements.

An ethics of information technology should open the black box of technology design and development and describe its rich and heterogeneous content, and make an inventory of the degrees of freedom in the design and engineering process, which choices have been made and can be made, preferably before the problem becomes manifest, preferably before it is too late, preferably when ethics can still make a difference.

Moral philosophers also need to rise to the occasion, not only IT professionals, software engineers and computer scientists. They not only have a tendency to forget about the way technology sets the stage for our actions in almost every sector of society and every department of our lives in transport, housing, education, telecommunication, food, energy, public administration, health care, but they have also failed to see how intimately technology and the good life are connected.

Technology should not be construed simply as a necessary condition for our survival, but Technology always aims at making life slightly more comfortable, more easy, less cold, less hungry, less painful. In principle we could do without technology in many cases without immediately perishing. The idea that somehow we could not survive without the fire, the flint stone arrowhead, clothing, cars and fossil fuel, lasagne in deep freeze and magnetrons, is of course plainly false. We could survive: our lives would be nasty, cold and uncomfortable, less convenient. Every technological device, every gadget, comes with the implicit suggestion that life would be more agreeable if we started to use it. This applies to the thumbscrew, syringe, roller skates and razor blades. Those who make the suggestion for the invention and use of these artefacts can be - and sometimes are - mistaken, wicked, or confused (or a combination of those), but in any case their suggestion should above all be evaluated as a contribution to the good life, since the good life is the *terminus ad quem* of technology. The first question which should therefore be asked with respect to technology is whether it actually delivers the goods, whether it really contributes to the good life, however conceived.

## Values and Design: at the crossroads

Ethics has seen some changes in the course of the last 100 years. It started in the beginning of the 20th century as a predominantly analytical and meta-ethical enterprise. Later ordinary language philosophers arrived on the scene and continued the work with different means. In the sixties however the philosophical climate changed. Ethics witnessed its "Applied Turn", a turn to practice and context. Especially in the USA philosophers started to realize that philosophy could contribute to social and political debates about the Vietnam War and civil rights,

later on abortion and euthanasia, by clarifying notions and structuring arguments. Ever since the sixties applied ethics has been growing. Every conceivable profession and cluster of societal issues has a special or applied ethics named after itself, from library ethics to sports ethics. I think we now are slowly moving into a third phase where not only application of moral theories and applied analysis is considered a legitimate and important activity, but design questions start to make their appearance.

The work of the Harvard philosopher John Rawls' is one of the first that gave rise to talk about design in ethics. Thinking about social justice could in the context of his theory be described as formulating and justifying the principles of justice in accordance with which we should design the basic institutions in society.

Contemporary ethicists (such as Thomas Pogge, Bob Goodin, Dennis Thompson) do not only want to offer an applied analysis, they also want to think about some of the real world conditions, institutions and incentive structures that need to be realized if applied analyses are to stand a chance in their implementation. This "design turn" in applied ethics is still focussed on institutional design, but the second stage will most certainly also bring into view the design of technology, technological artefacts and socio-technical systems.

An interesting positive parallel development can be observed in ICT, and probably also in other engineering disciplines: a shift from technology *simpliciter*, to technology in context. In the first phase of its development in the sixties and seventies the social and organizational context did not matter much in the production of ICT applications. Hardly anyone bothered to ask about human users, use and usability and the fit with the organisational and social context. Computers were a new and fascinating technology: solutions looking for problems. In the second stage of the development in the eighties and nineties -after many failed projects, worthless applications and bad investments- one gradually started to realize that there were human users, with real needs and real desires and real organizations with peculiar properties. It started to occur to many at that time that it would be wise and profitable to try and accommodate user requirements, conditions on the work floor in the early stages of the development of applications. The social and behavioural sciences came to the aid of ICT in this period. But this is still a minimal way of taking the needs, interests and of users, organizations and society into account, namely as mere constraints on the successful implementation of systems.

If I am not mistaken we are now entering a third phase in the development of ICT, namely one where the needs of human users, the values of citizens, patients, and some of our social questions are considered in their own right and are starting to drive research and development of ICT.[11]

We are at the intersection of both developments: the increasing interest in applied ethics for the *design* perspective and the increasing interest in technology for *value* aspects of design. If I am not mistaken this historical situation provides a

11 One of the interesting examples of that approach to date is the Californian Institute CITRIS (Centre for IT Research in the Interest of Society) endowed with 320 million US dollar. The CITRIS research agenda is determined by social problems and their solution. See http://www.citris.berkeley.edu/

favourable condition for the further development of Value Sensitive Design research and to do good by building what is good.

# PART 3 - GOVERNANCE OF IS:

# FROM ECONOMIC REGULATION

# TO A NEW SOCIAL CONTRACT

# Introduction to part III

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The governance of the information society is one of the major issues of today in the field of ICT and is especially important in the economic and social fields. How to govern the technology, how to govern content—or whether either should be governed—are questions to which there seem to be as many answers as there are participants in the discussion. The stakeholders in the governance issue are multifold. At the topmost level we need to have international bodies directing the development of governance, such as the initiative by the United Nations (WSIS). But both at the international and national levels the various approaches taken by governments to the development of the information societies they are creating must also be taken directly into account. As Berleur has repeatedly pointed out (2003; Berleur and Poullet, 2006), a good and fair governance of the Internet is crucial for the formation of the information society. It cannot be left to the hands of one nation only (i.e. the United States) but should—in the interests of an ethical and socially responsible approach—take account of the international combination of interests involved. Even with the best of intentions, it is not possible for one nation to take all parties into account.

Of course citizens need to have some say, via various means, on the creation of the information societies in which they are stakeholders. The new social contracts need to be, at least in part, socially constructed through the participation of the citizens of these information societies. However, to be able to do this citizens' need to be informed.

Academia also has an interest in creating governance in the information society. This happens by the academic researches through explaining the nature of how the information society develops, but also in cooperation with the commercial functioners and various levels of government activity in RTD projects such as the EU FP projects. Again, a socially responsible and ethically sound approach should be more than just window dressing in these projects.

Finally, we cannot and should not forget the economic and commercial push towards evermore advancing ICTs. The choices made in the commercial organisations as well as the market pressures they experience form our information

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society; the information society in which we, as participants, whether willing or pushed into it by the tidal wave of development must live in. Short term requirements of shareholder value gain cannot be the only requirement for the information society's development, instead a consistent policy relating to governments, people and international organisations should be found.

A new social contract for the new society, the information society, must be created. It cannot be a stagnant social contract, but one that takes the stakeholders as well as the rapidly changing environment in which they function into account. In the following chapters, the main stakeholders and their interests are looked into. At least these stakeholders should be a vivid part of the negotiations for the new contract—we cannot let any of them fall through gaps in the process.

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# Social Consequence of Information and Communication, Technologies and the European Union : Policy Links

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**Abstract:** The issue of social consequences of Information and Communication Technologies has always been at the top of not only the political but also research and innovation agenda of the European Union. The move towards a European Information Society has placed severe demands on the adaptability of those concerned to economic and social changes while analysing and mitigating any adverse consequences and to avoid the emergence of a two-tier society and face moral and ethical challenges. Several initiatives have been launched by EU institutions and the Commission in particular to prepare the road towards a European Information Society. This paper first discusses EU initiatives from a research and innovation policy point of view and in particular RTD and deployment programmes such as IST, eTEN, eContent. It then analyses the need for designing and implementing a policy initiative at European Union level for promoting the positive impact of Information Society funded RTD and deployment results on other EU policies as diverse as environment, transport, public health, and establishing a permanent framework for linking information society to other EU policies and the so-called Brussels microcosm of EU policy makers. Finally it presents the "Information Society policy Link" initiative and in particular its first year results and policy implications on other social responsibility aspects for employers, employees and the State.

**Keywords:** ICT, Information Society, social impact, EU policies, Policy Links, Information Society Policy Links

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# 1. Instead of introduction: Extract from a EC publication on the road towards an Information Society

The last decades are witnessing the forging of a link of unprecedented magnitude and significance between the technological innovation process and economic and social organization. Countless innovations are combining to bring about a major upheaval in the organization of activities and relationships within society. A new "information society" is emerging in which the services provided by information and communications technologies (ICTs) underpin human activities. It constitutes an upheaval but can also offer new job prospects.

With easier access to information, it is becoming increasingly easy to identify, evaluate and compete with economic activities in all sectors. The pressure of the marketplace is spreading and growing, obliging businesses to exploit every opportunity available to increase productivity and efficiency. Structural adaptability is becoming a major prerequisite for economic success. The growing interconnection of the economy is leading to major productivity improvements in the production of goods but also in relation to services, and the borderline between goods and services is becoming increasingly blurred.

The economic impact of technological progress on growth and employment depends on the innovation process, which has become interactive. The linear model of innovation, with the innovative act being isolated, has in today's world been replaced by complex mechanisms: innovation requires constant and organized interdependence between the upstream phases linked to technology, and the downstream phases linked to the market.

The means available to create, process, access and transfer information are remodeling relationships in our societies. One of the most important aspects of current developments is the breathtaking expansion in the means available to us to communicate and process information (sound, text, images) in digital form.

Companies' operations have become unthinkable without the use of ICTs. These technologies are enabling them to seek total integration of their own functions in space and time and in terms of their environment. The introduction of ICTs, globalization and international competition are forcing companies to rethink the way in which they organize their production. Where the general public is concerned, the penetration of ICT-dependent products and services into everyday activities is also striking. This generates new forms of economic and social organization the structure of which is no longer subject to geographical constraints but depends on telecommunications networks or teleports: teleworking is emerging as a major social phenomenon. Authorities concerned with the management of public funds and wishing to provide their constituents with better quality services also call upon ICTs. Relationships between the general public and the authorities are changing, and more fundamentally the present boundaries between the role of the State and the market are altering.

Despite the undeniable progress that has been made, the penetration of ICTs is not an unmitigated success story.

# 2. Real Introduction: From ITA (Information Technology Assessment) to i2010 and more

## Jacques, me and friends: some personal memories

I first met Jacques Berleur in 1992 when I was in charge of the Luxembourg managed VALUE II programme (as part of the 2nd EU Framework RTD Programme) and in particular its Interfaces between Scientific Community, Research and Society. I was investigating about the state of play and actors in Europe regarding Social Consequences and ICT and Technology in general. Colleagues recommended touching base with an Informatics' professor in FUNDP University in Namur, Belgium. I then met a person that really influenced the rest of my life! Not only did I discover through Jacques the Information Technology Assessment (ITA) concept and collect precious information in social impact of computing, but it was the beginning of a lasting relationship with the IFIP world (TC9, WG9.2, SIG9.2.2), papers, international events etc. and a nice friendship with Jacques that still lasts!

Therefore it was for me an immense pleasure and also a privilege to accept to contribute to this book, and deliver some of the experience gained during these years with IFIP and the European Commission. I left the Commission in March 2006 to continue my activities in the not-for-profit sector by creating InnoPolis.org, and Europe of Cultures Forum: Adriatic & Ionian Chapter and mentoring CogniTerra.org

## Towards an Information Society?

J. Berleur in "Perspectives and Policies on ICT in Society" (Berleur and Avgerou, 2005) distinguishes two different periods: 1st period: 1994-1999 and 2nd period: From 1999 and beyond. He expresses some critisms regarding the orientation decided by the European Council and Parliament.

Regarding European policies and their impact at large: "...the effort the EU has to make on its communication should practise in two dimensions: a) A more explicit and transparent communication on the forces and weaknesses of Europe and European policies and b) A less institutional, formal, promotional communication than demonstrated by previous models of the last 35 years!...".

Regarding the Nature of the eEurope Initiative: ".....despite regretting some significant elements, this policy is above all a discourse that has to exist in order to pose a welcome European vision and challenge, and also.....the relevance of this policy will be shown at the local level, while on the other side it will have also to work for harmonious global development....."

In the next paragraphs we will try to analyse the real import and social consequences of EU policies related to Information Society.

# 3. From RTD results to policy making : the case of ICT

## Policies and Activities

Information and Communication Technologies (ICTs) are of crucial importance for Europeans. They are 'breakthrough technology', similar to the steam engine and electricity, that will have a major impact on how we live and work over the next century. They are therefore fundamental to achieving the EU's 'Lisbon goal' of greater economic growth, sustainable development and social cohesion. Consequently, the European Union devotes considerable effort to Information Society related actions (VL HCC7).

A range of policies / activities also aim to ensure that Europe exploits the possibilities offered by the Information Society and to soften any expected social consequences. In the next paragraphs we will try to discuss the social impact of ICT related research on EU policies. It is therefore necessary to oversee the policy areas. Currently there exist 31 different EU policies (see table 1).

| | | |
|---|---|---|
| Agriculture | Employment and Social Affairs | Humanitarian aid |
| Audiovisual and Media | Energy | Human rights |
| Budget | Enlargement | Information Society |
| Competition | Enterprise | Institutional affairs |
| Consumers | Environment | Internal Market |
| Culture | External Relations | Justice, freedom and security |
| Customs | External Trade | Public Health |
| Development | Food Safety | Regional Policy |
| Economic and Monetary Affairs | Foreign and Security Policy | Research and Innovation |
| Education, Training, Youth | Fraud | Taxation |
| | | Transport |

*Table 1*

Among these policy areas Information Society (and lately Audiovisual and Media policy) constitute an important priority for EU action. Under this umbrella we find the following areas (for detailed information on these priorities see IS Portal): )[1]: Telecom Policies cover a large spectrum of issues and activities and produces policy proposals : From Spam to .eu and reduction of roaming tariffs to stimulating the ICT sector: eEurope2005; i2010 and RTD and Deployment programmes.

## Stimulating the Sector - eEurope 2005

Policy priorities to stimulate the sector include promoting the development of the underlying infrastructure: Broadband and Security; stimulating the supply of advanced services, notably via the public sector: eGovernment, eHealth and eLearning, as well as Digital Rights Management; promoting the uptake of eBusiness, building on policies such as the .eu domain - a key element in translating the European Single Market into the worlds of eBusiness.

### Stimulating the Sector - i2010

The focus of main action 2005+ includes the completion of a Single European Information Space which promotes an open and competitive internal market for information society and media; strengthening Innovation and Investment in ICT research to promote growth and more and better jobs; achieving an Inclusive European Information Society that promotes growth and jobs in a manner that is consistent with sustainable development and that prioritises better public services and quality of life.

### RTD and Deployment

Research and Technological Development on ICT has been made possible via the Information Society Technologies Programme. The IST research programme [1] has been the largest thematic priority in the EU's Fifth (1998-2002) and Sixth (2002-2006) Framework Research Programmes. Together they represent an investment of over €7bn in IST research, and are complemented by programmes such as eContent (€100m) and eTEN (€315m), which focus on digital content and eServices deployment respectively.

### Deployment of ICT: eContentPlus AND eTEN; Internet Content & Services

These activities promote the deployment of ICT related results and they are split in programmes such as: eContent (€100m) and its successor eContent+, eTEN (€315m) and also Content & Services addressing the Public Sector Information Directive; Europe and Digitisation: the Lund Principles and Action Plan.
eContent and eTen in their new form will be an integral part of the already approved Competitiveness and Innovation Programme (CIP)to be coordinated by DG Enterprise and Industry.

## 4. Exploiting the Benefits of the Information Society

Anyone visiting the Commission policy priorities regarding ICT will discover action lines covering practically all aspects from eServices to the citizen (eGovernment, eHealth, eInclusion, eSafety/transport, Safer Internet Programme) and other application areas such as eLearning, eBusiness, ICT for Environment, Security – cybercrime and Broadband communications. All of these EU ICT related policy initiatives and actions have prepared the road towards a European Information Society and increased the social responsibility for employers, employees and the State and in this way have important social consequences.

The issue of the social consequences of ICT has always been at the top of the research and innovation political and social agenda of the European Union. In the road towards a European Information Society severe demands have been placed on the adaptability of those concerned to economic and social changes. At the same time efforts have been deployed for analysing and mitigating any adverse

consequences and to avoid the emergence of a two-tier society bringing moral and ethical challenges.

**Communication – dissemination issues**

The projects funded by these programmes offer benefits to all areas of Europe's economy and society. To fully realize these benefits, the technologies on the one hand, need to be linked closely to European policy-making in the relevant areas, and on the other ensure that the results are used as quickly as economically justifiable for the benefit of EU citizens and the EU economy. Effective communication is essential, both in transferring knowledge and influencing action[1].

On the other hand there is a need to ensure that the flow of R&D funding is sustained by creating public appreciation of the benefits obtained. Such an action also demands effective communication to help recipients become aware about new technological breakthroughs facilitating our life but also about potential dangers and ways to prevent from any possible negative effects.

Passing the right message to the right people: For each of these objectives there is a need for a professional approach for a communication strategy. Such a strategy should analyse the target audiences and communication channels and it will define appropriate sub-objectives, communication messages, and techniques. In our view current efforts do not address these issues adequately.

The diverse nature of the R&D projects supported within the Framework Programmes means that different projects require different approaches. While some projects will produce results that are quickly obvious to end users in products or services, others will mainly affect industrial or commercial processes or components. Communication strategies need to take account of these differences and different target groups and stakeholders: networks, clusters and EU industrial groupings as well as the public.

Similarly, fostering public appreciation is not a task for which a single "one size fits all" approach should be expected. Different types of result are appropriate for different groups, and the diffusion of attitudes within a population operates differently both for different ideas and for different cultures. The existing state of public opinion is also a factor to be taken into account when devising strategies, and this will introduce inter-country differences.

We feel that applications of EU R&D results, creating networks and leading to products and services that are in wide public use, represent an area in which strategies for uptake and strategies for public appreciation can overlap. This needs to be investigated to determine the full scale of the opportunity.

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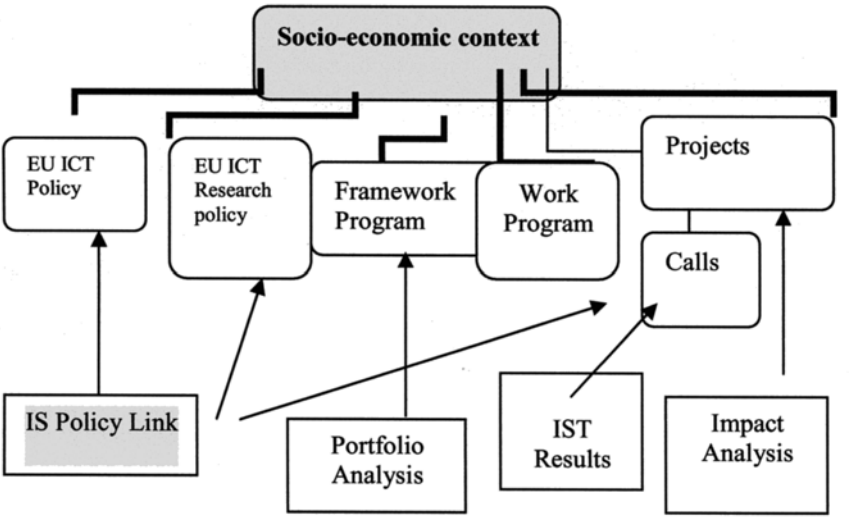
1 For the results of an analysis of particular characteristics related to communication and dissemination of RTD ICT see: Laopodis, V (2006) "Communicating Information Society Related RTD and Deployment Results in Support of EU Public Policies" in *Social Informatics: An Information Society for all? In Remembrance of Rob Kling,* Jacques Berleur, Markku I. Nurminen, and John Impagliazzo (2006) (eds). Proceedings of the Seventh International Conference on Human Choice and Computers (HCC7), IFIP TC9, Maribor, Slovenia, September 21-21, 2006. Springer Boston, Vol. 223/2006.

There is scope for both direct promotion and influencing and for indirect action, allowing the message to become apparent through the actions of third parties. The underlying perception is that citizens who are alerted to the developments which the EU R&D programmes are aiming at — and are delivering as time goes on — will be affected in three key ways:

- by coming to appreciate the case for EU R&D
- by exerting market pull which speeds up the adoption of future developments
- by generating a constituency for the adoption of Framework Programme results by Commission policy departments.

# 5. Information Society Policy Link (ISPL)




## Description of the initiative

The Information Society promises potentially significant benefits throughout Europe's economy and society. These benefits will not be realized completely, however, if the technologies are not linked closely to European policymaking in the relevant areas. In the following diagram The IS Policy Link initiative is situated in the course of the RTD ICT programme trajectory.

Among the numerous EU awareness raising and promotion actions regarding ICT research and its impact the Information Society Policy Link initiative [3] of Information Society & Media DG to identify and reinforce links between its projects

and relevant EU policies launched in 2004, is linking Information Society projects with relevant European policies as diverse as environmental protection, security and public health [1].

Hence "Information Society Policy Link" where these cutting-edge projects are connected to the relevant policies, helping Europe both better implement today's policies and ensure that policy development takes the possibilities offered by ICTs into account.

This is a targeted initiative to EU Policy Makers started mid 2004 with the aim to improve co-operation between DG Information Society and Media and all other policy DGs, EU institutions as well as Public Administrations in Member States.

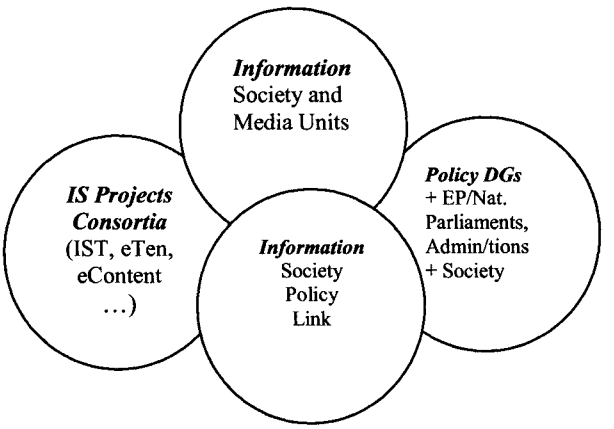



*Fig.2 : The Information Society Policy Link multipartite collaboration*

The approach selected is to proceed by linking project results from INFSO-funded actions (e.g. IST, eTen, eContent) to EU policy makers, thereby bringing together the major stakeholders. Its mission can be summarized as being a "Catalyst" and "broker service" function between INFSO and "partner" DGs/Services, other Institutions.

To attain its objectives the team had to first understand policy content by discussing with INFSO management, analysing information of ~ 3.000 projects from IST, eContent, eTEN and other actions, and identifying first promising cases per policy area and DG/EU service (in close cooperation with INFSO units). Then meetings with policy makers led to cooperation with a first group of pilot DGs in order to select Policy Cases for pilot DGs and investigate policy cases for others. In addition many networking actions have taken place (IST event, The Hague - November 2004) which brought together stakeholders from six policy Digs, INFSO units and 25 project consortia.

The Figure 2 illustrates the multipartite collaboration where all main actors such as EU policy makers; INFSO Units; INFSO funded projects consortia (under programmes such as: Information Society Technology – IST, European Trans European Networks – eTEN, Digital Content (eContent and eContentplus) are

involved with major beneficiaries EC policy DGs/services (main target), other EU institutions (in particular EP), Agencies National Parliaments and Member States administrations.

## Impact of ICT research projects on other EU policy areas

The pilot phase of this initiative which ended in June 2005 identified ~ 200 Policy Cases (promising projects) grouped in six categories covering 20 European Union Policy Areas.

- European Society: Culture & Multilingualism; Education; Employment & Social Affairs; Health; E-Inclusion
- Governance: E-Government & E-Democracy; Regional Policy; Security & Justice; Sustainable Development; Environment; Energy & Transport; Agriculture & Fisheries
- Competitiveness: Enterprise Policy; Industrial Policy; Single Market
- Research & Innovation: Information Society; Research & Technology; Standardization
- International Relations: International Community; (External Trade, External Relations, Development, Humanitarian Aid)

To demonstrate the impact of DG Information Society and Media funded ICT research and development projects on specific EU public policies we discuss below the case of EU environmental policy where ICTs could be used for policy purposes.

## First Findings of pilot phase

About 200 Policy Cases (promising projects) were identified and grouped in six categories covering 20 Policy Areas. Promotional material (published July 2005, onwards) includes a general leaflet (6-pages A4) on the Information Society Policy Link initiative and for each of the ~20 EU Policy Areas was one leaflet (6-page A4) on INFSO's contributions on, and links with the specific policy area, plus with 7-10 Fact Sheets corresponding to the selected Policy Cases.

The following table presents the outcome of the first phase of the project and in particular selected Success Stories/Policy cases impacting (a) EU Public Health policy and (b) EU Environment policy. For each policy case the following elements were indicated:

- Project Identification (name, EC code, webpage);
- Policy Area (policy domain e.g. air quality for environmental policy);
- Related policy measure (EU major programmes, references to EU Communications, Directives, Ministerial conferences proceedings etc.);
- Beneficiaries (in both EU and national/regional level);
- Expected impact (concrete impact on policy making or policy monitoring process).

## Typical Case Stories/Success Stories

The following cases have been identified regarding the EU Public Health policy

- EURODONOR: Sharing information on organ donation
- EUTIST-M: Closing the innovation gap in health
- HEARTS and MYHEART: Early warning of heart disease
- INFOGENMED and INFOBIOMED: Exploiting genomics for medicine
- MEDASHIP and OPTESS: Sailing towards tele-medicine
- NETC@RDS and NETC@RDS for eEHIC: Trans-European access to health services
- PICNIC: Defining the agenda for regional healthcare
- STEMNET: Connecting up stem cell donation
- The following cases have been identified regarding the EU Environment policy.
- APNEE-TU: Early warning of environmental hazards
- DISMAR: Open standards for marine risk management
- EGERIS: Joined up emergency response
- HARMONOISE: One voice on noise assessment
- HEAVEN: Controlling pollution through real time traffic management
- MINEO: Mitigating mining impacts
- ORCHESTRA: Risk management for Europe
- OSIRIS: Timely responses to flood risks
- SUMARE: Sustainable marine environments
- eSEVESO: Cost-effective compliance

## Information Society Policy Link: The next steps

In order to better demonstrate the impact of IS projects and initiatives on other EU policy areas the instrument of Policy Interfaces and Policy Workshops have been launched in 2005. Policy Interfaces are structured meetings between Information Society and Media Directorate-General and other EU services with the aim to inform Policy DGs about INFSO plans for RTD activities in ICT, listen to their specific requirements for ICT research and ensure that results from INFSO-funded research projects and other activities can support the implementation of EU policies to the fullest possible extent.

Under this framework IS Policy Workshops i.e. a *working event/conference on a particular theme* are organized in cooperation with INFSO units, one or more thematic sub -groups or DGs.

First themes proposed are:

- Employability of ICT Professionals, Project: Indic@tor (FP5, IST-2000-32468)
- "What research findings say and how policy makers can exploit it", Brussels 26 April 2005
- Beyond the internet: MPs and communication, Project: EPRI, Slot in event for MEPs (23-24 May 2005)

- E-resources for SMEs: Project: PROMIS (BSOLE (eTen)-GUIDE (eContent)-EASYTRADE (IST) Brussels (UEAPME) - 14 June 2005
- eInclusion / eUser workshops, October 2005; February 2006
- Competitiveness for SMEs: Project: Ecolead, DBE et al, May 12 2006:

The next phases of the Information Society Policy Link initiative will focus on three areas:

- Refinement of existing cases e.g. review existing data collections — revisit findings (FP5); processing new information (mainly 1ST FP6; eTen; eContent); new wave of Policy Cases for each of 20 thematic areas
- Expansion of coverage by establishing contacts with remaining DGs and run Policy Interface meetings with DGs; launch special actions for EP, and pilot National Parliaments, MS Administrations
- Promotion and in particular disseminate first findings to EU policy makers; Targeted promotions campaign; Launch new publications on new Policy areas and cases; Organize a number of IS Policy Workshops; Pilot actions for MEP, National Parliaments and Administrations

Furthermore synergies will be sought between DG INFSO coordinated related information services and projects such as IST results and Information Society Policy Link and targeted promotional efforts to increase societal awareness on the impact of ICTs in economy and society.

# Conclusion

The European Commission is supporting ICT research for the last 20 years with considerable resources devoted not only to IT technologies and communications but also to important applications notably in the areas of Public Health and Environment. Project results from the most recent Framework Programmes (FP4 and beyond) have demonstrated that even if selected on their policy relevance but mainly for its scientific merit, numerous ICT EU funded projects have considerable impact on other EU policies such as public health, environment, security, regional policy etc.
The first results of the DG Information Society and Media Information Society Policy Link initiative show that practically all policy areas could benefit from such project results in particular in integrating new concepts to coming policy initiatives, monitoring the implementation of existing regulation e.g. pollution levels, biometric controls etc. Communication and awareness raising actions should be reinforced in order to inform policy makers at all levels and influence the decision making process.

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ISPL

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**Abstract:** This paper acknowledges that ethical questions raised by ICT are so fundamental that they include the question of the anthropological changes caused by communications tools. It then looks at the motivation of large companies to discharge their social responsibilities. The paper also argues that Chief Executive Officers (CEOs) are no longer the main decision makers for fundamental strategic corporate choices and that decisions are driven by financial markets. The section on financial markets analyses the reasons for the short-term bias in financial analysts' positions. Finally, a brief look at a specific EU policy (RFID) shows that economic development is at the forefront of the EU agenda and that ethical considerations are seen as mere constraints.

**Keywords:** Capitalism, Financial markets, Innovation, Corporate social responsibility, European Union policy

*"International finance has become so interdependent and so interwoven with trade and industry that . . . political and military power can in reality do nothing"* - Norman Angell - The Great Illusion published in 1913!

1 The views expressed in this paper are those of the author and do not necessarily reflect the positions of Cullen International.
2 Cullen international is a company specialised in the monitoring of the regulation of telecommunications, electronic commerce and media.

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# Introduction

In the presentation of the conference, the organisers state that the democratic power is still seeking to regulate the economic system, but it also has to control technological developments in setting up limits defined by societies, and in choosing technical means fitting their ethical ends. While the development of science and technology is largely a self-centred phenomenon, its link with the economy cannot be understated. The Information and Communications Technology (ICT) sector in Europe represents €659bn[3] or about 6% of the European GDP. Therefore, attempts to alter decision making processes in this field should, at the same time, seek to change the functioning of the economy and perhaps even the concept of economic growth.

The conference organisers suggest a better governance of techno-science based on the legitimate meaning of ICT, by favouring institutional education and by avoiding technology policies exclusively based upon risk evaluation or economic interest. This implies quite radical changes in the functioning of democracy.

This paper acknowledges that ethical questions raised by ICT are so fundamental that they include the question of the anthropological changes caused by communications tools. It then looks at the motivation of large companies to discharge their social responsibilities. The article also shows that CEOs are no longer the main decision markets for fundamental strategic corporate choices and that decisions are driven by financial markets. The section on financial markets analyses the reasons for the short-term bias in financial analysts' positions. Finally, a brief look at a specific EU policy (RFID) shows that economic development is at the forefront of the EU agenda and that ethical considerations are seen as mere constraints.

# 1. ICT and ethics

The development of ICT raises many questions. Some are already regulated (privacy), some are openly debated while others are hardly raised. Here are some recent examples.

1. Human rights and the Internet. The behaviour of large Internet companies in China raises a number of ethical issues: Access to the website www.BBCChinese.com has long been blocked by China while the more politically correct (in the eyes of Chinese officials) www.BBCChina.com is accessible. Is the BBC bowing to Beijing censors? The BBC strongly denies having adapted its website to avoid causing political offence. However, according to the Financial Times, all the Chinese-language China-related news available on the site appears studiously uncontroversial. Furthermore, the site does not have links to the main BBC service! [4].

Google has decided to censor its new China-based website. In practice, it means that typing the name of a prominent opponent to Beijing such as Liu Xiaobo will generate over half a million links on Google.com and only 19,000 on Google.cn – most of them less prominent namesakes[5]. The company defends itself with an

3 European IT Observatory - http://www.eito.com
4 Financial Times – February 4, 2006
5 Financial Times – February 15, 2006

utilitarian argument: Chinese users are better off with a censored Google than with no Google at all. At least, Google has a policy of letting users know when results have been censored – a policy not followed by local competitors such as giant Baidu. Chinese users appear to be split on Google policy. Some support it while others quote a Chinese proverb: "Do not do unto others what you would not have them do unto you". Utilitarianism versus Kantian ethics. To Google's credit, the company is not offering its blogging or communications services in China, out of concern for the privacy of potential users.

Yahoo has accepted to provide traffic data information to the Chinese authorities. This has led to the prosecution and jailing of journalists[6].

These anecdotes raise one more fundamental question: how great a violation of human rights would it take for the Internet companies to decide that they could no longer remain in China?

2. Internet governance. The management of the Internet, in particular a number of top level domain names by ICANN on behalf of the US Department of Commerce has caused discomfort around the world, at least among governments. During the negotiations that led to the UN World Summit on Information Society (WSIS) in Tunisia in November 2005, Europe's support for a proposal to give a greater role to governments has met with fury from the Internet community and telecom industry and with undiluted enthusiasm from the autocratic states! Viviane Reding, European Information Society and Media commissioner, justified the European position by saying that if a multilateral approach cannot be agreed, countries such as China, Russia, Brazil and some Arab states could start operating their own versions of the internet and the ubiquity that has made it such a success will disappear.

3. Closed Circuit Television. A recent estimate puts the number of CCTV cameras in the UK at 4m – one for every 14 people. If you live in London, you are likely to be on camera 300 times a day. The policy is about to start using a new system that will automatically link an estimated 3,000 CCTV cameras across the country with car registration records and other data. Here again, reality has surpassed science fiction.

## 2. ICT and Anthropological changes

American novelist William Gibson is usually credited for coining the expression cyberspace. The concept of anybody being potentially connected with anybody anytime anywhere brings radical changes in the our perception of space (death of distance) and time. The head of the famous MIT's Media Labs, William Mitchell[7] argues that with the advent of mobile devices and wireless Internet access, digital bits no longer exist in a separate sphere called cyberspace but have gone on location in the real world. *The trial separation of bits and atoms is now over*, Mitchell argues. The result is the rise of a human cyborg: *a biological core surrounded by extended, constructed systems of boundaries and networks. In this new world, the social ties that exist are no longer provided by a continuous home turf; increasingly, my sense*

6 The Economist – september 24, 2005
7 ME++ by William J. Mitchell – MIT press 2005

*of continuity and belonging derives from being electronically networked to the widely scattered people and places I care about.*

In Barcelona, a night club, the Baja Beach Club, uses electronic implants to identify its VIP clients. The rice grain-sized VeriChip RFID device implanted in their hand or arm is also used to pay for drinks with a wave of the hand. The Mexico police department has had over 170 members of its force implanted with the Verichip. This allows them to access databases and, in rare instances, track an officer in case of a kidnapping

Increasingly, everyday talk illustrates Mr Mitchell's theories: *I can't talk to you anymore, I don't have any batteries left.* Clearly, the network of our contacts is mediated by electronic address books – in SIM cards, mail browsers and buddy lists. We need urgently to decipher what this proliferation of new technologies will have on our relationships and on our brains. Why remember things when you have Google? How will it affect our sexual psyche?

Research[8] carried out by Glenn Wilson, Institute of Psychiatry at the University of London, compared two groups: one working in a quiet environment and another subject to a barrage of calls and email. The effective IQs of the members of the second group were reduced by 10 points. For comparison, for regular cannabis users the drop is around four points! *The impairment only lasts for as long as the distraction. But you have to ask whether our current obsession with constant communication is causing long-term damage to concentration and mental ability,* says Dr Glenn Wilson.

## 3. Corporate Social Responsibility (CSR)

1. CSR is good for profits. Among the responses to calls for a more ethical approach to business, corporations have developed the concept of corporate social responsibility (CSR). Hank McKinnell, chairman and CEO, Pfizer, and Chairman of the Business Roundtable explains that CEOs are increasingly committed to socially responsible corporate behaviour because it is essential to profitability: "If we're seen by the community as providing goods and services that enable people to live a happy, long life, society will want us to succeed. If they see what we're doing in education and sports programs, that's important. Otherwise, society will hope that we fail. If we continue to be disrespected by the public, it makes us a target. People will say "regulate them". Excessive regulation is certainly one of the costs[9]."

2. CSR and regulation. While Mr McKinnell's case appears to be compelling there are instances where companies take action only when they are on the verge of being regulated. In the US, Coca-Cola, PepsiCo and Cadbury Schweppes have decided to remove sugary beverages from school vending machines[10]. However, the decision was only taken under threat of regulation and law suits. In 2005 Arnold Schwarzenegger had banned soft-drink vending machines from California's state schools. Furthermore, a number of Republicans have dropped their opposition to regulation in the light of growing evidence that obesity is harming productivity and contributing to rising health costs. 17% of US children are clinically obese (up from

8 Guide to avoiding info-mania – published by Hewlett-Packard – April 2005
9 New-York Times – April 29, 2006
10 Financial Times May 5, 2006

14% in 1999)! Cases like this have created some doubts in the public about the true commitment of at least some businesses to their social responsibilities.

3. A useful typology. Like Mr McKinnell, David Varney, Chairman, mmO2 plc (European mobile phone group) and Chairman, Business in the Community, strongly believes that CSR makes good business sense: "Why are we doing these things (CSR)? Is it because we're interested in profits? Yes, absolutely. It's our job to make profits. We'd be out of a job if we didn't. We behave responsibly to protect our corporate reputation. If we had a lousy reputation, we wouldn't get customers. But society should share in the profits of our success. CSR is win-win. It's good for us. It's good for the community. It makes employees feel motivated about what they're doing. It makes customers feel good about what they're buying. It makes good business sense."

Mr Varney provides a useful typology of criticisms against CSR[11]

a) Free-market view. The conservative, free-market view sees corporate philanthropy essentially as stealing from shareholders. As the Nobel Prize-winning economist Milton Friedman once famously said, the responsibility of corporate executives is to stay within the law and to make as much money for their investors as possible. Anything else is harmful to the owners of the business. Mr Varney dismisses the free-market approach as a short-sighted critique. Shareholders are interested in sustainable profitability. In today's marketplace, companies need to be resilient. They need to be socially responsible to survive. Whatever CSR takes out, it puts back in - in long-term value. A company cannot survive and thrive if it does not look beyond the bottom line. Companies need strong brands and sterling reputations. They need a satisfied workforce. Any shareholder who's interested in sustainable profitability is interested in all the benefits that CSR can bring.

b) The leftist view. The second criticism comes from the left end of the political spectrum. These critics say CSR is a good thing, but it's not working as well as it should. We therefore need to strengthen it with regulation. State intervention will fix it. Mr Varney unsurprisingly takes the view that a successful approach to social responsibility cannot be achieved with a regulatory cookie cutter. It has to be indigenous to the culture of the company. Each industry - and each environment - calls for a different approach. The case for regulatory mechanisms to achieve social responsibility is wrongheaded and pernicious. A one-size-fits-all regulatory system will do far more harm than good.

c) CSR is hypocritical. The final criticism is that CSR is hypocritical, a smokescreen to hide the truth - mere window dressing on a system that is ruthlessly self-serving. The classical example is the company that claims to be socially responsible - while making people redundant. Mr Varney's answer is that the capitalist marketplace allows for the ebb and flow of competing interests. In a system such as ours, companies sometimes have to adjust their workforce to survive. That's an inevitable outcome of a dynamic marketplace. That's its strength. When companies downsize to survive, the system produces other opportunities.

4. The compelling imperative to generate short-term profit. Recent developments at Citigroup, the largest bank and the fourth largest company by market capitalisation in the world, illustrate the difficulty to instil an ethical

11 Speech to HBOS Corporate Responsibility Forum – February 11, 2004

culture[12]. When Chuck Prince took over as the new CEO at Citigroup in 2003, the bank's reputation had been tarnished by its involvement in various financial scandals including Enron, WorldCom and Parmalat. The costs of settling the resulting law suits ran into several billions. Prince sought to address the problem by asking 300,000 employees in 100 countries to adhere to a new code of conduct[13]. The code was based on three pillars: a company with the highest standards of ethical conduct; an organisation people can trust; a company dedicated to community service.

Huge efforts were made to embed the code through training programmes and ethics courses.

In July 2004, Citigroup's London operations became involved in what became known as the *Dr Evil trade*. In short, on a quiet day of August 2006, bond traders placed in 18 seconds a volume of sell orders equivalent to a normal day of trading on the Italian electronic bond market. It bought back the bonds the same morning, earning a profit of €18.2m. The trick had a number of negative effects on other banks, on the Italian electronic bond market (MTS) and worse for Citigroup, on European governments who started to worry about a rise in the cost of servicing their debt. This is difficult to reconcile with the bank's code that states: "*we treat our customers, suppliers and competitors fairly*". Irrespective of any ethical considerations, angry European governments withdrew business from Citigroup. Several financial authorities opened enquiries and imposed fines (e.g. £14m by UK FSA) on Citigroup. The top management recognised the bank had breached its own ethical standards. The traders involved were briefly suspended but nobody was fired! This raises the question of which values Citigroup really stands by.

The recent events at Citigroup show that tensions between the seemingly overwhelming need to generate short term financial results and compliance with company ethical policies are so intense that it can lead a company to actually behave in a manner that is detrimental to its own long term prosperity.

The following section looks at this short-termism of the functioning of today's financial markets.

What's wrong with today's market economy? Our time is characterised by the fall of all the ideologies that shaped politics and society in the previous century. In the Western world, communism and religion are being replaced by idols such as economy and science that are filling in the vacuum. This paradigm shift has many consequences including the self centred progress of science and technology – no longer a means to an end but a goal in itself – and the development of empty consumerism. This section will seek to shed some light on another aspect of today's economy: the short term effects of financial capitalism.

a) Fund managers short-term view. Ten to twelve million individuals control half the market capitalisation worldwide[14]. According to Cap Gemini - Merrill Lynch's 2006 survey[15] of the "high net worth individuals", 8.7 m have more than €1m to invest in financial assets. While in the past individuals invested in companies through financial intermediaries such as banks, the share of the latter has shrunk

12 The day Dr Evil wounded a financial giant – Financial Times August 23 2006
13 www.citigroup.com/citigroup/ corporategovernance/data/codeconduct_en.pdf
14 Le Capitalisme Total by Jean Peyrelevade - Seuil
15 http://www.us.capgemini.com/worldwealthreport06/

dramatically. Increasingly, investors allocate their capital directly to firms through the stock market. This is known as financial disintermediation. It does not mean that individuals trade their shares in companies themselves, but that pension funds and insurance companies simply manage their clients funds for a fee and pass on the gains and losses. They are not real intermediates as bankers used to be. In past centuries, the power inside a company was in the hands of the management. Today, approximately half of the stocks are held by fund managers subject to intense competition, stringent regulation and a duty to look after the fund they manage. In this new world, the United States hold half of the financial assets worldwide. Europe controls 30% including 10% for the UK alone. When looking at pension funds alone, US domination is even stronger: two thirds are North American and less than 15% European (11% for the UK alone). This is the direct consequence of European countries choice to fund pensions on a pay-as-you-go basis rather than through the accumulation of financial assets. The indirect consequence is that financial markets are dominated by US fund managers. For example, Calpers, the pension fund for California civil servants, manages assets worth more that $150bn. These funds buy all the stocks constituting stock indices such as the Dow Jones and then, under the corporate governance banner, weigh heavily on the management of those companies (*a practice known as shareholder activism*). A recent story published in the Financial Times[16] illustrates the environment in which fund managers are working. In Ireland, fund managers investing Ireland's €15bn National Pension Reserve Fund (NPRF) have been told their 2005 performance was lacklustre and warned their mandates are under review. The NRPF explained that "*while their equity performance in 2005 was in line with its benchmark, our objective was to outperform*". Instead, it underperformed the index of Irish pension funds, which achieved 21.2% return against the NPRF's 19.6%. According to the FT, the pressure by NPRF on its fund managers is continuing evidence that short-term criteria are applied to portfolios, even those with very long-term investment horizons – the NPRF will not distribute any of its assets to pensioners before 2025! The FT notes that although the NPRF is wary of openly criticizing its fund managers, Paul Carty, chairman of the commission appointed by the government to oversee the fund, remarked that "*some active managers have outperformed*". This was taken as a big hint that some managers had not. 'They know who they are" said an official at the National Treasury Management Agency, the government agency that runs the fund. Needless to say that pension funds could adopt a more ethical attitude. The Norwegian government pension fund, the fourth largest in the world ($236bn), provides a good example. In June 2006, it divested $436m worth of shares from Wal-Mart for "serious and systematic" labour violations in several countries[17]. The Norwegian fund includes holdings in 3500 foreign companies and these are being scrutinised for possible human rights and environmental abuses. Stakes have already been sold off in companies involved in nuclear weapons (Boeing) and land mines.

16 Financial Times Fund Management – March 13, 2006

17 International Herald Tribune – Norway shuns ties to weapons – January 6, 2006

b) CEOs' rapid turnover. According to a Booz Allen Hamilton (BAH) 2004 study[18] of the world's 2500 largest companies. In 2004, underperforming CEOs were removed after 4.5 years (world average). In BAH's judgment, this is an appropriate period. A 15-year vision is irrelevant and research shows CEOs need 3 to 5 years to develop their strategies and see them through to their results. CEOs on a short leash tend to become more risk averse and may be reluctant to embark on riskier projects, such as big investments or mergers and acquisitions activity. In Europe in particular, the pendulum may already have swung too far toward the short term. In 2004, CEOs removed for poor performance were in office for a median tenure of two and a half years, " *an astonishingly and counterproductively brief period of time* ". Many of the fundamental changes needed to make companies competitive require more than two years to take effect, especially given the region's tradition of cooperative labour relations and the high social costs associated with transformative change. Europe may be entering a cycle in which transformative change is required.

c) Single-minded financial markets. Another characteristics of financial markets is their tendency to be single-minded. As shown above, this can probably be explained by the fact that the relative performance of a fund manager vis-à-vis others is more important than the absolute return he generates. This can sometimes lead large companies to take absurd decisions like the famous European 3G auctions (see table below). The proceeds of the UK auction brought the government 5 to 6% of its 2000 budget!

| Country | End of the auction | Total bids/ licence fees in € bn | Bid per capita in € |
|---|---|---|---|
| UK | April 2000 | 36 | 620 |
| Netherlands | July 24, 2000 | 2.7 | 181 |
| Germany | August 2000 | 50.8 | 618 |
| Italy | October 2000 | 12 | 208 |

*Table 1 : Largest European 3G auction bids*

In that particular instance, it is important to realise that the top management of the mobile operators that committed theses large amounts had no choice but to obtain a 3G licence (or resign). During 1999, there was a string of studies produced by top investment banks and reputable consultancies explaining the importance of 3G. The message from financial analysts to mobile operators was clear, if you don't get a 3G licence you have no future. In the year that followed the auction, the CEOs of most of the companies involved in the auction were removed – the wind had changed. What this episode demonstrates is the relative lack of freedom of seemingly powerful CEOs vis-à-vis financial markets.

18 CEO succession 2004 – The world's most prominent temp workers – in Booz Allen Hamilton strategy + business issue 39

d) Where is the crime? So to sum up, fund managers are summoned to produce short term results and CEOs that do not deliver quickly are swiftly replaced. For Jean Peyrelevade[19], the former CEO of several French financial institutions such as Crédit Lyonnais, *the strength of present-day capitalism arises from the nature of the shareholders and the functioning of the fund management sector. On the one hand, shareholders are widely dispersed, have a single aim (get richer) and are anonymous because of their (large) number and the ordinariness of their conditions. These characteristics confer on them a kind of democratic legitimacy. On the other hand, the fund management industry cannot be considered as liable as it is merely serving the interest of its clients. Where is the crime if nobody is guilty?*

# 4. EU policy in the ICT sector: the case of Radio Frequency Identification (RFID)

## 4.1. EU policy objectives

The Commission policy in the electronic communications sector is pursuing the two main objectives:

- promote ICT developments as a growth engine;
- increase consumer welfare by encouraging the development of a broader variety of services and lower prices. This is mainly achieved by policies promoting competition but also in some cases by policies aimed at reducing the "digital divide" i.e. the gap between those who have access to and are able to use the Internet and those who don't.

These two objectives have been at the centre of EU policies for two decades and continue to guide the EU agenda on new topics such as Radio Frequency Identification (RFID) (see B. below).

a) ICT as a growth engine. ICT industries are one of the main drivers of economic growth. Their impact on the improved efficiency of other sectors has multiplier effects far greater than the size of the industry itself. Given the rapid expansion of wireless communications, radio spectrum is a key aspect of increasing importance for the functioning the ICT industry. Today, spectrum-dependent industries are estimated to represent between 2% to 3% of Europe's GDP, and ICT industries as a whole play a major role in Europe's effort to achieve the Lisbon goals. They are responsible for 40% of growth and 20% of investment in R&D.

b) Consumer benefits. Spectrum can also help in bridging the digital divide. In many Member States, particularly those that joined the European Union in 2004, mobile penetration is much higher than that of fixed telephony, providing connectivity much faster than would have been possible through a fixed telephone. But we need spectrum coordination if we want to go on with mobile penetration.

19 Op cit.

### 4.2. Technology assessment is not on the forefront of EU policy

a) What is RFID? A Radio Frequency Identification Device (RFID) consist of a microprocessor connected to an antenna for the communication of an identifying code. RFIDs are used on certain goods as tags, to track products along the supply chain, and for many other applications such as ski passes, security, and other sensor devices. The Commission does not see RFID as an end in itself but as the forerunner of many increasingly "intelligent" objects that interact with each other and " *help humans in ever more sophisticated ways*. RFIDs are the *precursors of a world in which billions of networked objects and sensors will report their location, identity, and history* ".

b) RFID is good for the economy. According to the Commission the RFID market is expected to grow fast over the next ten years. Cumulative sales of RFID tags so far amount to 2.4 billion, with 600 million tags being sold in 2005 alone! The number of tags delivered in 2016 could be over 450 times the number delivered in 2006. The deployment of RFID technology is expected to make a major contribution to growth and jobs. According to the Commission, RFID will significantly improve product quality, reduce fixed asset costs and stocks by 5%, improve sales by 3%, reduce labour costs in physical product movement by 65%, and generate a 45% annual growth for RFID technology and application providers. Furthermore, RFID implementations are expected to become a source of new business models and a creator of quality high-tech jobs.

c) How the Commission sees its role. The Commission believes it is necessary to build a *cross-society consensus* on technical, legal and ethical issues associated with RFID and to intervene, where required, with regulatory instruments. The issues which need to be addressed include privacy, radio spectrum allocation and the interoperability of systems, not least across EU borders.

## 5. Social consensus

The Commission sees that to exploit "the economic potential of RFID, privacy and consumer concerns associated with the use of RFID tags need to be handled constructively, with the assent of all stakeholders".

## 6. Privacy

RFID is generating a number of important questions including how to ensure that RFID tags are not abused to invade the privacy of consumers and the need to destroy RFID tags, when they could be useful for self-configuring products or automating warranty checks. The EU policy on RFID is in line with its policy in other ICT sectors. The growth of the economy is the objective while societal aspects are seen as constraints to be handled tactfully to ensure the success of the economic project.

## Conclusion

In the presentation of the conference, the organisers state that the legitimacy of technological innovations requires a connection between the technical justifications and the social ones, to consider their ethical meanings and to demonstrate their democratic opportunity.

One prerequisite for a better connection between technical and social justifications is a reform of financial markets and a more responsible attitude by governments to the management of public pension funds. The Norwegian government is showing the way in this respect. Without such a change, CEOs will not recover a sufficient degree of freedom to pursue ethical goals.

Although it frequently presents itself as besieged, the market economy model has no rival as other models failed! The imperative need to rethink the development of society is made more difficult by the absence of alternatives. Jean Peyrelevade[20] notes that the intellectual debate on the functioning of the world economy is fragmented. The dialogue between Chinese, German, Russian, American... intellectuals is not easy. No global forum exists where a public debate could take place on the foundations of the new order that rules the planet – some would argue that Davos fulfils this role. The complexity of globalisation weakens the possibility of having such a dialogue while the simplicity of profit maximising prevails. Ethical values are closely linked to the history and culture of people. By inclination intellectuals prefer to focus on national matters where they can build bridges with the past and gain the recognition of their peers rather than concern themselves with the barbarian immediacy of financial markets.

Finally, a better connection between technical and social justifications can only be achieved by raising the awareness of the public. In the 80s and early 90s, actions by academics and civil liberties organisations have successfully convinced the public of the potential danger of ICT on privacy. This in turn led governments to take the necessary legislative measures and businesses to amend their codes of conduct.

20 Le capitalisme total (p 80) – by Jean Peyrelevade – Seuil

# When Economics meets Ethics : the Governance of Economic Activities in the Information Society

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**Abstract:** Can economics be of any use to design - or at least to think - institutional frameworks that would meet the necessary ethical requirements to govern the information society? By relying on a survey of the economics of institutional design in which two types of tradeoff -centralization vs. decentralization and public vs. private provision of orders - are highlighted, the paper points out that the current global context is specific as compared to national ones, especially because there is no powerful central authority able to act as a last resort regulator and promotor of the "collective" interest. This is a challenge in the digital world due to the specificities of the information based and digital technologies based activities in which excessive monopoly capture by groups of interest could occur. These call for the emergence of authorities able to centrally provide order in last resort. This does not mean that self and local governance are not needed. The paper simply claims that they should be complemented by a global provision of public order. Various paths of emergence of such central provision are described and briefly discussed.

**Keywords:** Multilevel Governance, Public vs. Private Institutions, Network Effects, Institutional Framework, Internet Governance

Can economics be of any use to design — or at least to think — institutional frameworks that would meet the necessary ethical requirements to govern the information society? The author of these lines is quite unable to reply to this question. He can however provide the reader with recent advances in the economics

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of institutional frameworks that could be considered of some use to think, if not optimal, at least better frameworks to govern the information society.

Before doing so, some linguistic/conceptual precisions are needed. In what follows we use the very broad notion of governance to describe the activities needed to produce an order allowing the considered elementary units forming the society to coordinate. Governance results from the combination of two activities: designing rules and ensuring their compliance. The considered rules are those that delineate and allocate rights of access and rights to use resources to agents interacting in a common (economic) space. In concrete terms, these rules correspond to the property rights system (that delimit and allocate basic rights of access and use), the contract law (which establishes how these rights can be split and transferred among agents), the various regulations (which impose constraints to agents on how they shall use resources to manage various collective issues; in particular in case of interdependencies among their actions, in case of common ownership, and when there are risks of abuse of dominant positions).

Economics considers the advantages of alternative ways of establishing and enforcing orders in a given society. In particular it insists on two trade-offs. The first one is a centralization/decentralization one. Indeed, a uniform order can be centrally provided to the whole society, meaning that all the agents comply with a common set of rules implemented by a mechanism that overhang the whole society. Alternatively the collective order can result from bilateral (contractual) arrangements; resulting in a collection of heterogeneous and local orders issued by the "basis". Economics recently developed a cost/benefit analysis of the provision of an order at different degrees of centralization. The analysis points out in particular that neither pure centralization nor pure decentralization are efficient, and that efficiency results from the multilevel provision of an order.

The second tradeoff is between the provision on an order by a public or by a private entity. Indeed any collective order results from a delegation established between the individuals who will comply with the order and an entity responsible for establishing it. This entity can be of different type. It can be an individual or an informal group. It can also be, and often is, an organization. A contrast can be established between two types of delegation. A "strong" delegation — which is at the root of a public order — means that individuals recognize a wide area of authority to the "entity", because they ask this entity to establish and defend their fundamental individual rights (whatever they are). To the opposite a "weak" delegation — at the source of a private order — provides a limited authority to establish and enforce rules in a bounded set of domain of actions. In both cases, individual recognize that the production of individual rights — opposable to third parts — is partly a problem of collective action because these rights have to be mutually recognized and because they have to be established against others (which makes it worth to benefit from economies of scale). Recognizing rights to command — which is authority — to an entity which will benefit the same recognition by other individuals, will allow this entity to become a mutual guarantor among those who accept to subordinate to it as well as an aggregator of individual coercion means to constrain those who do not delegate any task to this entity to recognize the rights of those who delegate the duty to actually establish their individual rights. Since we assume that individuals are able to rank the types of rights they are delegating from more to less fundamental, one

assumes that they are ready to pay a higher price — to accept a wider renunciation of individual sovereignty — to guarantee their essential rights. This leads to contrasted types of delegations resulting in contrasted ability and "legitimacy" of various types of authorities in establishing a collective order. From the point of view of individuals, it results in a tradeoff between costs (in terms of sovereignty) and benefits (in terms of strength of rights).

To a large extent, the centralization vs. decentralization tradeoff is parallel to the public vs. private trade-off when one considers the provision of an order at the national level. Indeed in that case, the most-central/highest-level of governance is the State, while many of the entities that decentrally organize regulations for sub-sets of the nation are either totally private (as in the case of self-regulations provided by professions), or are weak public entities in the sense that in a Nation-State the strongest "public" delegation is to the national government, not to the local ones. The later are generally only responsible for providing order and services aimed at dealing with the citizens' day-to-day life, while the central government is responsible for guaranteeing their fundamental rights. This parallel no longer holds when one considers the global context.

The aim of this paper is to provide lenses to better understand the stakes and the trade-off behind institutional choices in matter of governance frameworks for the information society. It is clear however that there is no single theory to provide an optimal institutional design, nor recipes to reach it. Our goal is simply to provide the reader with an analytical framework that could be useful when considering the issues of the governance of the Internet and of the information society (which are in this paper considered as closely linked issues since the technical management of the infrastructure and its contents influences directly the rights of uses and rights of access over information and digital devices, and as a consequence the governance of activities performed on-line or thanks to digital technologies). However, one must point out that the proposed framework is not at all specific to the analysis of the Internet. The regulation of the Internet, and more generally of the information society, is simply another domain of global governance that raises the issue of central government's scattered authority, upwards to supranational entities, downwards to sub national jurisdictions, and sideways to public/private networks[1].

The paper is organized as follows. It starts with a presentation of the economics of institutional design in which the two types of tradeoff highlighted above are presented (section 1). It then explains why the current global context is specific as compared to national ones, especially because there is no powerful and central authority able to act as a last resort regulator (section 2). This is a challenge in the digital world due to the specificities of the information based and digital technologies based activities (section 3). Thus, both the general theory and the

1 Two bodies of economics literature have investigated these notions in particular. Neoclassical political economists and public choice theorists (e.g. Elinor Ostrom and James Walker, 1997; James Rosenau, 2001) insist on the idea that governance results from the setting of dispersed self-rule on the part of diverse voluntary groups that overlap and interact in a complex way among each other and with imperfect markets and imperfect public-interest seeking institutions. Theorists of (fiscal) federalism have gone from studies focused primarily on formal constitutional federations to a costs/benefits analysis of centralization vs. decentralization of authority (e.g. Wallace Oates, 1972, 1999).

specificities of the Internet based information society call for the emergence of instances able to centrally provide order in last resort. This does not mean that self and local governance are not needed. The paper simply claims that they should be complemented by some public and global provision of order. Various paths of emergence of such a central provision are described and briefly discussed (section 4).

# 1. The Economics of Institutional Design

## 1.1. The centralization vs. decentralization tradeoff

Behind the economics of institutional design lies the idea that an institutional system results from a human activity consisting in building coordination means allowing agents to coordinate in using the resources available in a given economic space. Alternative institutional frameworks grant agents with different (individual and collective) capabilities for using resources, producing new ones, and accumulating, in particular because they impact on individual incentives and freedom to use and transfer resources and on collective capabilities to share risk and mutualize resources, which overall result in contrasted capabilities to allocate resources to their most efficient use, and in diverse dynamics of accumulation and innovation. Also, alternative institutional frameworks correspond to different quantities of resources spent to establish an order since means and efforts have to be dedicated to the design of rules and to guarantee their enforcement. A given organization of an institutional framework therefore results in an economic outcome — that can be summed up in terms of wealth or growth — and in costs. The "production" of an institutional framework can thus be analyzed as an economic activity, of which benefits/costs performance is dependant upon the degree to which it is centrally (or decentrally) provided.

Following the seminal contributions by Oates (1972, 1999), Barzel (1989) and North (1990), and more recently by Greif (2006), economists have been dedicating several applied and theoretical analysis of the economics of centralization vs. decentralization of the provision of an order. Part of this literature has recently been tentatively synthesized by Brousseau & Raynaud (2006, 2007). The analysis is summed-up below.

It is important to point out two essential assumptions behind the analysis. First, agents are supposed to be heterogeneous meaning that they have different endowment, and different preferences, and different localization in the networks structuring a society. Therefore, they have contrasted coordination needs and specific preferences on the matter when considering each of their potential counterparts in possible interactions (because of both parts' characteristics and because of the purpose of their transactions). Thus, they have an intrinsic preference for diversity and even customization of their relationships' governance (which translates into a strong willingness to sign bilateral contracts to govern them). Second, agents care about the (transaction) costs they individually bear, not about the transaction costs born by the society in general. Since they are in asymmetric situation — which relates to the hypothesis according to which they have different endowment and different localization in relational networks — some individuals have the ability to impose to others rules that fit better to the preferences of the former than to those of

the later (see Brousseau and Raynaud (2006) for details). Orders are built around kernels of agents sharing close preferences in matter of coordination, meaning that they can agree on a set of rules reducing transaction costs among them. Other agents that may have different preferences can have interest to adopt the same rules, because they reduce their coordination costs as compared to non-adhesion, if alternative collective coordination solutions are not available. However, alternative set of rules if they exist, would better meet their needs. Thus, individuals could well adopt rules designed by the members of the kernel even though they are not their first choice solutions. This results into the idea that a given order, whether it applies to a pair of agents, to a community or to the whole society, is designed to minimize the costs (and maximize the benefits) of some core members, while it does not fit perfectly with the preferences of marginal members (which therefore benefit of a lower benefits/costs ratio than core members). Collective orders are therefore made of various "circles" of individuals adopting rules designed to meet, above all, the coordination needs of a kernel. Those who are in circles far from the kernel have to incur higher costs of coordination than they would, in an ideal world, in which they would coordinate according to their preferences. They incur maladaptation costs defined as the difference between their first best solution and the cost of the available solution. Orders are therefore "centered" and "sponsored"; some individuals had in the past interest in promoting the use of their preferred rule by others, and were successful in inciting them to adopt it[2].

Following this "vision", one can pinpoint a reduced number of factors influencing the benefit/cost ratio of settling rules and organizing enforcement centrally or decentrally in a given society. Centrally means that a common order applies to the whole society. Decentrally means that different orders co-exist. Full decentralization means that only bilateral orders are established by contracts among the members of the society. Intermediate decentralization, means that self-regulated communities co-exist (and overlap). One important consequence is that the more centrally provided an order, the more mandatory the order for the individuals as they have fewer alternative (exit) options. In case of full centralization individuals do not have any possibility to adhere to an alternative collective order, while with an increasing degree of decentralization in the provision of order(s), individuals tend to have wider choice in matter of alternative orders to adhere to.

In a first analytical step, the costs and the benefit of settling an order on a more centralized basis (which can be read as the benefits and the costs of settling a social order on an increasingly decentralized basis) are highlighted. The "centralization vs. decentralization" trade-off is explored. In a second step, the way a social order may result from the establishment of partial orders at different levels of centralization/decentralization, allows to explore the economics of multilevel governance.

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2 Here our analysis fits with the economics of social networks applied to "star networks", i.e. networks centered on a pivotal agent linking all the other members of the network (see Hanneman and Riddle, 2005, for an overview of this literature). In these networks, "closeness" (Bonacich, 1987) — i.e. the number of links between individuals — of an individual to the center refers directly to the degree of convergence of individual preferences in matter of coordination (i.e. agents in the kernel share closer coordination needs than those distant from it).

The benefits of centralization (which are therefore also the cost of decentralization) are due to the combination of three effects

- scale and scope effects: the wider the community to which a common system of rules applies and is made enforceable by common means, the more the fixed cost of designing rules and establishing means of supervision/constraints can be shared among the members;
- learning and specialization benefits: the wider the community to which an order applies, the easier it is to dedicate specific means and to specialize them in designing efficient principles of coordination, in supervising agents, in developing means to constrain them.
- reduction of collective welfare losses: when an order is designed/enforced at a collective level, interdependencies among individuals are taken care of (are internalized), whereas several orders co-exist they can be partly incompatible, resulting in higher costs of coordination among individuals complying with heterogeneous orders and in externalities among communities[3].

Thus the more unique the order applying to a society, the less inconsistencies among local arrangements, and the wider internalization of externalities, and the higher is the creation of positive network effects[4] due to the use of common rules.

On the other hand, centralization generates inefficiencies due to

- (static) maladaptation: the more central is the provision of an order in a given society, the increasing heterogeneity of individual preferences and coordination needs, to which common solutions are applied. Thus, the increasing share of individuals who have to comply to coordination principles that are not their first best; and the wider the gap between the preferences of the members of the kernel and the members of the marginal circles of the community. The more centrally provided the order, the higher maladaptation costs in the society.
- (dynamic) maladaptation: the larger the community to which a common order applies, the more difficult it is to manage adaptations to evolving coordination requirements. Indeed renegotiations of the rules are more difficult to organize due to the wider heterogeneity of preferences. In addition, since core members being able to externalize costs on the other members of the community (who have less exit options when the order is more centrally provided), they have fewer incentives to adapt to new requirements. The more centrally provided an order, the less likely it is to adapt to needed changes, resulting in higher maladaptation costs.

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3 An externality is an interdependence among economic agents that is not taken into account by the economics system — by the price system — and generates therefore biased decisions (about the use of resources), because those who make decisions do not incur the actual cost of using resources.

4 A network effect is a specific type or externality due to networking among individuals. The higher the number of user of a network (whether it is a physical resource, as a telecommunication network, or an intangible resource, like a technical standard — which is a rule —, the wider benefit each individual user gets from the network. Positive networks externalities can however be inhibited by congestion effects (that applies especially for physical resources).

- Higher information asymmetries: the larger the community, the more difficult it is to supervise members of the community because information asymmetries cumulate. This result in costs either due to non-compliance, or to efforts made to supervise members of the community despite information asymmetries.
- Increased enforcement requirements: since individuals complying with a collective order have to bear higher (static and dynamic) maladaptation costs when the order is more centrally provided, while they have less exit options (because they are fewer alternative collective orders), individuals have increasing incentives to free-ride. This result in increasing needs of enforcement, which leads to higher costs.
- The rise of private capture of the order: again, the more central the order, the less exit options for those who comply to it. Kernel's members have therefore increasing capabilities to benefit from their asymmetric position to externalize costs on peripheral members and to capture rents on them. They also have increasing incentives to do so since the field to harvest grows with the enlargement of the community (due to more centralization). Thus capture should increase.

It has to be pointed out that the three first categories of costs are "social" costs in the sense that they result in higher amount of resources spent in coordination activities, while the fourth category is essentially a matter of redistribution (which can nevertheless have consequences in terms of social costs by distorting incentives (for instance to comply to the order and resulting therefore in losses due to increased enforcement requirements; cf. iv). Figure 1 sums-up this.

| Benefits<br>(Advantages of collectively settling coordination problems compared to more decentralized levels) | Costs<br>(Inefficiencies of collectively settling coordination problems compared to more decentralized levels) |
|---|---|
| • Scale & scope effects (positive network effects by using common standards for interactions...),<br>• Learning and specialization benefits,<br>• Reduction of collective welfare losses (greater consistency of local rules, internalization of externalities, ...) | • Static maladaptation (increasing heterogeneity of preferences),<br>• Dynamic maladaptation (reduced renegotiability)<br>• Cumulative Information Asymmetries<br>• Enforcement requirements (increasing incentives to free ride),<br>• Private capture (greater incentives to distort collective governance) |

*Figure 1: Factors affecting Trade-offs of Centralization*

As it is understood, there is not best way to establish an order. Centralization and decentralization have their own advantages. This means that claims in favor of

regime of pure centralization, or full decentralization, of even sole self-coordination by communities are wrong. Efficiency in matter of institutional design results from multi-level governance; i.e. the simultaneous provision of complementary orders at different degree of centralization.

Two phenomena are at play:

- "Subsidiarity": various types of coordination problems are best solved at various levels. This is due to the fact that heterogeneity of coordination preferences/needs among individuals are different for various dimension of coordination (leading to different intensities of maladaptation). This is also due to the heterogeneity in levels of benefits from centralization due to potential economies of scale, learning effects, externalities. Consequently, a mix of generic, local and interindividual governance is the best way to reduce coordination costs by addressing the various coordination problems at the right levels. These problems are well known of legal scholars when they have to manage harmonization/federalization processes.
- "Check and Balance": the various levels of provision of order can also control the weaknesses of the other levels. For instance, decentralization reduces the capabilities of capture by those belonging to the kernel of generic/central institutions and also of core members of intermediate levels institutions, since all these orders are challenged by competing orders. It also facilitates innovation. To the opposite more generic institutions can increase the enforcement capabilities of more local institutions. Indeed local institutions have inherent difficulties to generate compliance because members have exit options. A more generic institution can pursue those who did escape from a "local" jurisdiction after breaking its rules. These issues are well known of political scientists who insist on the necessity of (horizontal and vertical) decentralization of authority (Voigt, 2003, 2007).

All these calls for multilayer institutional frameworks, combining various levels of local regulation, while arbitrated by a last resort level of governance, aimed at dealing with the interdependencies that exist at the level of the society as a whole.

## 1.2. The public/private tradeoff

As pointed out in the introduction a public regulator — whatever this "regulator" is as an entity: an individual, a group or an organization — benefits from a "strong" delegation by the citizens. Let's qualify this strong delegation as a "constitutional" delegation. This delegation provides the regulator with the "legitimacy" to build/design the "collective interest" of the "citizens". It also explains why the later grant the "public" regulator with the "monopoly of legitimate violence". Indeed this monopoly allows the regulator to guarantee enforcement both within the community and against the non-members of the community. Such a constitutional delegation tends to be exclusive, since individuals are not likely to confidently renounce to a wide range of their individual liberty to benefit from regulators that would be complex to control if there were too many, and moreover would risk entering into conflict among each other. Given this exclusive character of a constitutional

delegation and its scope, the public regulator is granted with strong "legitimacy" and "power", which makes the order it implements hard to challenge.

It is clear, however, that a constitutional delegation generates hazards for the principal-citizens. Indeed, ex-post he might be subject to without limit threat by the regulator who can use the means delegated by the citizens to extort their wealth and even enslave or kill them. A constitutional delegation being granted to secure the fundamentals rights of the citizens, if the public regulator decides to erase those rights, the citizen has only few means to protect them. He will accept to grant the defense of such fundamental rights if an only if he can get guarantee that the power of the public regulator will not be captured by individuals and groups that would be able to extort them[5]. This explains why systems of public authorities tend to be built around a principle of "Checks and Balances" to avoid capture. Also, the citizens tend to submit public authorities to a permanent assessment of their willingness to take into consideration their actual needs and preferences, for fear of removing their constitutional delegation to another regulator or, more credibly, to another group/individual in charge of managing the regulating organization. These explain both the pressures for (horizontal and vertical) division of power and the request for "accountability". Constitutional delegation is nevertheless of high risk for citizens, as demonstrated by the dominance worldwide of authoritarian regimes capable to escape these constraints bounding the actual power of the individuals/groups actually in charge of public regulation.

To the opposite, private regulation/governance draws from a "bounded" or "targeted" delegation by stakeholders of a right to implement a collective order. It strictly limits the range of actions by individuals over which the regulator benefits from rights to regulate. It bounds also the capability of the regulator to constrain the individuals submitted to his jurisdiction. As a consequence, private regulators have a weak capability to establish a collective regulation, but there is also little risk of capture by those agents to which authority is delegated. In particular principals can always opt-out. This leads the private regulator to permanently take into account the will and the interest of its stakeholders. Thus, the inherent bounded enforcement capability of a private regulator makes the establishment of collective order on the basis of "targeted" delegation, a solution only for the production and defense of "club goods". Indeed the stakeholders have to understand/measure their individual interest in the production of the collective good — and the individual cost of individual free riding — to accept the constraints imposed by the private regulator.

The public vs. private tradeoff in the provision of a collective order is therefore matter of capability, purpose and risk. Constitutional delegation tends to grant the public regulator with, both, strong power to actually build a collective order and with the legitimacy to define the "collective" interest (which means selecting and measuring individual preferences through a specific aggregation process), while it results in a high risk of no limit capture by the authority. Targeted and bounded delegation tends to result in only a weak capability to regulate behaviors, which

5 Of course this is depending of his initial situation in terms of effective fundamental rights. If they are not established ex ante in a state of (wild) nature, citizens tend to accept strong limitation of their freedom without much control over the possible abuses of the authority as in the serfdom contract.

reduces the scope of the implemented collective order. This later is inevitably oriented toward efficiency and always challenged by alternative orders, which leads to be more short-termist than any public regulator which is able to impose long term interest.

As in the case of the levels of governance, the public/private tradeoff suggest combinations of mode of governance in an actual institutional framework to optimally deals with the contrasted properties of alternative governance solutions.

## 2. The Global Governance Challenge

In the context of a nation-state, there is a homothety between the centralization vs. decentralization tradeoff and the public vs. private one. Indeed, the more generic institution tend to be public — which corresponds to the State —, while the decentralized entities in charge of establishing orders have a higher probability to be private.

At the national level, the public regulator in last resort is very strong both because it is the more generic one — to the limit, individuals have no exit options — and because it benefits from a strong delegation. This provides him a very strong power of capture, which strongly incites the "citizens" to influence the organization of public authorities to minimize risk of capture of its authority and abuse of it. If this risk is controlled, then the public authorities have strong means to build collective interest and to frame behavior to get it.

Local private authorities have a low capability to challenge the public order. Therefore they can be oriented toward efficiency, while being controlled by the public orders for risks to act against the general interest. There is therefore a complementarity between private and local regulations that allow agents to benefit from more efficiency — which is not the primary target of the public regulator, both because its delegation leads to balance efficiency with other criteria (like equality), and because as a generic regulator, it is not (or only weakly) challenged by alternative collective providers of order — while avoiding risk of capture — because the public regulator is able to oppose the collective interest to the private regulators (via antitrust, minimal regulatory standards and control of the private regulators' behaviors) — and because citizens try to control the public regulator. There is however a risk of collusion between public and private regulators to the detriment of the stakeholders. Again, this risk can be controlled by an appropriate organizational design of public authorities.

In the international context, this hierarchy between a public regulator overhanging all the other regulators, being able to regulate them and benefiting from a legitimate delegation from the citizens to promote the collective/public interest does no longer holds. At best, public regulators can promote the collective interest of only a sub-set of the global population. In the same time, since they are inherently local regulators in competition with other regulators, they are submitted to a competitive process by other regulators. Their capability to fairly weigh the preferences of all the citizens under their jurisdiction tends to be challenged by the fact that some categories of stakeholders have a greater ability than others to perform "forum shopping" among public regulators. The later might therefore tend to take into considerations only the interest of the more "mobile" stakeholders, which take

them away from the balance among individual interests at the core of the definition of the collective interest. Public regulators are therefore no longer the holders of the "general" interest, which hinders their legitimacy in defining norms that would have more legitimacy than private ones, simply because they would take into account the preferences of the widest possible considered population. In addition, public regulators' enforcement capability shrinks. Within nation-states, the strength of enforcement of the public regulator draws from his ability to fully exclude in last resort outlaws from the social game. This allows the public regulator to benefit of a credible threat leading citizens to comply with the rules it designs and to accept to execute its sentences. At the international level, the public regulator no longer benefits from any power of enforcement (exclusion) in last resort; except when one considers the citizens under its jurisdiction. This generates a paradox since no public regulator exists to guarantee in last resort any global regulation that would be impossible to bypass. However, in the same time, public regulators are the only players benefiting of the needed enforcement capabilities that would be needed to implement norms to the population under their jurisdiction.

In the same way, private regulators remain local regulators in the sense that they establish an order covering only a subset of the total (global) population. However, the case may occur that at the global level, the population covered by private regulators is larger than those concerned by public regulators. In addition, their enforcement capability tends to increase because they can group at the global level all the members of a given community sharing common characteristics or common preferences (e.g. all the stakeholders involved in a given industry). This provides them with the strength to establish an order that can surpass the capability of public regulators in establishing an order in the same domain. Despite the fact that they benefit only from a weak delegation from their stakeholders, private regulators might benefit from a stronger legitimacy than public regulators to establish an order in a given domain, because they are able to take into account the preferences of all the stakeholders concerned by this domain.

The capability provided by this ability to implement a global — and therefore a *"without-wide-exit-option"* — order in a certain domain is a major concern because it might become "excessive" from two points of views. First, private regulators get a targeted delegation from sub-groups, while the regulation they implement can impact on non-members of these sub-groups. Since they do take into account only the interest of their principals, and since public regulators no longer control the side effects of their regulations, global private regulators can harm the interests of outsiders. In the same thought, principals of private regulators might well rely on the capability of private regulators to bypass national public regulators to implement orders that harm even the fundamental interest of those they are supposed to protect. Again, private regulators have no incentives to take into account interests of agents who are not their principals. Several examples of that might be identified in the information society, especially because private norms setters can create information spaces out of reach for national public authorities. In these spaces, private regulators can harm pre-existing rights (property rights, privacy, free speech, etc.). These concern are reinforced by the fact that the orders we are speaking of are "coordination platforms". Adopters of an order benefit and generate positive network externalities in the sense that all the *"users"* of a common order experience

transaction cost reduction. There is therefore a risk of emergence of monopolistic coordination platforms that would benefit of a *de facto* exclusivity of coordination in certain domain. Not only these stable monopolies would induce capture of rents between kernel's members and marginal circle's members, but they also would be able to capture rents on non-members (which is for instance the case when the assets of a non-member are used by the members).

Global regulatory challenges thus draw from three facts. First, in the absence of a regulator in last resort able to take into consideration the preferences of the entire global population, some benefits of centralization cannot be obtained. In particular, discrepancies among regulations can result in substantial coordination costs (partly generated by incompatibilities, partly generated by conflicts), and public goods might no be provided at the optimal level. Second, while the power of public regulators can be captured to implement an order which does not fully reflect the interest of all the citizens — i.e. the general interest —, there is no mechanism available at the global level to promote any form of general interest. Moreover, in the absence of (public) regulator in last resort able to regulate (public and private) regulators, the relationships among them are purely based on competition. It might lead some of them to abuse of dominant position, while others could be unable to ensure the sustainability of local regulations, which however would reflect the preferences of some groups of agents in certain domains. Since the competitive process does not systematically guarantee the selection of the most efficient or most desired solutions, especially when network externalities are at play (David, 1985; Katz and Shapiro, 1985; Arthur, 1989;Liebowitz and Margolis, 1994), the incapacity of a public regulator to oversee the relationships among the decentralized regulators is a concern in matter of global governance. Third, to the opposite, the strength and ability of private regulators to implement orders in certain domain at the global level reinforces the probability of capture of collective ordering by specific interests.

## 3. The Regulatory Specificities of the Cyberworld

The challenges raised by problems of global concern in the absence of a framework well adapted to global regulation — especially in the absence of a global regulator in last resort and of actual capabilities by public regulators to control private ones — are reinforced in the specific cases of the regulation of the information society. Indeed, digital technologies make it possible at a very low cost to implement orders on a very decentralized basis. First, digital technologies empower individual agents with the ability to implement self-enforcing property rights and contracts over information goods. Indeed, the code — to rely on Lessig's categories — allows any agent that produce information or knowledge to encrypt it so as to control access and use. It is a way to decentrally establish property rights, without relying on a third part regulator responsible for enforcement (in exchange of a control of the legitimacy of claims). Second, the principle of end-to-end connectivity allows agents to design information spaces in which they control how agents interact. The ability to build and control access to information spaces — whatever they are from mailing lists to sophisticated extranets — provides with a power of inclusion/exclusion in/from a platform of coordination is the key resource for the regulation of (virtual) communities since this provides with a power of

exclusion in case of non-compliance with the rules in use in the community. Both technical capabilities strongly reduce the cost of implementing an order, especially because they drive enforcement costs down. In particular, they tend to reduce the economies of scale and the benefits of specialization (in matter of supervision) linked to centralization (table 1), thus reducing the range of situation in which the tradeoff centralization vs. decentralization is in favor of the former. Indeed, exclusion in last resort does not require the use of physical strength, but only an ability to fake information. In addition tracking technologies allow at a very low cost to supervise behaviors. Not only exclusion and supervision costs are driven down, but the low cost of the technology makes the entry ticket (i.e. the minimum level of fixed cost) available for a great deal of economics agents.

Lastly, these technologies allow faking contents and exchanges of information, which reinforce in particular the capability of regulators to bypass control in last resort of their behavior by those in charge of the collective interest. All this happens in a context in which the technological revolution and the globalization of networks challenge most of the traditional regulatory frameworks that were settled in a different technological context and at a time in which the cost of circulation of information was much higher. Traditional regulatory frameworks, usually organized at the national level, are no longer performing according to the needs.

Thus, the problems raised by the changing regulatory capabilities provided to agents by digital technologies do not change the nature of the global regulatory challenge. It only enlarges their scope due to the empowerment of individuals against the traditional public regulators. Is it however a threat? Indeed, the fact that governmental constraint is no longer the sole enforcement tool and that individuals car form global communities regulating certain domains according to their preferences, can be considered as a positive factor for challenging the ability of those in control of governments to capture the strength of public regulators to their own benefits.

However, the cyber-world deals with resources that have a "public" nature. More precisely, the governance of digital networks and of contents circulated, stocked and produced on these networks deal with two types of resources — information and knowledge, on the one hand, open coordination platforms (which encompass both technical standards for interoperability of digital technologies to social spaces allowing agents to coordinate, exchange and share resources), on the other hand — which are not "rival", while they tend to become more "excludable" with digital technologies[6]. This raises a major challenge since the access to these "public" resources can be artificially and inefficiently restricted. The incentives to do so are obvious: the exercise of monopoly power and the capture of rents. Traditional property rights system try to balance the necessity to provide incentives to produce and to maintain resources with the collective interest, in particular by bounding owners' ability to forbid access to their resources when inefficient, generally because it prevents the use of complementary resources (which is often the considered case in

6 "Public" (or collective) goods are characterized by non-rivalry in consumption — the use of the good by one agent does not diminish its availability for another agent — and non-excludability – it is costly and sometimes impossible to exclude a user from the access or the use of the good.

anti-trust policies) or because one deal with a non-rival resource (which explains the many restrictions to property sovereignty in matter of intangible assets). Public regulators therefore bound the exclusivity of rights of access and rights of use. This is not longer possible in the cyber-world, due to the capability of the later to self-implement their property rights without relying on the former. In the same time, the ability to fake use and exchanges of information within specific communities allow these communities to implement orders that could harm third parts. For instance, members of some communities can access to contents distributed under certain conditions by their owners, and decide to use these contents within the community without complying any longer with the conditions imposed by the initial "owners". Also, communities could well rely on hidden platforms of coordination to manage collusive behaviors.

These threats are particularly strong in the information society because of the long-term sustainability of monopolies. Indeed, the economics of the digital economy is characterized by fixed costs and network externalities (Shapiro and Varian, 1999; Brousseau and Curien, 2007), which facilitate the emergence and implementation of monopolies. This trend is reinforced by the fact that standards of interface are essential in this universe of modular technologies. Due to network effects, the establishment of these standards can be based on a decentralized process of adoption by users. Dominant players have thus strong incentives to manipulate the diffusions processes of these standards in order to favor solutions that enhance their market power. The control of standards of interfaces is essential because it leads to influence entries and the dynamic of competition and technical evolutions. It might therefore lead to endless domination capabilities, or at least to downgrade the contestability of most dominant position.

Thus, digital network and technologies considerably reinforce the capabilities of individuals and communities to develop regulations and orders fitting to their specific needs in a context where the dynamic of the competitive process can be hindered in the long run by dominant players. At the national level it can result in a equilibrated balance of power between public and private regulators, since the former still hold the capability to physically constrain the later, which in turn can escape the jurisdiction of the former. It is however a major concern at the international level since nobody is really able to counter-balance the power of private regulators, which can rely on network and viral effects to establish and exercise strong market power, and which can also by-pass most of the efforts made by (de facto local) public regulators to promote collective interest or to hinder their market power.

## 4. Several Possible Governance Frameworks

To control the risk of an endless capture of the governance/regulatory power by private entities driven by the sole interest of their stakeholders (that might also collude with some dominant public regulators aimed at promoting the only interest of their citizens), an authority responsible in last resort for guaranteeing at least an open and fair competition among the various (public and private) entities establishing orders is essential. Preserving competition is not only a good way to avoid the establishment of orders that would lead to monopoly capture for long

periods, it is also a mean to incite the various *"sponsors"* of orders to negotiate to manage compatibilities among orders. This is essential since in case no order/platform or coordination is able to definitively surpass its competitors by becoming the only available solution at the global scale, the various stakeholders might exercice pressures on the *"sponsors"* of the alternative orders to harmonize at least interfaces to decrease transaction costs. If members of the kernels get rid of their expectations to impose their first best order at the global level, their second best option is to negotiate with sponsors of competing orders to avoid defection by their stakeholders who are simply seeking for costless platforms of coordination. Such negotiations should result in global orders that would care of more individual interests — that would be more inclusive — than the order resulting from pure competition among alternative orders, since the interests taken into account by several "sponsors" of various orders will be considered.

Thus, ideally, the information society needs a last resort entity able to control the establishment of non-contestable monopolies providing collective orders. It would be responsible for controlling the actual performance of the various orders established by various entities; which at least require a minimal transparency and therefore limits to the rights/capabilities to fake uses and exchange of information. Indeed the last resort regulator should be able to control what is happening in closed coordination spaces. Rules of disclosure rule and bounded encryption capabilities should therefore be implemented.

Second, the regulator in last resort should be able to guarantee that those promoting orders corresponding to the preferences of their stakeholders, would not be prevented to implement it, as providers of alternative orders or opportunistic individuals driven by hit and run predation strategies would be able to bypass their bounded enforcement capabilities. This role of last resort enforcer is well justified in Milgrom et al. (1990) and Greif et al. (1994) and corresponds to one of the benefits of centralization highlighted above.

Third, and also in line with our analysis of multilevel governance, a last resort authority able to implement an order at the most central level is needed to internalize externalities and maximize collective interest. To optimize these effects, this authority should be of a public nature, since a strong delegation will bring it to take into account a wider set of domains and interest than a narrow one. Since interdependencies can be expected among domains, the regulator in last resort would ideally not only benefit from delegation by the widest possible population, it should also benefit from the widest possible delegation (in terms of domains) by the stakeholders.

Therefore, there are several reasons calling for the emergence of a regulator of last resort in the information society; and even calling for the last resort regulator of a public nature. It is well known, however, that today there is no process under way of emergence of a global government. However it should be recognized that there are several possible path of emergence of such regulators in last resort, and that these path can lead to very different models.

The ICANN (*Internet Corporation for Assigned Names and Numbers*; http://www.icann.com/) is a good candidate for being a last resort regulator of the Internet and more generally of the information society because, as argued elsewhere (Brousseau, 2004, 2007), it owns and maintains the essential resources guaranteeing

access to the Internet: i.e. the addressing system. Indeed ICANN decisions can result in *de facto* excluding from the Internet the services providers or the users that would not comply with ICANN's will. ICANN consistently claims that it never used this capability because it seeks to be only a "technical" regulator of the Internet, responsible for its technical performance only. It is nevertheless obvious that the capability to control access to the Internet linked to the control of the addressing system is a key resource available and needed by any regulator in last resort, since it allows to forbid actual implementation of orders inconsistent with the principles promoted by the last resort regulator. Since ICANN is not independent from the US Government, because its prerogatives draws from a delegation contract by the Federal Government, because implementation of its decisions rely on Verisign that is also an agent of the US Government, and also because ICANN is incorporated in the US, it is clear that this organization is not exactly what we usually qualify as a self and private regulator. It is a private entity to which governmental power is delegated.

The ICANN model is therefore a model corresponding to one possible form of public governance at the global level: hegemony. A hegemonic model relies on the recognition of a strong delegation by citizens (who initially delegated the provision of their fundamental rights to their "national" government) to another government that become the hegemon. This could happen because this hegemon is able to provide a "service" of higher quality than the one delivered by the "national" government, and because the later is unable to avoid this bypass of delegation by its citizens. All these individuals and groups of interest adhering and involved in the processes of claimed "self-regulation" promoted by ICANN consider that this organization, backed by the US Government and by the US constitution, provides a framework aimed a regulating the information society and the information economy according to principles that better fits their interest than the alternative framework promoted by their national governments, either for political reasons — as it is the case for many citizens of non-democratic states — or for economic reasons — as it is the case for economic agents originating from many countries with high intensity of state's direct intervention in the economy. The advantage of a hegemonic model is that it provides an already existing framework in which a last resort regulator is able to centrally provide components of a generic order. Its limit lies in the fact that the hegemon does not consider all the principals providing him with a "public" delegation as belonging to the same circle. There are obviously full rights citizens (who benefit for instance of "voice" — cf. Hirshman (1970) — and right to vote) and second rank citizens (who only benefit a right to leave). The authority in charge of establishing a common order will higher rank the preferences of the first category than those of the second one.

One of the alternative models is obviously the one promoted by the WSIS process (World Summit on the Information Society; http://www.itu.int/wsis). Here the underlying model is clearly the one of a confederation in which the holders of strong delegation by the citizens — the Governments — accept to delegate some of their rights to establish an order to a common entity. The weakness of a confederal model lies in the fact that the national governments do not definitively give up with their prerogatives to regulate. They often remain the holders of enforcement capabilities and responsible in last resort for the compliance of their citizens with the rules decided by the confederal entity. This provides them with a *de facto* veto power

over any potential confederal regulation, which bounds capability to promote the general interest (while it protect interest of those who have the national governments' ear). Indeed, there is no direct delegation between the citizens and the entity in charge of the global/last resort governance/regulation, which bounds both the capability and the legitimacy of the confederal entity in imposing binding regulations to the national regulators. This explains well why the WSIS process is so slow to take off and seems so unlikely to result in actual regulations. On the one hand, there are little chances to reach agreements among governments and nations that have such contrasted preferences in matter of regulating information exchanges, access to knowledge and platforms of coordination. On the other hand, several major players and in particular the US Government and private regulators, have interest in promoting alternative models of global regulation. The process initiated by the WSIS has therefore little chances to result in the emergence of a public regulator in last resort really able to cope with the preferences of most of the global citizens (while of course it is an important laboratory of ideas and process to allow expressions of a wide range of opinions).

The last model is the one of a federation, in which a federal entity gets strong delegation from the citizens — either directly or via a process of full and definitive transfer of prerogatives from national government to the federal one. Today, such a process does not exist at all at the global level. However, it is to a certain extent what is happening in many domains, generally, in regional unions, and in Europe in particular. As well illustrated by the performance of the US federal system, when a federal government benefits from a "constitutional" delegation by citizens, it benefits from an actual authority to implement an order aimed at guaranteeing the collective interest of its constituency, while being submitted in the same time to challenges by decentralized holders of public or private delegations to provide all kind of orders. A federal system is therefore much preferable, everything equal, to any alternative since it actually allows distribution of governance prerogatives according to the principles of multi-level and multi-mode governance highlighted in the first section of this chapter. It is clear, however, that such a model requires a slow process of institutional evolutions, through which — even by being submitted to short terms back and forth movements — integration and enlargement result from progressive discovery, negotiation and adhesion of/to common principles of collective regulations. The problem with this option in the current global and technological dynamics is that alternative regimes of global regulations could well emerge either on the basis of the hegemonic model or on the basis of fragmented private regulations.

Economics can well meet ethics in recognizing the normative necessity to benefit from a global and legitimate regulator in last resort. It might in the same time lead to recognize that the combined forces of private interests and biased competitive selection processes could lead to orders that would not fit to this first best. Economics propose however tools to assess the respective advantages and costs of these alternative solutions, that could be of some usefulness to choose among the possible available models of regulatory architecture for the information society.

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# The Institutional Dynamics of Sharing Biological Information : Towards Reflexive Governance of the Information Society[1]

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**Abstract:** The aim of this paper is to contribute to building a framework for reflexive governance of the information society. The hypothesis is that new institutional economics as an interdisciplinary research program can provide some of the necessary tools for this framework and help us to understand how the reflexive feedback of actors and users on the social challenges of the new technologies can be embedded in the institutions of regulation. To test this hypothesis, we develop a specific case study on the building of the microbiological commons. This case study is chosen because of the leading role of this field in the development of institutions procedures for reflexive involvement of actors and users in the institutional design, such as in the case of the Global Biodiversity Information Facility or GENBANK. As our analysis attempts to show, the success of these initiatives in building both efficient and legitimate means of information sharing is dependent on a double reflexive mechanism embedded in the institutional rules : (1) organizing feedback of the actors and users on the institutional rules and (2) the building of common understanding amongst different stakeholder communities.

**Keywords:** Reflexive governance, Genetic resources, Databases, Intellectual property rights, Public goods.

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# Introduction

As scientists and user groups become better connected with each other (particularly through the Internet), and as research focuses on issues of global importance (such as climate change, human health and biodiversity) there is a growing need to systematically address data access and sharing issues beyond national jurisdictions and thereby create greater value from international cooperation. The goal should be to ensure that both researchers and the broader public receive the optimum return on public investment, and to build on the value chain of investment in research and research data (Stiglitz *et al.* 2000).

Integrated and combined access to this multifaceted realm of information opens perspectives for the implementation of new applications. In the field of the life sciences, new sets of tools for studying biological building blocks and pathways will lay the foundation for even more complex future projects. These may include the complete mapping of an organism's protein and metabolism networks, as well as the creation of biological models that can pave the way for theoretical models on bacterial speciation and its complex ecological dynamics (Gevers *et al.* submitted), or the development of tools for automated species identification. These tools undoubtedly require access to sets of skills that are not typically encountered among systematists or within the departments and institutions in which the bulk of formal taxonomic identifications are conducted. Developing solid approaches requires new collaborations between microbiologists, engineers, mathematicians, computer scientists and people who have significant knowledge of the legal and socio-economic aspects of sharing biological resources and software tools in the public domain.

These new applications of information technologies within the life sciences raise important questions related to the social embedding of information technologies. Hence it raises important new questions for the field of 'social informatics' (Kling, 1996). Indeed technical choices within the field of bioinformatics also depend on social choices, whether it is in problems such as the building of genomic sequence databases, the design of persistent numerical identifiers for taxonomic information of living organisms or the integration of clinical data and images coming brain research. These technological developments reflect social choices on issues such as protection of privacy, ownership of life or bioethics. Moreover, the capacity to make these choices depends increasingly on the possibility to retain certain property rights on this information, which define who has the right to decide upon the way information is used, managed and exchanged. Open access to the information and shared ownership of the information has become a key condition for connecting the path of development of information technologies in the life sciences to social values and ethical reflection.

Within the field of the life sciences, initiatives for sharing information through networking distributed databases have emerged, operating both on a global scale (such as the consortium for Common Access to Biological Resources and Information (CABRI), connecting world wide microbiological resources) and in

more focused networks (such as the European Human Frozen Tumour Tissue Databank (TuBaFrost)). From a governance perspective, these networks face increasing pressure from the development of global markets. In particular, the introduction of new standards of intellectual property protection during the last twenty years has had a profound impact on the sharing of data and resources in the field of the life sciences. Two of the most influential and widely debated changes in this context are the 1980 Bayh–Dole Act in the US (Rai and Eisenberg 2003) and, more recently, the 1996 EU database directive 96/9/EC (Reichman and Uhlir 1999). The Bayh–Dole act explicitly gave universities the right to seek patent protection on the results of government sponsored research and to retain patent ownership. As a consequence, in the period from 1980 to 1992, the number of patents granted per year to universities in the US increased from fewer than 250 to almost 2700 (Rai 1999, p.109). The EC database directive 96/9/EC was a landmark decision that lowered the standards of eligibility to database protection. Indeed the database directive offered copyright protection to databases that were original in the selection or the arrangement of their contents, but also to non-original databases if it could be shown that there had been a substantial investment in either the obtaining, the verification or the presentation of their contents. This extended protection to library catalogues for instance, but also to biological information facilities that network existing databases.

These rulings have to be situated within the wider phenomenon of the globalisation of intellectual property rights that has accompanied the genomic revolution in the life sciences and the digital revolution in information technologies. This new context has played a key role in stimulating innovation and new market developments in the life sciences. However, it is also posing a challenge to life-science research for public purposes, as the research communities have to adapt their strategies and design new institutional arrangements to allow them to provide services of general interest in an increasingly competitive and international environment.

In this paper, I will analyse the models for the institutional design of information sharing in the context of global intellectual property rights. In particular, I will rely on contemporary insights from new institutional economics that show the necessity of developing new forms of collective action to deal both with the insufficiencies of market solutions and the limits of the new forms of public regulation, in the context of the construction of a research commons for scientific data (Reichman and Uhlir 2003, Hess and Ostrom 2003, 2005a). Even though a purely economic interpretation of these propositions is possible (ie as a mechanism to cope with market externalities and to economize on transaction costs), we would like to focus on their contribution to a more reflexive construction of the information society. From that point of view, the accent will be on the reflexive role of these collaborative arrangements, as a second order mechanism contributing to the building of common understandings and strategies amongst the actors and the users of the new technologies. This notion of reflexivity is an extension to the field of the Internet of the conception developed by Ulrich Beck in his analysis of the reflexive evolution of technical modernisation. In his sense, "reflexive" does not only mean the way in which the social context of an activity (here the new social challenges raised by the developments in genomics and

information technologies) has an effect in return on this same activity, but also, as it is the case with U. Beck's notion of "reflexive modernisation", the way in which this "reflexive feedback" can cause a reconfiguration of the normative orientations and cognitive background beliefs that guide the actors and institutions (Beck, 1997 : pp. 11-19). So the focus is both on the feedback of the actors in the different specific actor settings and on the building of common background beliefs and understandings across the specific actor communities. Our contribution to the study of reflexive processes in this paper is to contribute to the institutional design of reflexive governance in the field of the information society through a specific case study in the field of microbiology.

In the rest of this paper I build upon the proposals for information sharing in order to elaborate a framework for the analysis of institutional choice in the field of the microbiological information commons. In the first part I develop a model to describe the transaction situation and then discuss different institutional solutions that have been proposed to cope in a cost-effective manner with the incentive problems in the field of micro-organisms[2]. In the second part I argue that it is necessary to complete this analysis of *"optimal institutional design"*, which favours economic incentives through the allocation of intellectual property rights, with an analysis of the institutional dynamics which takes in to account the reflexivity of the actors and the users on the new technologies.

# 1. Setting the stage: the transaction situation and governance models

Data sharing of microbiological information is essential for the quick translation of research results into knowledge, products and procedures and to improve matters of general interest such as the sustainable use and conservation of biodiversity. At present the widespread national, international and cross-disciplinary sharing of research data is not merely a technological matter, but also a complex social process in which researchers have to balance different pressures and interests. Purely regulatory approaches to data sharing are not likely to be successful without consideration of these factors, as technology itself will not fulfil the promise of e-science. Information and communication technologies provide the physical infrastructure. It is up to national governments, international agencies, research institutions and scientists themselves to ensure that the institutional, economic, legal, cultural and behavioural aspects of data sharing are taken into account (Arzberger *et al.* 2004).

The key players, providing the infrastructure for the sharing of microbiological information, are the organisers of the biobanks and culture collections, who organise the collection, conservation, curation and exchange of biological resources and

2 The world of micro-organisms, or microscopic organisms, includes bacteria and archaea, yeast and fungi, and unicellular animals (protista). In practice however, the term micro-organism also refers to microscopic parts of organisms, such as plasmids, phages, DNA probes, plant cells and viruses, and animal and human cell lines.

related data. Those collections are an outgrowth from the conventional pre-genomics *ex situ* collections of biological materials that have progressively developed into multi-service facilities called biological resource centres (BRCs). The concept of BRCs was proposed in an influential OECD report in 2001, which defines them as 'service providers and repositories of the living cells and genomes of organisms, and information relating to heredity and the functions of biological systems' (OECD 2001, p. 11). As such, BRCs contain 'collections of culturable organisms (e.g. micro-organisms, plant, animal and human cells), replicable parts of these (e.g. genomes, plasmids, viruses, cDNAs), viable but not yet culturable organisms, cells and tissues, as well as databases containing molecular, physiological and structural information relevant to these collections and related bioinformatics' (*ibid.*). While a BRC is a collection of resources from any origin, including human, the term 'biobank' refers more particularly to organised collections of biological samples of human origin and the data associated with them[3]. Like BRCs, biobanks come in many different forms, according to the type of samples that are stored and the domain in which they are collected.

Many different initiatives for sharing knowledge through databases, which gather knowledge from different fields of microbiology, exist. These include the CABRI and TuBaFrost networks mentioned in the introduction, and the ongoing Global Biodiversity Information Facility (GBIF) project[4]. These networks face increasing pressure from the development of global intellectual property rights, which has lead to competition for the ownership of previously shared resources. At the same time, the role of the state in the provision of services of general interest, such as public collections and databases, is gradually shifting from direct intervention to regulation of markets or quasi-markets. In the context of this new situation, cost effective access can, for example, be guaranteed by the state by the introduction of a general research exemption for database access for non-commercial research. In a similar manner, the exchange of biological material can be regulated through compulsory clauses in the contractual arrangements for the exchange of biological material, specifying the origin of the resource and/or prior informed consent.

From an economic point of view, microbiological information has been characterised as being part of the public domain (Oldham 2004, p.59, Williamson 1998, pp.9–11, Smith *et al.* 2004), implying appropriate public and regulatory institutions for guaranteeing its provision. However, this characterisation is very broad and, as has been shown in recent research (Kaul *et al.* 2003), the notion of the public domain covers a heterogeneous set of transaction situations and incentive problems, which demands a more fine grained approach.

For these reasons I will focus on the following questions:

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3 There are, for example, many facilities in the field of cancer research that initially only conserved cancer cell lines, but which have reorganised themselves as integrated service providers on the BRC model . A good example of such a reform is the European network of blood cord facilities coordinated by Prof. Paolo Rebulla at the Ospedale Maggiore in Milan.
4 cf. www.cabri.org and www.gbif.org

(1) Wht are the characteristics of the good that is exchanged and the related incentive problems for the provision and use of this good (Section 2.1.)?

(2) What institutional solutions for dealing with these complex incentive problems are currently being proposed (Section 2.2.)?

## 1.1. Microbiological information as a common pool resource

In general, goods that fall into the public domain – or what is often called in the legal literature the 'commons' (Lessig 1999, Benkler 1998) – are characterised by non-exclusiveness in consumption (Kaul *et al.* 2003, p.79). This means that the public domain covers a broad set of phenomena where multiple users share a resource in some way (Hess and Ostrom 2005a, p.1). A useful distinction in this broad category of the commons, allowing a better understanding of the incentives that lead to practices of information sharing, is the distinction between public goods and common pool resources. Both are characterised by non-exclusiveness and hence sharing of resources. However, for public goods, the consumption of the resource by one does not diminish the possibilities of consumption by others. Paradigmatic examples are mathematical formulae, new ideas, technical standards or virtually unlimited natural resources such as the light of the sun. In contrast, in the case of common pool resources, the resource is available to all, but one person's benefit subtracts from the products available to others. This is typically the case for depletable resources such as forests, nature parks and clean air.

Individuals involved in the production of public goods face the problems of potentially perverse incentives related to the production process, such as the presence of people benefiting from a public good who have not contributed to its production (Hess and Ostrom 2005a, pp.3–5). For common pool resources, however, since subtractability applies, potentially perverse incentives exist both on the production and the consumption or use side (*ibid.*, p.3). For instance, all common pool resources are exposed to the risk of 'overharvesting' and pollution of the resource.

The microbiological information that is managed and exchanged through BRCs or global information facilities such as GBIF shows characteristics of both public goods and common pool resources. In Table 1, I have illustrated this distinction and the related incentive problems for three components of the knowledge commons: information as a non-physical flow unit that is exchanged within the collaborative networks; the physical flow units or artefacts through which the information is exchanged; and the resource system or facility storing the ideas and the artefacts (Hess and Ostrom 2003, pp.128–130).

| | Information facility | Information flow | Physical storage system |
|---|---|---|---|
| Type of good | Public good | Common pool resource | Common pool resource |
| Example | Contribution of information to a global biological information archive | Participation in the exchange of tumour tissue data | Common web server for storing images |
| Positive incentives | Visibility, public recognition, instant publication | Access to first-hand, high-quality information related to the data | On line verification of the diagnosis |
| Perverse incentives | Under-use: low visibility, lack of use | Misuse: use of the data without contributing to the flow, plagiarism, submitting low quality data | Pollution: storing redundant information that takes a lot of memory space |

*Table 1: Incentive problems for the public good and common pool resource aspects of the microbiological information commons*[5]

First, information as a non-material good stored in a facility clearly has the characteristics of a public good. It is a resource shared by multiple individuals in a non-exclusive way and it is non-depletable. The use of an idea by someone does not subtract from the capability of another individual to use the same idea at the same time. As such, in a similar manner to the self-archiving initiatives in the field of scholarly communications (Hess and Ostrom 2003, p.143), researchers who participate in building global biological information facilities are building a universal public good for which the more people who have access, the greater the benefit to everyone (*ibid.*). Positive incentives that play a role in self-archiving initiatives, such as the reduction in costs of publication and access, the scientific recognition and credibility that comes with public disclosure, the increased visibility of information, and instant publication and dissemination (Hess and Ostrom 2005a, p.5), have also been documented in the field of the microbiological information commons (Rai 1999, pp.92–95).

Second, information as a non-physical flow unit has also been characterised as a depletable resource and hence presents the characteristics of a common pool resource. Indeed, the value of information to users is not only related to the

5 Examples adapted from Hess and Ostrom (2005b), Table 1. For simplicity of presentation I have merged production and use incentives.

opportunities they have to access a stock or pool of accumulated knowledge somewhere in an encyclopaedia or digital repository, but also to the quality of the flow of the information. By exchanging the information, it is consumed, verified, completed and interlinked with other information. It is this complex process of exchange and quality management that makes the information valuable to the users of the common knowledge pool. Sustainable management of this flow depends on compliance with a set of rules, such as verification of the quality of information submitted to the common pool, appropriate citation of the source of the information, and cross-linking to the information generated by the users' communities in the field of knowledge concerned. Non-compliance with or violation of these rules harms the common knowledge base and can lead to the information flow drying up. The distinction between the stock of information and the flow is crucial in discussing the microbiological information commons, because of the increasing role of databases as a flow resource in the organisation of information exchanges.

As has been argued by Reichman in his work on database policies, the information contained in databases is both the input of the knowledge generation processes in the information economy and the output of former knowledge generation and innovation processes (Reichman 2002). Moreover, the use of the information in the microbiological commons often depends either on the possibility of linking databases back to 'local knowledge' (for instance knowledge about the behavioural properties of a resource in the environment or the laboratory) or, conversely, of testing a possible innovation path by confronting it with the downstream user communities.

Third, as mentioned above, sharing microbiological information through microbiological information facilities is a complex endeavour that also involves sharing physical flow units and information technologies. For example, providing taxonomic or genetic data to a common database such as GBIF requires the use of a common data format, at the level of both the encoding formats and the transmission protocols. These common formats and protocols depend in turn on the design and permanent evolution of appropriate software, specific to the common knowledge pool. Other non-exclusive resources that play an important role in the microbiological information commons are standardised technologies for the identification of biological resources and numerical identifiers for the persistent identification of the data throughout the process of data exchange with different user communities. Some of these resources (such as common standards) are non-depletable in nature, and can appropriately be described as public goods. Others (such as the bandwidth of the transmission infrastructure or the memory space on a common database webserver) are depletable, and should be considered as common pool resources.

To illustrate some of the incentive problems associated with the microbiological information commons as a common pool resource it is interesting to consider a concrete example, the TuBaFrost network[6]. This gathers data on high quality frozen tumour tissue samples with an accurate diagnosis, which are stored in major European cancer centres and universities, and makes it accessible and searchable through an uncomplicated query system on the Internet. The TuBaFrost database is

6 www.tubafrost.org (last visited July 2005)

published in the restricted public domain. That means that the project portal can be accessed without restriction, and that access to the search engine of the database is open to all users, on the condition that they register with the website. Control of misuse of the information is carried out through the registration protocol: anyone can register through a simple web-interface, if they provide their name, e-mail and the reason why they want to use the database. This allows *ex ante* verification of the users intentions and, by keeping track of the identity profiles, *ex post* control of misuse. Access to other tools, such as self-archiving and the exchange of tumour tissues, is reserved for full participants in the project.

One of the positive incentives for becoming a full participant in the production side is indirect. Through being involved in the generation of high quality information on tumour tissue samples, the partners expect to have first-hand access to a good flow of information from the data in question[7]. A key physical resource that is shared in the TuBaFrost project is the Nanozoomer, which allows representative histology images to be stored in a central database, enlarged 20x or 40x and accessed through the virtual tumour bank. The advantage is that, through the addition of images to the virtual tumour bank, diagnoses can be verified on line. However, this also creates a depletable resource to be shared, the disk space of the central database. Because of these different layers of resources to be shared, the organisation of the TuBaFrost network depends on the solution of a complex incentive problem. This involves both pure public goods (such as the information that is contributed to the stock of common knowledge) and common pool resources (such as the self-archiving facility and the Nanozoomer).

## 1.2. Institutional solutions to the incentive problems

In the previous section I discussed the perverse incentives involved in data sharing in the microbiological commons. In this section, I will analyse some of the collective arrangements that are currently being considered for organising data sharing in the microbiological commons, focusing more particularly on the role of property rights and contractual arrangements.

Institutional economics has clarified the role of well-defined property rights in helping to reinforce a long term perspective in the management of a resource and in stimulating investment in the design of institutional rules that can cope with incentive problems (Schlager and Ostrom 1993, Demsetz 1967). However, it is important to qualify this statement.

7 Conversation with the project coordinator, Peter Riegman.

| | |
|---|---|
| 1. Access | The right to enter a defined physical area and enjoy non-subtractive benefits |
| 2. Contribution | The right to contribute to the content |
| 3. Extraction | The right to obtain resource units or products of a resource system |
| 4. Removal | The right to remove one's artefacts from the resource |
| 5.Management/ participation | The right to regulate internal use patterns and transform the resource by making improvements |
| 6.Exclusion | The right to determine who will have access, contribution, extraction, and removal rights and how those rights may be transferred |
| 7.Alienation | The right to sell or lease management and exclusion rights |

*Table 2: The bundle of rights in the digital knowledge commons*

Numbers 1–4 are operational rights, numbers 5–7 collective choice rights. Source: Hess and Ostrom (2005a, p.14–15). Full ownership is only acquired by the possession of the full bundle of seven major property rights, which includes the right of alienation of the resource.

Firstly, well-defined property rights do not necessarily imply full ownership, nor *a fortiori* private ownership. As has been shown, well-defined rights to a good, such as a natural resource, can, for example, include exclusion and management rights attributed to a private organisation, while the resource itself remains in state ownership. In a similar way, data sharing through a data portal can imply the exercise of management and exclusion rights by an organisation, without the full ownership of the original databases necessarily being transferred to this entity. This is the reason that economists have analysed property rights as a 'bundle' of use and decision rights attributed to certain economic agents. Such a bundle of rights specifies a set of operational rights (the use that can be made of a resource) and a set of collective choice rights (who can decide on the future exercise of the rights over the resource). In their framework article, Hess and Ostrom (2005a) distinguish seven major types of property rights that are relevant for the digital knowledge commons (see Table 2).

Second, from the point of view of new institutional economics, property rights are considered in relation to the outcomes that result from the attribution of these rights to certain economic agents in a specific domain and a certain action situation. In particular, these outcomes depend on the effective institutional rules that are defined and enforced by the agents who exercise these rights. Property rights as such only authorise particular actions, but they still need a set of workable institutions to make them effective in a particular situation. The consequences of a set of property rights will hence depend on the cost and availability of institutional arrangements

that specify the exercise of the rights and the impact of the institutional arrangements on the actors' behaviour.

For instance, in many cases of exclusive-use goods, the exercise of private property rights has led to the most efficient outcomes. However in other cases, the costs implied in the exercise of private property rights (such as the creation and enforcement of rules for market exchange and contractual arrangements) can be too high and have to be balanced against alternative institutional rules and property regimes. Most importantly, this means that no 'one size fits all' property rights regime can be found.

In the field of microbiological commons, three main institutional solutions are discussed in the literature: a model of free dissemination and two models based on conditional deposits for commercial and non-commercial use. All three are based on a form of decentralised ownership and include a certain level of collective management and exclusion rights. Such an institutional arrangement for the governance of the information flow is in accordance with the results that have been obtained from case studies within the field of natural resource management. Indeed, these studies show that in order to deal with collective action problems within a common pool resource, there have to be common rules, at least for exclusion and management. These rules are necessary in order to delimit the boundaries of the common pool and impose graduated sanctions for non-compliance with the rules of use so as to prevent depletion of the resource.

### 1.2.1. Facilitating free dissemination with decentralised ownership

In a first model of data sharing, ownership – and hence the right to alienation – remains with the individual data providers. However the providers transfer a part of their management and exclusion rights to a common data portal. Some key features of this first model can be analysed through the example of the Global Biodiversity Facility (GBIF). In the GBIF, data is provided to a collaborative database from a variety of sources; the database in turn makes the data freely available to non-commercial users, as illustrated in Figure 1. The ownership of the data, and any related conditions on the use of the data, remain with the original providers. This means that GBIF does not assert any intellectual property rights to the data that is made available through its network. Moreover, all the data is made available on the terms and conditions that data providers have identified in the metadata. However, even if GBIF does not assert any ownership rights, each data provider transfers some of the management and exclusion rights to GBIF as specified in the Memorandum of Understanding establishing the organisation. This transfer agreement allows different incentive problems related to the governance of the information flow as a common pool resource to be dealt with:

When registering their services with GBIF, the data provider has to sign the GBIF data sharing agreement. This stipulates that the data provider will make reasonable efforts to ensure that the data are accurate and will include a stable and unique identifier with the data (Articles 1.4. and 1.5. of the *Data Sharing Agreement*).

The data provider has to be endorsed by a GBIF participant. GBIF participants are the signatories of the GBIF-establishing Memorandum of Understanding. Data participants maintain stable computer gateways (the data nodes) that make data available through the GBIF network. The GBIF participants maintain services that enable new and existing data providers in their domain to be integrated within the GBIF network (Articles 1.8. and 2.4. of the *Data Sharing Agreement*).

The GBIF participants empower the GBIF secretariat to enter into contracts, execute the work programme and maintain central services for the GBIF network. In particular, the GBIF secretariat may provide full or partial data to other users, together with the terms and conditions for use set by the data provider (Article 1.7. of the *Data Sharing Agreement*).

Using data through the GBIF network requires agreement to a *Data Use Agreement* when accessing the search engine. This agreement stipulates that users must publicly acknowledge the data providers whose biodiversity data they have used (Article 1.4. of the *Data Use Agreement*).

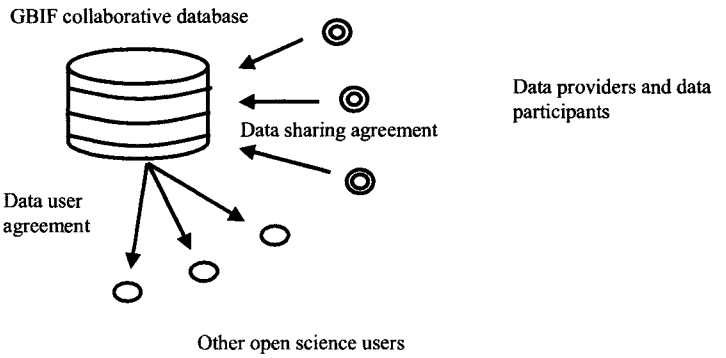


*Figure 1 : The GBIF model of data sharing (figure of the author)*

Through this collective arrangement, GBIF facilitates the free dissemination of biodiversity related data. In practice, GBIF pools data that is, in most cases, already in the public domain or that has been commissioned explicitly for public purposes and can receive a wider audience by being accessible through the data portal. Elsewhere, more sophisticated two-tiered models have been developed to satisfy both public research interests and commercial opportunities.

### 1.2.2. Organising the licensing of data through a collective license organisation

The GBIF model is probably not appropriate for all types of microbiological data sharing. Indeed GBIF focuses on biodiversity related data (including substantial

microbiological databases) but not on the wealth of microbiological data that is relevant for research but not directly relevant for biodiversity conservation purposes (such as plasmids, viruses or human cell lines for cancer research).

Moreover, certain types of data are relevant both for public research purposes and private R&D and would benefit from a more coordinated approach to the conditions of data licensing to commercial partners.

The report of an OECD working group on data sharing in neuroinformatics states some of the conditions under which a more stringent coordination of the conditions for commercial and non-commercial use of the database is called for. Indeed, for public domain databases and/or in the absence of collective management of the conditions of follow-on use, data sharing does not always guarantee credit to the researchers who originally produced the data, nor provide them with any reward if extensions to their work are commercialised (Eckersley *et al.* 2003, p.155). Moreover, it only provides weak protection against the broader problem of 'patent thickets' (*ibid.*, p.156).

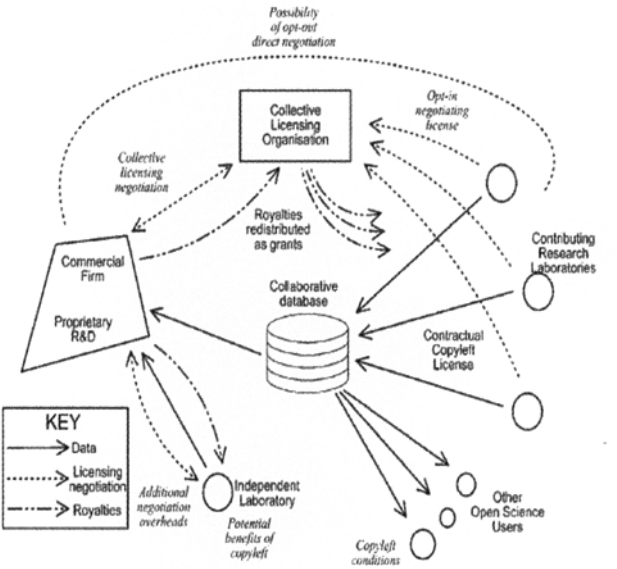


*Figure 2: A two-tiered system for data sharing based on the transfer of property rights to*[8]

8 Source: Eckersley et al. (2003)

Under these conditions, the OECD working group advised that different contractual conditions for access to the database be adopted for commercial and non-commercial use. In this model, which is analogous to the dual licensing model employed by some software developers[9], non commercial redistribution is permitted by a copyleft license[10], under the usual conditions of mentioning the source of the data (guarantee of credit). Commercial use of the data is permitted only when a specific contract that includes restrictions on this commercial use and specifies a license fee has been negotiated. Negotiating these ownership licenses could be the task of a collective licensing organisation administering the database (Figure 2).

### 1.2.3. Organising the licensing of data through agreed contractual templates

The proposals for a dual licensing model for neuroinformatics data sharing is in many respects similar to the conditional deposits model suggested by Reichman and Uhlir in the broader context of the sharing of governmental funded scientific research data. However, they consider a negotiated solution, rather than having recourse to a collective licensing organisation (Figure 3).

As Reichman and Uhlir point out, because of the potential problems of leakage (moral hazard) and enforcement (accountability) in collective licensing organisations, the data providers may very well balk at participating in collectively managed collaborative databases (Reichman and Uhlir 2003, p.433). Moreover, in the case of commercially valuable data, they might prefer to retain some autonomy in negotiating the terms of their private transactions and/or they might want to impose restrictions on the uses of the data for commercial purposes. Under such conditions, data sharing on the basis of a multilateral negotiated agreement is to be preferred. The core of Reichman and Uhlir's proposal is a common agreement on the contractual templates to be used in transactions with public or private partners. To succeed, 'these templates must be acceptable to the universities, the funding agencies, the broader scientific community, and the specific sub-committees – all of whom must eventually weigh in to ensure that academics themselves observe the norms that they would thus have collectively implemented' (*ibid.*, p. 439).

9 See, for example, the successful MySQL database software

10 Under a copyleft regime for software, all users have the right to modify and adopt the program freely, upon the condition that their resulting development is also made freely available for use and further adaptation. The proposal of the OECD working group is to use the same license provision for non commercial use of databases.

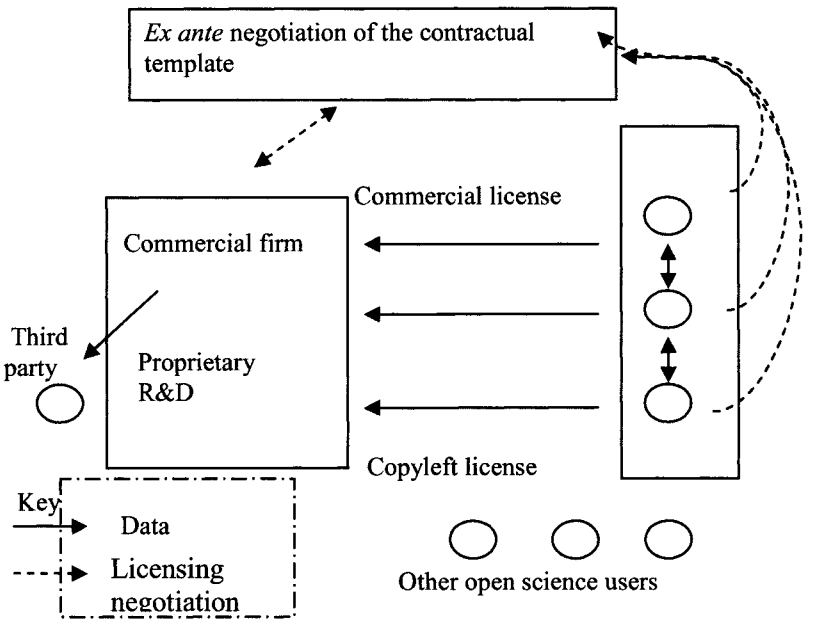


*Figure 3: Two-tiered system for data sharing based on a multilateral agreement on contractual template*

## 2. Enhancing dynamic efficiency

In Section 1 we analyzed different institutions for information sharing from the point of view of optimal institutional design. Indeed the rationale was to look for the optimal institutional design given a certain transaction situation. Nevertheless, as has been shown elsewhere, this static analysis of institutional choice has some important weaknesses (Young 2001, Brousseau 2000). In particular, in changing and controversial social contexts, no *ex ante* evaluation of the best possible institutional solution can be made. Further, even in the cases where one reasonably can make a trade off between the different "second-best" options, one still has to consider how to change the existing institutions in the direction of the new collaborative arrangements. For this reason several authors (Ostrom 1998, Eggerston 1990, Denzau and North 1994, Knight and North 1997, Rai 1999, Brousseau 2005) have tried to address specifically the problem of institutional dynamics. In particular, analysis has focused on the creation of incentives for institutional adaptation and innovation through reflexive processes of social learning and institutional

experimentation. I have illustrated this distinction between static and dynamic analysis in Table 3.

| | Addressed problem | Role of institutions |
|---|---|---|
| Static efficiency | Alignment of the economic coordination structures to the transaction situation | Optimisation of transaction costs through the (*ex ante*) definition of property rights and (*ex post*) supervisory mechanisms ensuring cooperative behaviour |
| Dynamic efficiency | Path dependent evolution of existing institutions, incremental transformation processes of institutions. | Sustaining the dynamics of innovation and adaptation through learning and competitive selection amongst a plurality of social valves |

*Table 3: Some key features of the difference between analysis of static and dynamic efficiency*[11]

Especially in a situation of complex global interlinkages, such as characterises the microbiological information commons, dynamic efficiency plays a key role in enhancing the effectiveness of governance arrangements. The viability of collaborative databases depends crucially on the enforcement of norms of cooperation and the presence of learning mechanisms that allow the emergence of common beliefs. For example, the introduction of new rules for intellectual property rights has lead to a decline in the sharing ethos of science communities, and hence new cooperative networks and norms have had to be developed to sustain the practices of data sharing. In other cases, important changes have occurred at the level of the beliefs of different actor communities. For example, the new concepts that

11 Source: adapted from Dedeurwaerdere (2005).

resulted from the work of the OECD working group on the relationship between bioinformatics and biodiversity were some of the key factors that allowed innovative partnerships to emerge between institutions having very different institutional policies at the outset.

In the field of institutional economics two important families of models have been developed for studying dynamic efficiency (Dedeurwaerdere 2005, pp.481–484). A first family of models, which can be called 'structural models', focuses on a set of cases where particular configurations of rules and norms have lead to sustainable outcomes and enhanced welfare (Ostrom 1986). From an in-depth analysis of the conditions for success of these configurations a set of 'design rules' can be defined for creating institutional incentives for enforcing norms of cooperation. A second family, which can be labelled 'process models', focuses on the historical processes of continual change in rules (North 1990). Here the aim is to analyse the conditions that have lead to an enduring dynamic interaction between rules and changing beliefs in a given transaction situation. Through this analysis, the goal is to identify any bottlenecks in the learning processes that have lead to suboptimal outcomes in the past (such as restricting the learning process to established interests or the absence of a clear institutional mandate for learning).

The distinction between these two types of models allows the double dynamic role of governance institutions in influencing the social context of the collaborative database initiatives to be identified: first, their role in enforcing the norms of cooperation within the network of actors in the self-governing collective arrangements; and second, their role in building a process of social learning geared towards common beliefs among different actor networks and institutional settings. In this section, I will argue for the importance of considering these two types of dynamic efficiency in the building of practical proposals for a more reflexive design of the information commons.

## 2.1. Organizing reflexive feedback from the actors on the institutional rules

The introduction of new rules governing the intellectual property rights resulting from governmentally funded basic research have had a major impact on the norms of the science community. First, the norms that characterise fundamental research (such as common cumulative heritage, independent inquiry and originality (Merton 1973)) now have to compete with norms of exclusion and profit raising that have gained ground in the research community. An oft-cited example is Blumenthal *et al.*'s (1997) survey of life science academics, showing that participation in industry-funded research is associated with a delay in publication of research results by more than six months, because of intellectual property rights' issues.

The design of self-governing collective action institutions also has to take into account this changing social context. Under conditions of changing norms, any proposed set of institutional rules will affect the norms of the actors concerned; hence a linear relationship between a given set of rules and their outcomes can no

longer be established. Under such conditions, comparative analysis has proved useful in studying the interaction between rules and their social context. As has been shown by research on common pool resources, focusing on effective 'social possibilities', where particular configurations of rules and norm have lead to sustainable outcomes and enhanced welfare, allows a set of robust design rules that are common to the successful endeavours to be defined. This structural methodology has also proved useful in the field of knowledge commons. In their seminal research, Hess and Ostrom (2003, 2005a) showed that some features of this comparative analysis could be adapted for the study of the new digital knowledge commons. For instance, a report by the Research Library Group and the Online Computer Library Center, cited by Hess and Ostrom in their initial paper (2003), defines the required actions and rules for creating successful cooperation in the particular case of trusted digital libraries as being: (1) audibility, security, and communication; (2) compliance and conscientiousness; (3) certification, copying controls, and rule following; (4) backup policies and avoiding, detecting and restoring lost/corrupted information; (5) reputation and performance; (6) agreements between creators and providers; (7) open sharing of information about what is being preserved and for whom; (8) balanced risk, benefit, and cost; (9) complementarity, cost-effectiveness, scalability and confidence; and (10) evaluation of the system's components (*ibid.*, p.144). These principles illustrate the design rules for enhancing cooperative behaviours and system resilience that are needed to sustain the global knowledge commons. Further comparative analysis is needed to gain insights into the specific design characteristics of data sharing in the digital environment.

One of the most sophisticated attempts to do this in the field of microbiological commons, is the empirical research of Arti Rai on intellectual property rights and the norms of science (Rai 2005). In her comparative research on data-sharing initiatives, Rai has shown the importance of reputational benefits as a key factor in determining the viability of these initiatives in a highly protectionist intellectual property environment. More precisely, relying on cross-field case studies in both open-software and biotechnology, her analysis showed that the chances of self-governing collective action initiatives for data sharing succeeding is highest where reputational effects are large and the capital input that is required for participating in the data sharing is very small. A case in point is the success of open-source software. In this case, the transaction costs for establishing reputional mechanisms remain low, because the information inputs of large numbers of individuals can be readily evaluated and integrated in the on-line environment. At the same time, volunteers do not have to invest any resources other than time in participating.

An important example of data sharing in the field of microbiology that complies with this model is the Public Sector Intellectual Property Resource for Agriculture (PIPRA) consortium for agricultural biotechnological research for developing countries[12]. In this consortium, 21 non-profit institutions (mainly universities) and the US Department of Agriculture have committed themselves to articulating a non-restrictive licensing policy for research oriented towards the developing world. One important policy tool that this consortium aims to promote is the systematic preservation of the availability of intellectual property rights for research related to

12 www.pipra.org (last visited July 2005).

developing countries when licensing technologies to the private sector. According to Rai, this is a good example of a case where the expected reputational benefits outweigh the potential financial loss from data-sharing policies. Indeed, as stated by Roger Beachy, one of the initiators of the consortium, '[a]lthough there may be a modest financial cost of taking such a position, the potential benefits in terms of regaining public trust, and ultimately of deploying technologies where they may be needed most, far outweigh the financial or opportunity costs' of low commercial value (Beachy 2003, p.473). A related example in the field of biotechnology research is a consortium for marker-assisted wheat breading (Rai 2005, p.301). This consortium manages a website that contains research protocols and marker sequences that can be freely accessed and used by researchers all over the world.

These cases of low commercial value present the clearest similarities to the free software model of data sharing. By extension, reputational benefits could also enable data sharing, where there is great uncertainty over the commercial-value of research output into microbiology. Here the paradigmatic case is the Human Genome Project, where academic scientists, working with the US National Institutes of Health, agreed not to seek property rights to raw human genome sequence data. As argued by Rai, the presence of potentially high reputational benefits for the universities involved played an important role in the success of the Human Genome Project. Moreover, in this context of uncertain, but potentially high, value, the likelihood of gain from strategic behaviour is lower than in the context of research of high commercial value. By contrast, another initiative for data sharing, the multilateral agreement on non-restrictive material transfer agreements between Technology Transfer Offices, UBMTA[13], failed to generate the expected benefits. In this case, unlike the scientists working on the Human Genome Project, the university technology transfer offices were motivated in significant part by the desire to increase licensing revenue. Hence reputational effects played only a minor role.

## 2.2. Building common understanding

A second family of models for studying the dynamic relationships between rules and the social context focuses on the historical processes of sustained adaptation of rules (North 1990). Here the aim is to analyse the conditions that have lead to an enduring learning process.

Process of social learning about conflicting beliefs also play a key role in the field of microbiological commons. Some particularly difficult issues which are the subject of continuing discussion are the protection of traditional knowledge, the regulation of pre-CBD (the Convention of Biological Diversity) resources, and the most appropriate transmission and identification protocols to be used in data sharing. For instance, on the issue of pre-CBD resources, some people argue that the rules governing the flow of resources should focus on modern germplasm exchange,

13 UBMTA stands for the Uniform Biological Material Transfer Agreement. This is a voluntary agreement reached in 1995 between university technology transfer offices from more than 100 institutions in the USA. However its success was limited.

related to contemporary needs and interests, and that these rules cannot apply to flows of resources from the pre-genomic era which no longer exist (Fowler 2004, p.51). Others point to the importance of returning equity to countries of origin, especially in the case of biogenetic resources associated with traditional knowledge, or, more simply, to the potential usefulness of the repatriation of certain resources to the provider countries as a means of capacity building or strengthening the links between scientific institutions in developing and developed countries (Muller 2004, pp.38–40). On the issue of transmission protocols for data sharing, the discussion about the appropriate standard for global data sharing among competing systems (such as Darwin Core or ABCD) is also a complex issue, especially because of the variety of different types of resources that can be exchanged.

The adoption, by a sufficiently broad range of economic actors, of common institutional rules for data sharing will depend on organising learning processes that supersede these antagonistic beliefs about the most appropriate action. Within new institutional economics, the influence of beliefs on the behaviour of economic actors has been modelled in terms of their influence on the change in the perception of action opportunities. In terms of rational action theory, beliefs influence the actors' behaviour through modifying the weights attached to the different outcomes in the pay-off matrix. According to North (1995, pp.25–26), dynamic efficiency in a context of changing beliefs is determined by a flexible institutional matrix that organises learning process in a way that allows the economic actors to perceive new action opportunities. These new perceptions in turn create an incentive for the actors to engage in a process of 'incremental modification of economic and political rules' (*ibid.*, pp.23–24). For example, organising a learning process between private companies and local communities on the role of traditional knowledge in local innovation can help to overcome misunderstanding and opportunistic behaviour and lead to new partnerships being developed around issues of common concern.

However, in a situation of controversy over the validity of the antagonistic beliefs, it is not possible to decide *ex ante* which learning process will produce the optimal outcomes. Hence, a better way of studying the dynamic efficiency of changes in beliefs is to compare historically successful cases of dynamic interaction between rules and beliefs. This method is at the heart of North's study of economic history, and has more recently also been applied successfully in the study of the regulation of climate change and pollution control (Haas and McCabe 2001, Haas 1990). Examples of successful design principles that emerged from these studies are the independence of the learning process from the policy process, the importance of an institutional mandate in the learning community (*ibid.*) and the participation of the widest possible community in the learning process, so as to prevent vested interests blocking progress (North 1995).

An interesting example of a successful case of learning within the field of microbiological commons is the role of the OECD in the establishment of the Global Biodiversity Facility (GBIF). The idea of creating the GBIF developed from the discussions organised in the context of the OECD Megascience Forum[14], an intergovernmental forum where scientific ideas can be exchanged and consensus reached on the best way either to acquire new knowledge or to take advantage of a

14 Now called the OECD Global Science Forum.

significant scientific development (James 2002, p.5). The discussions that led to the GBIF took place in the Working Group on Biological Informatics between April 1996 and September 1998[15] and allowed new ideas integrating the concerns of two related communities (the established conservation community on the one hand and the emerging bioinformatics community on the other) to develop. As a result of the recommendations of this Working Group, an Interim Steering Committee was set up in 1999 under the auspices of the OECD ministers, which finally lead to the establishment of the GBIF in autumn 2001.

The learning process that led to the GBIF can be characterised by: (1) the existence of an explicit institutional mandate, through the OECD, for developing new knowledge among different communities; and (2) a certain degree of independency of the learning community from the policy process in the different member countries[16]. The criterion of independence seems to be very important in the case of the GBIF. Indeed, the initiators of the GBIF insisted on the importance of establishing its secretariat as an autonomous legal entity. This secretariat has been given the task of elaborating its own working programs for coordinating data sharing in the field of biodiversity. The GBIF recently enlarged its operations to civil society organisations by opening its data portal to the dissemination of the results of the yearly bird count in New York and Berlin's Tiergarten.

The real stake however, in the field of microbiological commons, is to establish learning processes that can generate a common understanding of the issues involved in organising the conditions for downstream use of data and/or the related biological resources. The GBIF is an interesting example of a learning process, because it is an adaptive organisation and provides some insights into the design rules for dynamic efficiency. However, as stated earlier, it leaves both the ownership rights and the decision rights on the conditions of use of the data and/or the resources to the original data providers. Some institutional learning on the issue of downstream applications is already occurring in other organisations, for example in the 1997–98 Working Group of the US National Institutes of Health (NIH) on the transfer of proprietary research tools in biomedical research. However this and other examples are only organised on an *ad hoc* basis. More research is needed on the functioning of successful and unsuccessful instances of enduring processes of interaction between

15 The report was published in January 1999. In it, the Subgroup on Biodiversity Informatics of the Working Group on Biological Informatics recommended the establishment of an international coordinating body and a new data network called the Global Biodiversity Information Facility.

16 These characteristics are also found in other well-documented historical examples of institutional learning, such as climate change, where the Villach Group played a key role in the organisation of an enduring learning process. This group was composed of international climate scientist who worked on the basis of an institutional mandate from the UNEP Secretariat in the wake of the 1992 Rio Conference. In 1993 the Villach Group was transformed into an intergovernmental panel. It became increasingly susceptible to policy pressure and lost some of its credibility in the second half of the 1990s (Haas and McCabe 2001).

beliefs and rules, so that we can adapt our knowledge of design rules from other fields to the field of microbiological commons.

## Conclusion

The aim of this paper is to contribute to building a framework for reflexive governance in the field of the information society. The hypothesis is that new institutional economics as an interdisciplinary research program can provide some of the necessary tools for this framework and help us to understand how to embed in institutions of regulation the reflexive feedback of actors and users on the social challenges of the new technologies.

In this paper, we developed a specific case study on the building of a microbiological commons, because of the leading role of this field in the development of institutions for reflexive involvement of the actors and users on the social challenges of the new technologies. Our focus in this case study is on the way this reflexivity can be embedded in the institutions that are created by the concerned actors to organize global information sharing.

In the first section, I have argued for the importance of considering the microbiological information commons both as a public good and as a common pool resource. This point is important in order to understand the importance of self-governed actor initiatives for building and preserving the information commons, beyond pure government initiative or market rule. As an illustration, I considered more closely the successful endeavours of the Global Biodiversity Information Facility and the proposals for a two-tiered regime for governing the conditions of follow-on use of the data and related biological resources.

The institutional conditions analysed in the first section already show the importance of the involvement of the actors and users in the design of institutions in the field of global information sharing. In the second section, we use these results to analyse the problem of institutional dynamics. Our analysis in this second section has shown that institutional innovation and adaptation can be organized through a double reflexive mechanism. A first mechanism, which has been illustrated through the case studies on the human genome project, open software and scholarly information, focuses on the embedding of institutional rules in self-organised cooperative actors' networks. Reflexivity is organized through a feedback of these actor networks on the proposed institutional change. A second mechanism focuses on the long term process of change in the background understandings of different actor networks and institutional settings. Here reflexivity is organised through an institutional setting that favours the learning of new common understandings and normative frameworks, such as in the case of the OECD working group that has lead to the creation of GBIF.

The main argument of the paper is the importance of taking into account the dynamic interaction between the creation of new institutions and the changing social context of norms and beliefs. As I attempted to show, this implies going beyond the problem of static efficiency, which is concerned with the allocation of a set of institutional rules to obtain the desired behavioural outcomes. Indeed, there is no *ex ante* optimal solution for institutional design in situations of changing norms and

controversial beliefs. However, through comparative research, a robust set of design rules can be defined for embedding reflexivity in institutions, enforcing norms of cooperation and fostering the emergence of common understandings.

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# The Internet : New principles of political right, new social contract[1]

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**Abstract:** The Internet is now at the crossroads of the information and media spheres, at the juncture between private and public areas. Since the '90s, with the widespread use of the *web* and the domain name system the power to name, to identify, to search and to retrieve data on the Internet includes a deep societal and ethical dimension. Therefore one could identify multiple regimes of "*governmentality*" of the Internet following the track of the studies initiated by Michel Foucault. In fact, not so much the governance of the Internet but how the Internet governs the world. As a background of further analysis and researches the recent two Summits on the Information Society organised by the United Nations and held in Geneva in 2003 and in Tunis end of 2005 have agreed on a series of texts in form of Declaration of Principles, Plan of Action, Commitment and Agenda for the next five years*. In this context an impetus will be given to the bottom up "*multistakeholders*" approach. This will only be achieved if ethics, value and principles are put forward at the same level as any process of reflexivity. It is clear that the ambition and prospect of these texts and of the Agenda would need in order to be effective and implemented the formalization of common agreed principles and to set up adequate international instruments. In short this would imply a new *social contract* for the digital world.

**Keywords:** governance, governmentality, democracy, common good, sovereignty

[1] The opinions expressed in this text are those of the author and do not necessarily reflect the position of the European Commission.
Documents are available at: http://www.itu.int/wsis/index.html

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"The media transforms the great silence of things into its opposite. Formerly constituting a secret, the real now talks constantly. News reports, information, statistics, and surveys are everywhere" **Michel de Certeau** [2]

The Internet is now at the crossroads of the information and media spheres, at the juncture between private and public areas. From the outset, the *network of networks* has been engaged in ontological ambiguity: the need of government for secrecy and security but also the social demand for inclusiveness, freedom of expression and autonomy. Since the '90s, with the widespread use of the *web* and the domain name system as a universal identifier, a commercial, merchant mind-set has been adopted, without weighing up the principles of law and regulatory adjustments required for this transformation. However, denomination, the power to name and to identify on the Internet includes a deep societal and ethical dimension.

Furthermore, considering the animation, management and coordinating functions of the network, it would be possible to identify specific regimes of "*governmentality*" of the Internet following the track of the studies initiated by Michel Foucault. This has not been sufficiently explored. In fact, not so much the governance of the Internet but how the Internet governs the world.

Thus, the current *"governance"* of the Internet could be seen as an imperfect form of social regulation, a multiple "staircase world", would have said Gilles Deleuze, in which each landing would be suspended from its own legitimacy and unique method of organisation, irrespective of any overall coherence or hierarchy. Accordingly, there would be a constellation of many "Internet" models, operating isolated, in tandem or in multiplicity, while mapping our forms of life: the new economy, electronic commerce, on-line democracy, the digital divide, the network infrastructure, free exchanges, freedom of expression, protection of personal data and trade marks, encryption, security, etc. Up to now there is no agreed framework of values and principles for the Internet.

# I Governance, governmentality and consensus

It should be remembered that at international level, recognition of the Internet has been achieved by the regulation of a technology. It consisted of specifying and stabilising, through an organisation, the IETF (Internet Engineering Task force), assisted by the IAB (Internet Architecture Board), the series of Internet technical protocols established in the '60s by the ARPANET network, at the instigation of the American Agencies concerned, mostly DARPA (Defence Advanced Research Projects Agency) and NSF (National Science Foundation).

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2 de Certeau, Michel."The Practice of Everyday Life", Ed. John Storey.NY, 1994

This process took place outside the traditional information technology standardisation process and progressively achieved the consensus of the world community of researchers and developers with the financial support of the industries concerned. The system is still operational and functions effectively.
In reality, the process has not given rise to any specific legislation: the IP protocols, which became *de facto* standards and PAS (*Public Available Specifications),* have been swallowed up in a general movement towards open standardisation.

At the same time, the physical infrastructure of the networks, initially borne by the American agencies, universities and research centres such as CERN in Europe, has been taken up by the computer, telecommunications and now media industries world wide.

## The emergence of regulation challenges

In 1997, the Clinton administration wanted to transfer the management of the DNS system to the private sector. The main reason for this was the need to put an end to a *de facto* monopoly, particularly as regards the management of generic domain names (.com), which appeared to contradict the aims of transparency and openness to competition. But also, with the widespread use and commercial success of the *web,* the American authorities thought it would be opportune to obtain consensus on the detailed rules of the phenomenon from all interested parties.

The approach was based on two principles: 1) recognition of the function of switching the Internet to a global scale and ii) the need to ensure enduring stability of the system. These two requirements, still provided by the supervision of the American administration, rely on a three-pronged mechanism: 1) the domain names system (DNS), 2) the allocation of IP addresses by regional registers, 3) the consortium of the 13 route servers which are still administrated and financed on a voluntary basis.

The discussions which opened in 1998 at the time of the American government's Green Paper, followed by the White Paper, enabled the European Union to have an influence on the process of creating ICANN at the time it was launched.

Thanks to the action taken by the Commission and Member States, general principles, this time of a legal and not technical nature, were put forward: the applicability of international law – internationalisation of the system – opening up the DNS system to competition. Moreover, a consultative committee of governments (GAC) was appointed to ICANN to highlight the objectives of public policy and those of the international community of states.

In actual fact, the entire system is still a project led by the American authorities, in particular by the Department of Commerce, which exercises direct supervision over ICANN and the route servers' system.

Within this legal framework, as from the end of 1998, ICANN entered into a series of agreements with the American authorities and NSI/Verisign which had a monopoly over generic domain names. It should be noted that the initial Memorandum of Understanding of 1998 between the US Department of Commerce

and ICANN, which has been several times extended, has recently been renewed for another 3 years as from 29 September 2006. This agreement has confirmed that the path to full privatization of the management of DNS and IP resources seems open: "*The Internet Corporation for Assigned Names and Numbers (ICANN) today signed a new agreement with the United States Department of Commerce (DOC) that is a dramatic step forward for full management of the Internet's system of centrally coordinated identifiers through the multi-stakeholder model of consultation that ICANN represents*"[3].More specifically the responsibility for the technical management and the transfer of technical functions that were previously operated by the IANA has been gradually being devolved to ICANN and has recently been confirmed for another period of five years.

As quoted by analysts of the "Internet Governance Project"[4], the new agreement replacing the former MoU, "renamed a Joint Project Agreement (JPA), is a response to the comments received by NTIA during its Notice of Inquiry in July 2006. The object seems to be to strengthen the public's perception that ICANN is relatively independent". The analyst added that "one of the most important issues ICANN is considering at the moment is the relationship between domain name registration data (the Whois service) and individual privacy rights. The new agreement orders ICANN to "enforce existing Whois policy" which requires that ICANN maintain "timely, unrestricted and public access to accurate and complete Whois information".

ICANN's legal set-up must be put into perspective. It is really a matter of granting delegated powers rather than truly decentralised powers. The applicable law and appropriate jurisdictions are essentially under a North American system. The agreements and contracts are concluded by an organisation under Californian jurisdiction, responsible for managing a public resource and for services of general interest to the international community. In particular, the legal system of contracts to be concluded with national domain name registers (ccTLDs) raises problems that the international arbitration procedures will not always be able to resolve.

More generally, the transfer and use of data between all "actors" in the DNS (ICANN, Regional Internet Registries (RiRs), names registries, registrars, ISPs, etc.) raise a number of issues that are not easy to clarify and to solve legally speaking. However, if there already exist a great variety of legal provisions at national level and adequate procedure for litigation of domain names set up by the World International Protection Organisation in relation with ICANN (Universal Dispute Resolution System), it is clear that an international legal framework will have to be agreed soon or later for the Internet.

3 See at: http://www.icann.org/announcements/announcement-29sep06.htm
4 See at: http://www.internetgovernance.org/

# II Tension between unity and plurality

## Placing the technical standard in a social context

It should be pointed out that the procedure for creating and running ICANN shows a loss of the traditional reference points of political science and economic regulation. Since the 1998 White Paper, an artificial "consensus" culture has been promoted, which is presented as giving incontrovertible legitimacy to a particular mode of governance. In accordance with a consistent process in the Internet communities, the search for an impossible consensus leads to favouring the dynamics of judgment and persuasion of the actors. Here, for the DNS and ICANN, the system has been introduced to the advantage of some industries and not with the aim of encouraging the management of a common good for the benefit of the greatest number. Gradually, ICANN has allowed the establishment of a speculative and uncontrolled market for domain names and IP addresses, reflecting the economic value of what needs to be treated as a resource, a common good, that is necessarily scarce and of public interest.

## Towards an Internet law, as new political principles and a new social contract

The Vice-President of the Conseil d'Etat in France, Renaud Denoix de Saint Marc[5], identifying an inexorable progression of common law compared to civil law, invited to transcend the confrontation of these two families of law. It could be useful, so far as concerns the Internet, to examine the possibilities of forming an hybrid corpus of principles with a view to a mixed law which would guarantee the concept of a common good forming part of the international community, which has always underpinned the establishment of the major infrastructure networks, whilst leaving the public and private actors independence of innovation and initiative.

The notion of common good, *bonum communis*, is not new in philosophy and international law. Since Thomas Aquinas the notion has been widely documented and developed as, for example, by Gaston Fessard[6], Jesuit and philosopher, who described three dimension of the common good: i) the good of the community, ii) the community of the good, iii) the good of the common good, i.e. the relationship between the person and the community. More recently David Bollier, the policy strategist and journalist, has developed a new paradigm for the commons. This was also the track followed by Lawrence Lessig, professor at Stanford, who has applied

5 DENOIX de SAINT MARC Renaud, in Le débat no 1115, Gallimard, May-August 2001
6 FESSARD Gaston, "Autorité et bien commun", Aubier, Paris, 1944.

the notion of commons to the Internet in several books, in particular in "*The future of Ideas*"[7].

At last, the dimension of names and languages used on the Internet is central to the access information and to communicate. The seminar "Vox Internet" led in France by Ms Françoise Massit-Follea organised in a joint effort by ENS-Lyon and FMSH in Paris has pointed out the importance of "naming the world" on the Internet[8]. The dominance of the English language as well as the growing islands of content in various idioms are the reality of the media of today.

It should be reminded, as a back ground of further researches that the various social and legal issues of the Information Society have been addressed in December 2003 and November 2005 at the Summits on the Information Society in Geneva and Tunis organised by the United Nations and related Agencies. Both Summits have agreed on a series of texts in form of Declaration of Principles, Plan of Action, Commitment and Agenda for the next five years[9]. It is clear that the ambition and prospect of these texts and of the Agenda would need in order to be effective and implemented the formalization of common agreed principles and to set up adequate international instruments. In short this would imply a new *social contract* for the digital world.

In this context an impetus will be given to the bottom up "*multistakeholders*" approach which was initiated at the occasion of the last two WSIS and will be extensively followed for the Internet Governance Forum (IGF). But this will only be achieved if ethics, value and principles are put forward at the same level as any process of reflexivity.

If the Internet is to be transforming the forms of life, in a scheme of representation of our lifestyle or an ontology of our future, such an approach would need, as Marc Maesschalck suggested when analysing the links between Bourdieu and Habermas, to initially deepening "*the relations between the theory of social action and a comprehensive sociology of the world... as this explanation reduces the context of action to a function of a semantic background*"[10].

Therefore we are facing a strong social appeal, targeted at the international community, governments and society: how to first name the Internet and then to deploy universally the digital networks and contents for the benefit of all, understandable to all, accessible to all.

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7BOLLIER David "The rediscovery of the commons", http://www.bollier.org/reclaim.htm.

8 DELMAS Richard, "Langues et culture de l'internet", June 2005, first chapter of the Report Vox Internet http://www.voxinternet.org

9 Documents are available at: http://www.itu.int/wsis/index.html

10 MAESSCHALCK Marc, "La réduction du contexte chez Bourdieu et Habermas", Revue Philosophique de Louvain, Juillet 2003.

# PART 4 - APPLIED ISSUES:

# HEALTH, PROFESSION AND

# EDUCATION

# Introduction to part IV

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As human beings, we often like to ponder theory in a void. However, there is nothing more challenging that considering ethics in practice. This conference did not veer away from that challenge. Here the stimulus has been to choose two of the most important issues underlying today's Information Society – eHealth and eLearning – firstly, in whatever healthcare context that provision takes place and, secondly, whether that education occurs in the school, university, or pre-occupational context. These are the very precise 'applied issues' to which this chapter is directed.

eHealth is one of the mainstays of the Information Society. Since the 1960s initially, but particularly in the last decade and a half, eHealth has emerged from the domain of research and development into concrete deployment. Institutions and countries have dedicated more than a thousand million euros over more than a fifteen-year period to supporting research in this field (Olsson, Lymberis, and Whitehouse, 2004). The eighteen-step eHealth action plan published in a Communication of 2004, is now more than halfway complete (European Commission, 2004). The vast majority of the current Member States (European Commission, in press) now have eHealth strategies and actions. The Member States themselves are today exploring how to bring together their so far rather fragmented initiatives, challenged as they are by numerous provocations to provide good, accessible, high-quality, but also cost-effective eHealth (see eHealth conference 2007).

In a climate in which the provision of healthcare – especially cross-border throughout Europe – is being raised, this enhanced, sophisticated provision of systems and services begins to pose a set of questions that pertain to the legal and regulatory context surrounding eHealth. Efforts are currently underway to ascertain precisely what the key issues are – at a minimum, they cover data protection, product and service liability, and trade and competition (Herveg *et al*, in press). A particularly innovative approach can be to outline these provocative questions in the form of a series of case-studies or scenarios – this is the basis of the Legally eHealth study. Here, however, Herveg and Poullet follow a more conventional and lawyerly

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approach: they undertake a systematic testing of the main uses of eHealth against four independent criteria and, in particular, they draw on the work of the European Union's Data Protection Directive. They appropriately remind us, however, that many different stakeholders are involved in the eHealth debate: certainly, it includes many different health occupations but also patients and citizens themselves. All will require having a greater voice in discussing the mechanism of the 'trust circle' that surrounds the electronic health or medical record.

eLearning has also been at the heart of the development of the Information Society. Information and communication technologies have transformed the face of Europe's education systems. While twenty years ago, microcomputers were slowly being introduced into all three levels of education (Hirschheim, Smithson, and Whitehouse, 1990, p12), that shift is now complete at least in the mainstream of the European Union. But we should not forget that computers are all too often only available largely to those with wealth, privilege, and education (Demunter, 2006).

The debate has become not so much about what, why or even how to teach computing skills but rather to teach it according to what underlying ethics? Neal's and Martens' two chapters provide very different solutions to introducing ethics into the teaching of computing. On the one hand, Neal tells the story of a codified approach, agreed to by a professional society over a considerable period of time, and complied with by the universities and relevant departments which are happy to be accredited in recognition of the quality and content of their programmes. Martens, on the other hand, outlines an approach which would appear to be at a more preliminary, even grassroots stage: creative, stimulating, and which uses new methods and methodologies – a more patchwork or *bricolage*-style approach. Not only are the secondary school children with whom Martens' teacher-trainees deal much younger than Neal's university students, but they are also ostensibly more adventurous and exploratory. With Martens, we are firmly embedded in the the notion that ethics can surely be approached and taught through dialogue and debate (Whitehouse and Duquenoy, 1998).

While these chapters draw on the work of researchers and scholars, one of the striking results of the dialogue that surrounded this conference's work was the meaning of computing in an applied setting, whether in eHealth or eLearning. Given that the conference attendees were indeed celebrating the work of an intellectual lifetime of a noted researcher and academic, one of the most thrilling interactions of the two days were the discussions with local people from the Namur area and with employees working in local Namurois and Walloon government. This mix of careers and backgrounds made for stimulating and challenging discussions about precisely what the Information Society means to us, to our families, to our children. It forced the academics present to acknowledge the benefits of creating such a heterogeneous mix of conference and workshop attendee. This kind of cross-disciplinary, cross-sectional, and cross-societal approach is one that is firmly held to by the Computers and Social Accountability working group, and especially one which underpins not only its working conferences but also its regular summer schools (Beardon and Whitehouse, 1990; Zielinski, Duquenoy, and Kimppa, 2006).

Finally, while it may appear curious that two out of the three chapters collected here come from Belgium, and the other from the United Kingdom, it is not so surprising since these two countries have long and established histories of concerns

for legal, regulatory, and ethical issues in the domains supporting the Information Society. Particularly where the notion of professionalism is concerned, the United Kingdom has an established context analysed in several of the International Federation for Information Processing (IFIP) books (e.g., Zielinski, Duquenoy, and Kimppa, 2006). Indeed, the man in whose honour the conference was launched is himself Belgian and has developed long and stimulating intellectual relationships with the Anglophone world. May Jacques Berleur's devotion to Computers and Social Accountability remain long a very dynamic source of stimulus and inspiration for events and dialogues such as this!

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# Which Major Legal Concerns in future e-Health ?

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**Abstract:** e-Health Policy faces a radical change of perspective in the development of new e-Health projects. Indeed these projects are no longer conceived as simple answers to well-identified and specific needs. Today they are part of an Infrastructure Policy that aims at the establishment and the operation of real information highways in healthcare. This paper tests the creation of these highways against four validity criteria: necessity, transparency, security and confidentiality, and quality.

**Keywords:** e-Health, Health Telematic , Infrastructure, Data Protection, European Law

## Introduction

**1.** e-Health is characterised by the use of Information and Communication Technologies in healthcare. These technologies have been used in healthcare in many ways for many years.

Using a first approach, e-Health is based on a large range of products dedicated to the management and the exploitation of information in healthcare. These products not only involve the software available in computers (1). There are as many products as there are types of information to manage and there are as many products as there are applications for which they are created. Information involves patients as well as the health practitioners, and information may be relative to all aspects of all activities

1 For example, they also include software in medical devices.

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involved in healthcare - such as the provision of healthcare, its organisation, control, public or private funding, development of new medical devices or medicaments, as well as scientific research. The best-known products are electronic medical records. The development of e-Health is even more critical since, for decades, there have been more and more accurate medical information available concerning the patient in an individual or a collective approach. Scientific progress includes blood analysis, genetic engineering, medical imaging, etc. At the same time, medical treatments are improving and tend to be less and less invasive.

Using a second approach, e-Health is growing because it is based on telematic infrastructures, notably the Internet or private telematic networks. The exploitation of these infrastructures in healthcare aims at improving the circulation of information to the benefit of all the actors of healthcare, such as practitioners, patients, researchers (whether from university, public or private research centres, pharmaceutical or medical devices industries, etc.), public or private bodies participating to the funding of healthcare and the quality control of healthcare services, etc. These telecommunication infrastructures provide the practitioners with the ability to collaborate through a network and to use, share or offer, special e-Health products and services. Therefore new platforms are created in view of managing these networks. Logically, in this context, beyond information websites in healthcare, these networks give the opportunity to new services such as telemedicine applications, ambulatory devices with telecommunication functions, e-Prescription, and all the other applications using new Information and Communication Technologies in order to provide assistance tools to medical prevention, diagnosis, treatment, monitoring and lifestyle. With respect to this, new tools appear such as Information and Communication technologies implants that allow better tele-monitoring or even efficient and effective telemedicine insofar they allow direct medical intervention on the human being through implant to be considered as terminal. The patient is definitively entering into the circle of health telematic networks.

**2.** These new e-Health products and services are relatively well-known today even if all their technical and legal aspects are not fully under control[2]. However, e-Health now faces a radical change of perspective. Indeed, so far, the creation of a telematic network or infrastructure was based on a specific need : the development of a new product or service in healthcare. But, today, telematic networks or infrastructure are conceived without direct reference to specified purposes. They are created in view of permitting the achievement of future purposes that are to be defined in a next step. These telematic networks represent a purpose in themselves. They are like highways for vehicles, or like infrastructures for gas, electricity or telephone. These new telematic networks or infrastructures are to the products and services in healthcare what pylons and antennae are to telephone products and services. We currently witness the birth of new but real information highways in healthcare in their uttermost complete vision.

In this context, e-Health projects aim to create telematic networks or infrastructure at local, regional, national, European, international, or even worldwide

2 Especially in the case of international aspects.

level. The establishment and the operation of these networks or infrastructures are beyond the usual sphere of influence of traditional healthcare actors, and far beyond their traditional activities. Indeed, these networks involve more and more technicians, intermediaries, and many other actors such as public and private bodies participating to public health policy and social security policy. Many motivations may explain the creation of these networks e.g. in terms of public health, patient involvement in healthcare, healthcare funding and control of the quality, scientific research, discovery of new medicaments or medical devices. These new telematic networks or infrastructures are articulated around the information relative to all healthcare actors, e-Health products and services and their special infrastructures.

But, once more, the difference with these new telematic networks or infrastructure, is that their novelty lies in the permanence of their structure regarding their present and future exploitations. The opportunity to create such infrastructure is not evaluated anymore in view of a single specific purpose to be achieved. Their opportunity is measured in an abstract way regarding categories of future purposes for which content will be defined later. There is a radical change particularly as regards the required precision and materiality to assess the purposes of telematic infrastructures and their future exploitations.

In other words, these new telematic networks are information systems composed of two levels. The first level is the infrastructure (generally including shared data bases through the collection and processing of personal data – such as identification registries of patients and practitioners). The second level is the future purposes to be achieved by means of the infrastructure. Therefore these projects are in fact part of a policy aiming to create telematic infrastructures in healthcare. They also express a move from vertical organisations in healthcare to abstract, horizontal and transversal approaches in a first step and then specific and vertical approaches in a second step. The mere existence of these new telematic infrastructures in healthcare will enable shared databases, and imply the identification of practitioners and patients through special dedicated registries, etc. Eventually, these networks will deeply modify the organisation of healthcare. Furthermore, all actors in healthcare are involved including healthcare practitioners, social security and public health bodies, laboratories, patients, etc.

It is not possible to cover all the legal issues raised by these new information highways in this contribution. But it seems useful to analyse them according tofour criteria : (I) necessity, (II) transparency, (III) security and confidentiality, and (IV) quality.

# I. Necessity

**3.** When one wishes to create information highways in healthcare, does one need to consider the necessity e-Health? Should the infrastructure be necessary to justify its creation and operation? From an ethical viewpoint, the question of the necessity to invest in this kind of infrastructure is quite mandatory since public and private resources are limited in healthcare. Logically, the creation of such information highways should correspond to real but imperative social needs. In this respect,

necessity should be assessed through multidisciplinary and rigorous experimental studies. In law, the notion of necessity may appear in different ways when creating and operating these new infrastructures in healthcare.

**4.** The notion of necessity may appear when the infrastructure is considered through the prism of the protection of the rights and liberties and especially regarding the right to respect for private life ([3]). Indeed, if a telematic infrastructure in healthcare and its operation may be viewed as an interference ([4]) by a public authority with the exercise of this right ([5]), this interference, according to article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms and according to article 7 of the European Chart of Fundamental Rights, should be in accordance with the law[6] and should be, in a democratic society, necessary [7] to "*(...) the economic well-being of the country (...) for the protection of health (...) for the protection of the rights and freedoms of others.*" Furthermore the right to respect for private life may induce the (positive) obligation for the Member State to adopt appropriate measures to ensure the respect for private life in the sphere of the relations of individuals between themselves[8]. This obligation could lead to the necessity to regulate private infrastructures in healthcare. In determining whether or not such positive obligation exists, regard must be had to the fair balance which has to be struck between the interest of the infrastructure and the interests of the individuals, without prejudice of the margin of appreciation to be accorded to the competent national authority[9].

**5.** The notion of necessity appears also when telematic infrastructures are considered through the norms applicable to the processing of personal data. Indeed, the United Nations provide that a file containing personal data should only be created and used for specific and justified purposes [10]. In the same way, Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement

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3 European Convention for the Protection of Human Rights and Fundamental Freedoms, art. 8.

4 On the notion of interference : E.C.H.R., 27 August 1997, M.S. c. Sweden, §§ 33-35 ; 4 May 2000, Rotaru c. Romania, § 46.

5 On the notion of private life : E.C.H.R., 4 May 2000, Rotaru c. Romania, §§ 42- 43 ; 26 Feb. 2002, Pretty c. United-Kingdom, § 61 ; 24 June 2004, Von Hannover c. Germany, §§ 50-52, and 61.

6 Furthermore, the law must be accessible and foreseeable (on the latter, see : E.C.H.R., 4 May 2000, Rotaru c. Romania, § 55).

7 The necessity justifies the interference. The notion of necessity implies that the interference corresponds to an important social need and in particuliar that the interference should be proportionate with its legitimate purpose (E.C.H.R., 26 Feb. 2002, Pretty c. United-Kingdom, § 70). The Member States enjoy a margin of appreciation depending on the nature of the issues and the importance of the interests at stake (id.).

8 E.C.H.R., Von Hannover c. Germany, § 57.

9 On the positive obligation and its conditions : E.C.H.R., 7 Feb. 2002, Mikulic c. Croatia, § 58.

10 Guidelines concerning competurized personal data files, adopted by the General Assembly on 14 Dec. 1990 (resolution 45/95).Cf. also article 8 of the European Chart of Fundamental Rights.

of such data provides that personal data must be collected for specified, explicit and legitimate purposes and not further processed in a way incompatible with those purposes[11]. To be legitimate or justified, the purpose must comply notably with the test of proportionality[12]. The later requires taking into account the necessity of the purpose of the infrastructure. In the same way, the notion of necessity appears in the principle of minimisation of the processing of personal data [13] which might be deduced from the data quality principle[14].

**6.** However these new telematic infrastructures cause a particular problem regarding the proportionality test. Indeed, since they constitute double-level information systems, the necessity of their creation and operating can only evaluated on an abstract base in the first place and on a real basis only after their exploitation. Put differently, their necessity will appear through their use. That is a risk to take into account at their beginning. This risk is not an impossible obstacle to the creation of these new infrastructures in healthcare. But it imposes a strengthening of the tools used to control their necessity, according to the safety precaution principle. In other words, these new infrastructures require special bodies and procedures in order to assess their necessity on a periodical base. With respect to this, this constraint is stronger with sensitive data like medical data.

# II. Transparency

**7.** Should these new telematic infrastructures in healthcare be transparent? Before answering this question, we have to agree on the significance of the "transparency" concept.From a general point of view, transparency translates into the idea that the data flows generated by these telematic infrastructures should be known and accessible to all. They may not be secretly created but in a public way. In the same idea, their functioning should be transparent and under control. That transparency should be assessed in a collective way in order to control human activities, as well as in an individual way to ensure the respect for the rights and liberties of all. With respect to this, the characteristics of these new infrastructures in healthcare reduce their transparency regarding their operation since the later is not known with precision at the beginning but only after their exploitation. On the other hand and principally, the transparency of each data processing is not sufficient. The infrastructure has to be known in itself, and the multiple data flows it permits should be known as well. Regarding the latter, the necessity of a data flows' registry would

11 D. 95/46/CE, art. 6.1.b. The Directive provides that further processing of data for historical, statistical or scientific purposes shall not be considered as incompatible provided that Member States provide appropriate safeguards (in the same way : Convention for the protection of individuals with regard to automatic processing of personal data, 28 Jan. 1981 (n° 108), art. 5.b).

12 The interests in presence are those of data subjects, data controllers, the society and interested third parties.

13 Regarding the Minimising Principle, see: Working Party, First Annual Report, 25 June 1997, WP 3, p. 15. In other words, one should minimise the processing of personal data.

14 As expressed in article 6.1.c. of Directive 95/46/EC.

have to be imposed beyond the simple information relative to each data flow considered on an individual base.

**8.** Regarding processing of personal data, transparency applies only to the processing and is mainly ensured by the information to be given to the data subject concerning the processing of his or her personal data, and by the right of access to his or her personal data that are processed [15], and by the notification of the data processing to the competent supervisory authority[16]. Concerning especially the information of the data subject, Directive 95/46/EC makes a difference if the personal data is or not obtained from the data subject [17] :

(a) the identity of the controller and of his representative, if any;

(b) the purposes of the processing for which the data are intended;

(c) any further information such as

- the recipients or categories of recipients of the data,
- whether replies to the questions are obligatory or voluntary, as well as the possible consequences of failure to reply,
- the existence of the right of access to and the right to rectify the data concerning him or her in so far as such further information is necessary, having regard to the specific circumstances in which the data are collected, to guarantee fair processing in respect of the data subject.

The duty to inform the data subject does not apply when the data have not been obtained from the data subject, in particular for processing for statistical purposes or for the purposes of historical or scientific research, whenever the provision of such information proves impossible or would involve a disproportionate effort or if recording or disclosure is expressly laid down by law. In these cases, Member States shall provide appropriate safeguards[18].

The duty to inform the data subject involves the right of access to his/her personal data and in the right to obtain the rectification, erasure or blocking of data in case their processing does not comply with the provisions of Directive 95/46/EC, in particular because of the incomplete or inaccurate nature of the data. With respect to this, the organisation of the new telematic infrastructures should ease the exercise of the data subject's rights according to the principle of the reciprocity of advantages. When telematic infrastructures facilitate collection and processing of personal data, they should consequently provide data subjects with direct on-line access to their personal data and to data controllers and other bodies involved in the network.

When carrying special devices with telecommunication functions (such as health cards, Information and Communication Technologies implants, RFID implants, etc.), the data subject should control them. This control implies the transparency of their existence, the means of their operation, their information content, and the risks induced by the interruption of the service by the patient [19].

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15 Directive 95/46/EC, art. 12.

16 Directive 95/46/EC, art. 18-21

17 Directive 95/46/EC, art. 10.

18 Id., art. 11.2.

19 See also art. 4.2. of Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

The creation of these new telematic infrastructures raises another question. Who is globally in charge of the infrastructure, independently of the determination of the data controller for the personal data processing ? The solution to this question should not be delegated as such to jurisdictions. Independently from the determination of data controllers, the person in charge of the network, "the network controller", should be clearly identified. Indeed, only the conception and the quality of the network permit to consider the risks relative to the different data processing.

**9.** When the new telematic infrastructures open the door to new services of the information society[20], these latter must comply with special requirements in terms of transparency. Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') provides special rules relative to additional general information to be provided[21], commercial communications[22] including unsolicited commercial communication[23] from regulated professions[24]. The Directive provides special rules relative to the information to be provided for the conclusion of contracts by electronic means[25] and for the placing of orders[26].

## III. Security and Confidentiality

**10.** The security and confidentiality of information highways in healthcare are certainly more easy notions to understand. These requirements envisage or encompasse both levels of the information system. The infrastructure must be secure and stable. It should ensure the security and the confidentiality of the data processing performed in the framework of the second level.

Regarding the processing of personal data occurring at both levels, confidentiality implies that any person acting under the authority of the controller or of the processor, including the processor him or herself, who has access to personal data, must not process them except on instructions from the controller, unless s/he is

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20 As defined in art. 1.2 of Directive 98/34/EC.

21 Directive 2000/31/EC, art. 5. These information concern mainly the identification and the localisation of the service provider.

22 Directive 2000/31/EC, art. 6.

23 Directive 2000/31/EC, art. 7.

24 Directive 2000/31/EC, art. 8. The use of commercial communications which are part of, or constitute, an information society service provided by a member of a regulated profession is permitted subject to compliance with the professional rules regarding, in particular, the independence, dignity and honour of the profession, professional secrecy and fairness towards clients and other members of the profession.

25 Directive 2000/31/EC, art. 10. These information concern the technical steps to follow to conclude the contract, the storage of the contract, the possibility to identify and correct errors, the languages offered for the conclusion of the contract. In the same way, contractual terms and general conditions must be made available in a way that allows him to store and reproduce them (there are exceptions for contract concluded exclusively by exchange of email or by mean of by equivalent individual communications).

26 Directive 2000/31/EC, art. 11. The service provider has to acknowledge the receipt of the recipient's order without undue delay and by electronic means.

required to do so by law[27]. Security implies that the data controller, also and in due cooperation with the so called "network controller", must implement appropriate technical and organisational measures to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorised disclosure or access, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing[28]. Having regard to the state of the art and the cost of their implementation, such measures shall ensure a level of security appropriate to the risks represented by the processing and the nature of the data to be protected[29] When processing is carried out on one's behalf, the data controller has to choose a processor[30] that provides sufficient guarantees in respect of the technical security measures and organisational measures governing the processing to be carried out, and must ensure compliance with those measures[31] It may seem difficult to comply with these constraints, especially when these telematic infrastructures imply the intervention of providers that are not subject to medical deontology or medical secrecy. Sometimes, the creation and the operation of these infrastructures may oppose traditional rules relative to medical secrecy. But information society technologies may provide many solutions to these problems. Directive 2002/58/EC provides rules concerning the security and the confidentiality of electronic communications but unfortunately only for infrastructures open to the public and accessible to him or her[32].

**11.** Concerning new information society services achieved through these new telematic infrastructures, Directive 2000/31/EC aims to ensure some legal certainty and consumer confidence[33] notably by regulating certain legal aspects of the conclusion of contracts by electronic means, when other Directives provides consumers with some protection[34]. The new products and services that could be

27 Directive 95/46/EC, art. 16.

28 See also art. 4.2 of Directive 2002/58/EC.

29 Directive 95/46/EC, art. 17.1.

30 Directive 95/46/EC, art. 17.1.

31 The notion of processor is different from the notion of data controller. The processor processes personal data in the strict framework of the mission determined by the data controller. He may not use the personal data for his own purposes. He must obey to strict confidentiality duties. His choice must be based on qualitative criteria. The notion of processor is very important and useful in the context of telematic infrastructures and networks in healthcare. This notion helps to qualify the function of several technical intermediaries (by example, an enterprise offering storage resources, or healthgrid platforms, or secondary providers in case of telemedicine).

32 Directive 95/46/EC, art. 17.2. Member States have the duty to identify data processing presenting particular risks and to check them prior their implementation (Directive 95/46/EC, art.20).

33 Directive 2000/31/EC, recital 7.

34 Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market; Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use; Directive 97/7/EC on the protection of consumers in respect of distance contracts; Directive 1999/44/EC of the European Parliament and of the Council of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees; Directive 2001/95 of the European Parliament and

offered through new telematic infrastructures in healthcare will strengthen the place of the patient in healthcare as a consumer, entitling him or her with all the rights (however, what about duties ?) subsequent to this qualification.

## IV. Quality

**12.** Finally, the notion of the quality of the new telematic infrastructures in healthcare is essential. First, it raises the question about the availability of the products and services for practitioners and patients[35]. It raises the question of the technical quality of data transmission (data integrity). It also raises the question of the qualification and education of all the actors involved in the operation of the information system at both levels. Regarding the processing of personal data, the right of rectification and the right to oppose the processing participate indirectly to the data quality[36]. In terms of information society services, some special rules contribute to the quality of the system notably when they allow for the identification and the correction of input errors prior the placing of the order[37] and when they allow for the identification of the service provider (cf. *supra* n° 7).

## Conclusions

**13.** The first age of e-Health is not yet fully implemented while the healthcare sector is already confronted with a radical change in its organisation. From a vertical implementation of new products and services, we now witness the creation of permanent telematic infrastructures and networks in healthcare. These new telematic infrastructures and networks raise concerns in terms of necessity, transparency, security and confidentiality, and quality. These infrastructures and networks are characterised by their permanency. We will have to evaluate their validity "*a posteriori*" and on a periodical base. The evaluation should take into account the interests of the society, the actors of healthcare, the patients, and citizens. In order to stimulate the acceptance of such information systems and improve their transparency, it seems opportune to implement clearly identified landmarks (bodies and procedures) in their creation and functioning by creating what Pierre Trudel qualifies as "trust circles". That is, in the context of these networks and through transparent regulatory means (including self-regulatory means), restricting the people authorised to act on and to gain access to certain resources that are present through

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of the Council of 3 December 2001 on general product safety; Council directive 85/374/CE of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products as modified by Directive 1999/34/CE of the European Parliament and of the Council of 10 May 1999 amending Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products.

35 Directive 95/46/EC, art. 6.1.c and d.

36 See also art. 14 of Directive 2002/58/EC, concerning technical features and standardisation.

37 Directive 2000/31/EC, art. 10.1.c and art. 11.2.

the infrastructure. In Belgium, the Federal Be-Health Project represents a very good example of such evolution in the organisation of Public Health. This project aims to offer both a public platform and e-Health products and services to the benefit of practitioners and patients.

But one should not forget that healthcare cannot be reduced to machines, devices or informatics. First of all, healthcare is a liberal art. As such, it is not completely subject to rationalisation and to the use of information systems even if their quality and advantages are not questionable. Medicine is a combination of personal skills and knowledge. "Chance" has always been an important factor regarding the progress of medical knowledge. We should be very careful not to trust all our medical knowledge in machines and not to put all our money in it. We should also focus on the education of human-minded practitioners. Otherwise, we could forget how to progress and how to challenge established knowledge in order to progress. Information and Communication Technologies in healthcare are a challenge, more than ever, for both the worst and the best. We should go on trying to exploit the best of these technologies.

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# Embedding Professional Issues within University Degree Courses

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**Abstract:** This paper will address the British Computer Society's (BCS) requirements for accreditation with respect to the content and delivery of professional issues within UK Information Systems and Computing undergraduate degree courses. We shall discuss the professionalism required of BCS members in general, the requirements placed on computing degree programmes by the UK academic authorities and then the specific requirements placed on such courses for them to meet BCS accreditation demands. The major issues that need to be addressed positively by the providers of the programmes will be presented and we will conclude by relating the success of the enterprise to its implementation through the application of self-regulatory and democratic principles.

**Keywords:** Accreditation, Professionalism, Ethical issues, UK degree courses

## Introduction

The departments of nearly all UK universities running undergraduate degree courses in information systems and computing voluntarily offer those courses for accreditation by the UK professional body, the British Computer Society (BCS). All such courses are also expected to conform to the national benchmark of the Qualification Assurance Agency (QAA). This is a body set up by the Universities charged with overseeing the quality and standards of all UK degree courses, not just those in the computing area. While there is a close synergy between the two bodies, the requirements do differ with the BCS placing greater emphasis on the preparation of future computer professionals, particularly in their knowledge of the real world and their professional behaviour within it.

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Having such bodies impose requirements on the content and context of such courses, might, at first sight, imply the need for strict control regimes. As this paper explains, this is not the case as historically good relationships have grown up between those carrying out the reviews and those at the receiving end. The reason for this good relationship is that inspections are based on democratic principles that imply a great degree of self-regulation, as opposed to a heavy-handed approach of inspection imposed from outside.

# 1. The British Computer Society

The British Computer Society (ref. 1), under its Royal Charter, is required to establish and maintain standards of professional competence, conduct and ethical practice for information systems practitioners. This duty includes the responsibility to develop and maintain standards for the educational foundation appropriate to people wishing to follow a career in information systems. Although fifty years old, the Society is a 'new' engineering institution compared with many that received charters in the late 19th and early 20th centuries. As such there is a strong UK tradition in the acceptance of chartered bodies as leading the professions and setting out the standards and behaviour expected of their members. Suffice to say, the BCS takes professionalism as central to its role in maintaining the standards of the profession and actively promotes this area within the education of prospective entrants to the profession.

To this end all BCS members have to conform to the Society's Code of Conduct (ref. 2). This covers the three areas of The Public Interest, Duty to the Profession, and Professional Competence and Integrity. The Society's Qualifications and Standards Board is charged with maintaining the Code through the offices of an Ethics Expert Panel made of up of senior members of the Society.

The following is a part of the Code of Conduct that is relevant to the focus of this paper.

In your professional role you shall have regard for the public health, safety and the environment.You shall ensure that within your professional field/s you have knowledge and understanding of relevant legislation, regulations and standards, and that you comply with such requirements. You shall conduct your professional activities without discrimination against clients or colleagues

# 2. Qualification Assurance Agency

## 2.1 Background

Historically within the UK University system there has been a great degree of independence from government, particularly by those well-established institutions that have not been heavily dependant on government money. However, with the university expansions of the late 1960s and again of the 1990s, many more universities have become increasingly reliant on government funding. Consequently it is a legitimate question for the funders to ask how well the money is being spent, with accountability being more and more central to government thinking.

In the 1970s, to ensure the quality and standards of the then new universities a Council of National Academic Awards (CNAA) was created with over a hundred institutions seeking approval for their degree courses. This applied to the ex-Polytechnics, but not to the previously established city and redbrick universities. Subject panels for each discipline were set up and any new degree had to receive CNAA approval.

The 1990s saw increasing pressure for accountability to Government paymasters. The universities as a whole were able to resist direct government intervention by setting up the Quality Assurance Agency (QAA) for Higher Education (ref. 3) in 1997. This is an independent body funded by subscriptions from all UK universities and works through contracts with the main UK higher education funding bodies. The mission of the QAA is to safeguard the public interest in maintaining standards of higher education qualifications and to inform and encourage continuous improvement in the management of the quality of higher education. This is done by working with higher education institutions to define academic standards, and by carrying out and publishing reviews against these standards.

## 2.2 Subject Benchmarks

Working closely with the sector, the QAA have published subject benchmark statements (ref. 5) designed to make explicit the general academic characteristics and standards of degree programmes in the UK. Subject benchmark statements set out expectations about standards of degrees in a range of 46 subject areas. They describe what gives a discipline its coherence and identity, and define what can be expected of a graduate in terms of the techniques and skills needed to develop understanding in the subject. Subject benchmark statements represent general expectations about the standards for the award of qualifications at a given level and articulate the attributes and capabilities that those possessing such qualifications should be able to demonstrate.

All recognised degree courses in Information Systems and Computing are expected to conform to the QAA Computing Benchmark. Indeed it is an initial condition that any course seeking BCS accreditation does so – see the next Section. This paper is concerned with one aspect of the Computing benchmark, namely the requirements for the professional, moral and ethical issues that are expected to be covered within any recognised computing degree.

The benchmark is set out in terms of abilities and standards. The following is the part of the abilities section that is directly relevant to the focus of this paper.

**Computing-related cognitive abilities**

Students should recognise the professional, moral and ethical issues involved in the exploitation of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices.

Benchmarking standards are defined at threshold and modal levels. The threshold standard is interpreted to mean that all students (taken over all years) graduating with an honours degree in the discipline of Computing will have achieved this. The modal standard is the average (taken over all years) of all the students

graduating with an honours degree in the discipline of Computing. The following is the part of the standards section that addresses the concerns of this paper.

**Benchmarking standards**
Students should be able to

- at the Threshold level : identify appropriate practices within a professional and ethical framework and understand the need for continuing professional development;
- at the Modal level : apply appropriate practices within a professional and ethical framework and identify mechanisms for continuing professional development and life long learning;

The benchmarking criteria for each subject area have been undertaken by a group of subject specialists drawn from and acting on behalf of the subject community. The criteria are broadly based and cater for a wide variety of computing courses ranging from business-oriented information systems ones across the spectrum to hardware-oriented computing systems courses.

To sum up, UK universities has evolved a self-regulatory system through the QAA and its procedures where academic themselves can carry out periodic inspections (visits) to monitor that quality procedures are in-place and acted on and also to see that the benchmark standards are being met.

# 3. BCS Accreditation

## 3.1 Criteria and Principles

Departments in UK universities running degree courses that conform to the QAA Benchmark in Computing are invited by the Society to submit their courses for accreditation. Not wishing to stifle evolution and innovation, the Society is also willing to consider courses that may not entirely conform to the benchmark. The Society publishes Accreditation Guidelines (ref. 3) that contain the criteria that are expected to be met. The following gives the main sections of the Guidelines.

Criteria for Accreditation
2.1 Departmental Criteria
2.1.1 Quality Assurance
2.1.2 Learning Support
2.2 Course Criteria
2.2.1 Requirements for Honours Degrees
2.2.2 Requirements for courses other than Honours Degrees
2.3 Project Criteria

Within the Course Criteria section an essential requirement for all courses is that they address Legal, Social, Ethical and Professional Issues (LSEPIs).

"The Society looks for course content which specifically aims to give students an understanding of the professional issues relevant to their future working lives, as well as a sound academic grounding in the discipline. A course should provide opportunities for a full appreciation of the wider issues of ethical standards, legislative compliance and the social and economic implications of information systems practice."

The expectation is that delivery and coverage of these issues are centered on the following principles: Breadth, Integration, Importance, Visibility, and Professional Behaviour.

**Breadth - non-technical requirements**

The course should give students an awareness of external factors which may affect the work of the computer professional:

- acceptance of responsibility for work which affects the public well-being
- professional behaviour
- statute laws which impact on the work of the information systems engineering professional
- computer safety and security
- principles of management and industrial relations.

**Integration**

Awareness of professional issues such as standards, codes of conduct and relevant legislation must not be separated from the practice of designing and implementing systems. It is essential that these topics are integrated into the course.

**Importance**

Students should not perceive legal, social, ethical and professional issues as peripheral to, or as less significant than, technical skills detailed in the syllabus. The Society considers that adequate coverage of legal, social, ethical and professional issues is important in the assessment and examination of accredited courses but accepts that the requirements may be met in many ways.

**Visibility**

The relevant legal, social, ethical and professional issues should be specifically detailed in the syllabus, mentioned in directions to students on practical assignments and work placements, and not left solely to the discretion of individual teachers.
The central issues are important to all information systems engineering practitioners and must be addressed in core areas of the course rather than in options alone.

**Professional Behaviour**

In gaining exemption and accreditation, it is expected that all staff demonstrate and maintain high professional standards in their own use and practice of information systems engineering. Membership of a professional body would be one sign of such a commitment. The production and promulgation of codes of conduct for students,

the displaying of notices relating to such things as copying software and virus protection are also signs of such a commitment.

## 3.2 Location of LSEPI within degree programmes

Undergraduate (honours) degree courses in the UK are typically of three years' duration (four years' in Scotland starting from a lower base). Rather than using 'years' courses are laid out in terms of three levels.

### 3.2.1 Level 1

The impetus in level 1 is to encourage students to act professionally as students and to introduce them to the idea of the need for professionalism in their future careers. Thus, the following topics are usually present in the first year of all computing courses.

Laboratory safety
Hacking and plagiarism
Learning skills
Investigations and presentations
Working to deadlines
Working co-operatively in teams

Areas of study can be combined effectively here. For example, students working in small groups can carry out simple investigations into LSEPI topics and report back with a presentation to the whole class.

### 3.2.2 Level 2

80-90% of courses include a dedicated module on 'Professional Issues' that contains specific lectures, scenario investigations, group activity and presentations. Some students on more technically-based courses find lectures on the non-technical aspects difficult to follow. Consequently, the use of scenario-based investigations has proved particularly effective in introducing students to concepts beyond computer systems and programming.

### 3.2.3 Level 3

The final year of UK degrees have a compulsory project together with mainly optional modules or pathways. The principle at this level is that *"Professional Issues should be included as and when relevant"*. Ideally, this implies an explicit statement in module specifications and appropriate assessment of the material. Many final year projects have scope for a consideration of ethical issues and the Society encourages reporting of these areas ion the student's final report.

## 3.3 Issues surrounding the delivery of LSEPIs

The following delineates some issues that Departments need to address when contemplating teaching LSEPI to a level acceptable for BCS accreditation.

1. As stated in the QAA benchmark, what is an appropriate 'professional and ethical framework' for degree programmes?
2. What constitutes acting 'ethically/professionally' as a student?
   -Plagiarism – positive contribution to group activities
3. What constitutes acting 'ethically/professionally' as lecturers?
   -Professional response to students
4. What LSEPI content is it essential to include in every programme?
5. Should discriminatory issues be built into programmes, and if so how?
6. What learning experiences should we design for the students so that these areas of the curriculum are fully covered?

- Lectures
- Seminar work (presentations)
- Group activity through the use of scenarios

7. In what framework should the learning experience be set? Separate modules - fully integrated material – a mixture
8. How can all staff in a department be encouraged to take this area of the curriculum seriously?
9. In a research dominated environment how can department Heads be persuaded to take this area of the curriculum seriously?

To sum up, in an ideal situation, activity should take place within all three levels of an undergraduate degree programme. Computing departments should adopt an **overall ethos**, exemplified through explicit policy statements that encourage both staff and students to behave professionally. Policy should be reviewed on a regular basis and policy implementation should be subject to systematic monitoring.

### 3.4 Review and Inspection Mechanisms

The QAA review process is carried out by trained senior academics, not necessarily subject specialists, and focuses on the quality procedures of the University as a whole. The BCS accreditation is carried out by visiting panels of senior specialist academics augmented by industrialist with knowledge of academia. The focus of the BCS visit is on the departmental procedures that affect the quality of the student's learning experience and also the quality of the outcomes arising from that experience. A highlight of each visit is for the panel to meet with students taking each course and to verify their actual experiences. Panels visit every five years unless there are problems; then, more frequent visits are made. Minor defaults can be rectified by a departmental submission within 90 days of receiving the final report form the Society.

## 4. Self-Regulation and Democracy

### 4.1 Democracy

The ideal situation is where a department has made a positive response to all the issues listed in section 3.3. The Society has steadily worked towards this position

since accreditation was first carried out more than thirty years ago. In the early days the newer universities were accustomed to CNAA reviews, but well-established universities found it more difficult to accept inspections. If a heavy-handed approach had been taken then many would have refused to take part in the process. However, with the support of several major institutions, we have arrived at a situation where every department in a UK University voluntarily seeks accreditation as a matter of course.

Actual accreditation is done through a visit to the University by a panel of assessors, one of whom is an industrialist. A feature of the panels is that they are composed of respected senior faculty members of both the established and the newer universities, together with an industrial assessor. The academic assessors are all senior members of other university computing departments who will undoubtedly be subject to an accreditation of their own department in turn. In this way a democratic process is created.

The assessment panels prepare reports that are brought to the Accreditation Committee of the Society before being sent to the relevant University. The Committee itself consists of a selection of the most senior and experienced of the assessors. Discussion of draft reports at this committee provides quality assurance for compatibility among the many panels needed to carry out the complete schedule of visits. Consequently, the approval mechanism is seen more as one of peer review rather than one of outside inspection, with constructive help and advice given as part of the process.

### 4.2 Self-Regulation

With respect to the QAA, this body was set up by academia in order to ward off any outside Government inspection regime. Subsequent governments have so far accepted this body as a sufficient watchdog to ensure the standards of university degrees. Thus, through self-regulation, universities have managed to escape from a very rigid regulatory structure.

While all universities have to take notice of the QAA, involvement of computing departments with the BCS is of a purely voluntary nature. Because of this appliance of strict regulations on accreditation visits would have been counter-productive with many universities not seeking approval. Getting agreement on the technical content of courses and their appropriate standards is to not too difficult a process. Also identifying the processes and resources needed for a quality learning environment is fairly straightforward. However, trying to introduce non-technical areas into traditional curricula, such the LSEPIs discussed previously, has taken longer. Where the Society has had to withhold accreditation this has been done in a constructive manner with, in nearly all cases, a positive outcome eventually resulting from the feedback provided.

## Conclusion

The construction of assessment panels through the democratic process outlined in the previous section, and the taking of a supportive rather than a dictatorial role by the

various panels, has meant that over a period of time the Society can justly point to the acceptance of its accreditation process in general and, in particular, to the introduction of a wide range of professional issues to all graduates from its accredited courses.

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# IT, Ethics and Education : Teaching the Teachers (and their Pupils)

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**Abstract:** At colleges and universities, computer ethics has established itself as an integral part of computer science and information technology programmes, at least in principle. However, many of the issues involved are not only relevant to IT professionals, but also to IT users or even any citizens of our IT intensive society. It is therefore important that ethical issues in IT receive proper attention in secondary school, both in IT classes and other contexts. For this to be possible, firstly, educational policy and plans have to be adjusted. Secondly, teachers must get a thorough introduction to computer ethics, and learn appropriate teaching methods. Finally, teaching materials have to be developed and distributed. We describe ongoing efforts to help bring all this about.

**Keywords:** computer ethics, teacher training, IT education, IT curriculum, secondary school

## 1. Introduction and motivation

At colleges and universities, computer ethics has established itself as an integral part of computer science and information technology programmes [Johnson, 2001, Bynum & Rogerson, 2004, Barroso & Melara, 2004, ACM, 2005], at least in principle. However, little attention has been devoted to computer ethics

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at secondary school level and in teacher training.In this paper, we argue that computer ethics should be incorporated in the secondary school information technology curriculum. We distinguish three major reasons for doing so.

First, awareness of the major ethical, social and legal issues in information technology (IT) promotes a more considerate attitude towards (the use of) this technology in both expert and lay users. The need to include computer ethics in college and university IT curricula is (therefore) well established [ACM, 2005]. But vocational high school also offers specialised IT curricula, and the arguments in favour of computer ethics at college and university level apply virtually unchanged in that context. Moreover, many youngsters who never enroll in a specialised IT programme, nowadays acquire considerable IT competences in e.g. webdesign, online information retrieval and communication, multimedia manipulation, etc. [RISCP, 2006]. Such skills can easily be used to harm others (or themselves), and computer ethics classes in school can and should contribute towards preventing this. Secondly, insight into the ethical and social dimensions of information technology enhances a well-founded self-reliance in (future) citizens of our IT-based society. Surely, we must attempt to raise the ethical standards in cyberspace by teaching computer ethics to the expert few. However, it will also be very productive to promote a good awareness of the major issues among the vast majority of lay users, including a structural knowledge of their ethical and legal rights and duties as well as technical and/or procedural competences that will enable them to reduce the risks they are exposed to. Thirdly, in a broader educational perspective, computer ethics offers excellent opportunities to introduce secondary school pupils to philosophy and ethics in an area which many of them, once "discovered", perceive as highly personally relevant.

The remainder of this paper is structured as follows. In Section 2, we first briefly sketch the content and educational approach in the IT courses currently included in the Flemish secondary school curriculum. We point out some major deficiencies, and move on to describe recent efforts in policy making, proposing a new, coherent vision on IT education throughout secondary school. We also indicate the need(s) for computer ethics in the latter context. Subsequently, in Section 3, we address in more detail the issue of teaching computer ethics in the (improved) secondary school IT curriculum. We investigate what should be taught at which age, and draw on experience gained from several years of small scale experiments to suggest some methodological guidelines. Section 4 then looks at computer ethics in teacher training. We describe our approach and experiences with seminars and student projects over the last seven years, and our efforts to support computer ethics classes in secondary school. Finally, in Section 5, we volunteer some conclusions and outline plans for further work.

Throughout this paper, with only a few exceptions, we *focus on courses which take information technology itself as a study subject.* Other contexts also offer opportunities to address issues in computer ethics. However, in this paper, we wish to concentrate on IT classes taught by IT teachers, and the specific opportunities and challenges in those settings. Also, we only discuss *teaching* computer ethics (and related subjects) to pupils, ignoring the ethical and safety issues in *using* IT at school [Martens, 2003a], as well as the ethical issues connected with using IT as an educational *tool* [Cohen, 2000, Jefferies & Stahl, 2005].

Finally, we note that an earlier version of this paper appeared as [Martens, 2005].

# 2. Information technology and computer ethics in the (Flemish) secondary school curriculum

Currently, little time is spent on computer ethics in (most) Flemish secondary school IT classes and courses. In the next section, we investigate how this should and can be changed. But first, we take a look at the educational context in which computer ethics must find its place: which are the main IT courses and study programmes currently featuring in the Flemish secondary education curriculum and what is their content? And what may we expect or hope for the near future, especially with respect to computer ethics? We shall limit our brief description to the situation in the Catholic school network, for it attracts about 70% of the Flemish secondary school pupils. Moreover, in the other major networks, the situation of IT as a study subject is quite similar.

## 2.1 The current situation

Flemish secondary education is divided in three grades of two years each: first grade from 12 to 14, second grade from 14 to 16, and third grade from 16 to 18 years of age. Currently, IT as a study subject features as follows in this setting. First, some study programmes with a professional profile in second and (mainly) third grade (of vocational school) specialise in IT, offering it at a volume of up to 10 hours of class a week. They aim at preparing pupils for the labour market as IT professionals, and/or serve as a preamble to college studies in IT. Secondly, in some schools, pupils with (mainly) mathematical-scientific study profiles in general (non vocational) education can choose up to 2 hours of IT a week in third grade. Most of these courses focus on problem analysis and programming. Thirdly, (nearly) all pupils are taught IT in second grade as a two-year course, with one hour of class a week. This course is meant as a general introduction to IT and its use. Finally, for a few years now, pupils are expected to acquire a number of basic IT competences in first grade. Many (but not most) schools therefore offer one weekly hour of IT to their first year pupils.

So, currently, for most pupils, the course in second grade is their main IT course in secondary school; for many, it is the only one. It comprises about 50 hours of class, to be devoted to the use of computers, operating systems, communication facilities and applications software, as well as introductions to hardware and networks, problem analysis and programming, and ethics [VVKSO, 2003]. The course objectives also state that applications software classes should emphasise task-oriented problem-solving, rather than exhaustive program manipulation skills. However, this course has been suffering from many problems. In practice, often pupils were mainly expected to learn Word and Excel by mostly imitating sequences of actions from the teacher or the textbook. In 2002, the situation deteriorated further because societal pressure led to the inclusion of the European Computer Driving Licence [ECDLF, 2006] objectives in the course goals. These objectives are numerous, and very much geared towards immediate practical applicability in

(mainly) office applications. As a consequence, the time available to introduce pupils to aspects of IT such as hardware, network structure, programming and ethics was severely reduced. Nor have the teaching methods in application software classes benefited from the increased time pressure. If we use the terminology of [ACM, 2003], we must conclude that the classroom emphasis has shifted further towards *IT literacy*, the course goals (still) largely focus on *IT fluency* but their achievement has remained as elusive as before for many or even most teachers and pupils, and core *computer science* goals as well as content have (nearly) shrunk to the point of disappearance.

## 2.2 A vision for the future

It is always darkest before dawn. The development described above almost proverbially sparked a counter movement. An outspoken contribution was made by [Martens, 2003b] which proposed to shift gradually the focus of attention in secondary school IT courses, starting with IT *use* in first grade, continuing with *understanding* IT in second grade, and learning to *produce* (and/or maintain) IT in third grade. Very important was the formation of a thinktank with IT education experts, selected from secondary schools, central IT coordination at the school network level, and teacher training, to develop a coherent vision on IT education at the secondary school level. After two years of work, this group delivered a report [VVKSO, 2005], partially based on [Martens, 2003b], advising policy makers on the essential lines of development of a coherent secondary school IT curriculum from first to third grade. A detailed discussion of the ideas put forward in [Martens, 2003b] and [VVKSO, 2005] is outside the scope of this paper, but we do take a closer look at some elements which are particularly relevant to our present purpose.

In [VVKSO, 2005], it is proposed that all pupils have (at least) one weekly hour of IT throughout first and second grade. This should provide sufficient time to learn to use and understand IT at a level suitable for the pupil's study profile. Moreover, one of the areas of basic IT competences which all pupils must acquire according to [VVKSO, 2005] reads as follows: *"Elementary social and ethical competences, including those related to privacy, copyright and environmental aspects"*.

Perhaps even more important is the conceptual shift to understanding IT as the main overall goal in the second grade course.

Obviously, such an understanding cannot be achieved without a substantial computer ethics component. Indeed, [ACM, 2003] proposes a similar focus of attention in its intended (in our terminology) second grade course "Computer Science in the Modern World". The main goal of that course should be: "to provide all students with an introduction to the principles of computer science and its place in the modern world". As one of ten main topics of interest in the proposed course, [ACM, 2003] lists: *"Ethical issues that relate to computers and networks (including security, privacy, intellectual property, the benefits and drawbacks of public domain software, and the reliability of information on the Internet), and the positive and negative impact of technology on human culture"*.

Finally, in third grade, not only some pupils with specialised vocational profiles should study advanced IT, but many other pupils should have the possibility to

include an optional advanced IT course in their programme. IT ethics (professional as well as lay) must be an integral part of such courses.

# 3. Teaching computer ethics in secondary school

Dawson and Newman [Dawson & Newman, 2002] described an approach to (professional) IT education where empowerment is the central concept. The essence of their approach is as follows: rather than emphasising particular, readily usable, technical competences, the ability to learn through and from exploration, possibly failure, is the central course goal. In this way, students "develop skills and confidences so that they can acquire the necessary expertise (in a specific field) when they need it". This approach seems very valuable for teaching IT fluency and (an introduction to) computer science in secondary school in general, as well as ethical competences in particular. It also fits in well with the shift in attention from IT use in first grade, *via* IT understanding in second grade to IT production in third grade.

In the remainder of this section, we take a closer look at the three grades in secondary school, outline the main topics in computer ethics which should be treated in each one, and venture some methodological guidelines for doing so. Where possible, we draw upon experience in teaching ethics by teacher training students over the past few years. Throughout the discussion, empowerment of the pupils in IT and computer ethics will be the central guiding concept.

## 3.1 First grade (age 12-14)

In this grade, the focus of the IT curriculum is on learning to use common IT in a systematic and structured way. With respect to computer ethics, this implies emphasising elementary aspects of online ethics and safety. Most pupils at this age are intellectually not sufficiently mature to learn about or discuss general ethical issues in IT. On the other hand, they have to be made aware of the risks and/or inconveniences implied for themselves and/or others by unsafe and/or improper use of IT. To give an example, most pupils at this age no longer need to be taught how to send an e-mail, but it does prove necessary to teach them which kind of language use is suitable in which kind of contexts, and why. Subjects such as privacy, copyright and computer crime should also be addressed, but always in very practical contexts of immediate personal relevance to the pupils. Obvious topics include safe chatting behaviour, the legal risks connected to illegal downloading, a cautious attitude towards possible virus infection, and many more.The best overall teaching approach to achieve this kind of objectives lies probably in relatively short explicit interventions by the teacher (or the textbook), anytime it seems appropriate to do so in the light of the "technical" subject matter at hand. In this way, pupils will, to some extent, learn to systematically incorporate important aspects of ethics and safety in their IT use. Of course, occasionally entire classes can be devoted to these subjects. Even organising or improvising somewhat extensive group discussions can be appropriate, especially when pupils themselves raise relevant issues on their own initiative.

Since IT as an explicit subject in the first grade is a relatively new and still quite rare phenomenon in Flemish secondary schools, our experience with teaching ethics at this level has been limited. One student recently tried to set up a whole hour

classroom discussion on privacy in a second year class group with a vocational profile and utterly failed: her pupils maintained that they needed no privacy, so what was all the fuss about? Another student successfully devoted an entire hour of class with first year pupils to chatting and password safety, while a third experimented extensively and equally successfully (in a Dutch first year class group) with an approach like the one described in the previous paragraph.

## 3.2 Second grade (age 14-16)

Understanding IT cannot be achieved by (only) using it. At the age of 14 or 15, most pupils attain a level of maturity which allows teachers to address more general ethical and social issues relating to information technology. Therefore, computer ethics sessions and projects should be a substantial part of the second grade IT curriculum.

In this context, teaching for empowerment can have a double meaning. First, pupils will feel empowered, not only through gaining technical insight and user confidence, but also by discovering some of the more subtle aspects of computer ethics and safety. At this age, for many pupils, privacy does become an important issue, and an investigation into online privacy and the many ways in which it can be undermined becomes interesting. Topics of a more general nature become feasible. A discussion of open and free software and the philosophy behind it can be of interest, especially when combined with the pupils' own first steps in programming. The latter context is also suitable for a more profound reflection on copyright, since they are likely to discover in person how much effort it takes to produce correct and usable programs. This list is far from complete, but there is a second point to be made. Indeed, at this age, pupils develop sufficient intellectual maturity for the kind of reasoning through analogy which lies at the heart of computer ethics. Cases on illegal copying of music can now be made through analogies with e.g. furtive homework copying. Most pupils experience such aspects in IT as very relevant to their own pursuits and will be interested. This area therefore offers excellent opportunities to stimulate the pupils' capacity for logical, philosophical analysis and analogical reasoning. This in turn leads to a considerable boost in empowerment.

In both areas, to get good results, it is crucial that computer ethics teaching is not reduced to the teacher (or the textbook) reciting a list of do's and don'ts. The pupils' core activity must lie in their own reflection and discussion. If there is sufficient time available, it is recommended that they should (also) perform projects, not unlike the ones that will be described in the section on teacher training below (see Section 4). As an added benefit, such projects emphasise the fact that the key factor to understanding IT and achieving IT fluency is not hammering away at a keyboard.

Experiments by teacher training students show that age and technical IT competence must be taken into account when choosing teaching approaches for computer ethics topics in second grade. In many ways, pupils in the first year of this grade are still too young and (currently) too ignorant in the area of IT to enable a profound and prolongued treatment of computer ethics issues. It can therefore be a good idea to (just) stimulate their awareness of the issues through e.g. the collection of newspaper cuttings and/or the execution of short research projects at "empty"

moments. One student suggested putting a box with questions in the classroom and having pupils, on completion of their technical tasks, select one question for internet research during the remainder of the class. Subsequently, at some time, compiled results can be presented to the rest of the class and/or the teacher.

In the second year of the second grade, dedicated computer ethics classes have definitely proved feasible. In inexperienced groups who still feel relatively insecure about IT, an element of game or contest can be a good idea (an example can be found online at [Martens, 2001]). In a class group with a high level of IT expertise, a two hour version of the quite profound session for last year pupils described below in Section 3.3, proved very succesful.

## 3.3 Third grade (age 16-18)

Many of the above considerations about understanding IT, teaching for empowerment and computer ethics in second grade, also hold for third grade. Of any third grade courses aiming at IT fluency, computer ethics must therefore be an integral part.

However, since the emphasis in IT courses of many third grade study profiles will be on IT production and computer science, professional IT ethics and responsibilities also become relevant. In such courses, pupils should perhaps already be introduced to professional codes of conduct, and be invited to reflect on the importance of such codes, both for society in general as well as for themselves as an IT professional in the bud. Somewhat less ambitiously, pupils in specialised IT profiles in secondary school are often those among their peers (and even teachers) with the most developed IT and multimedia competences. This gives them considerable power over more naive users, and it is important that they learn to handle this power in an ethically correct way.

Our experience with ethics sessions in third grade classes with a professional IT profile has been almost undividedly positive. Pupils prove themselves to be very eager learners indeed, provided the teaching approach creates sufficient room for their active participation. One example is a four hour session [Bannier & Onkelinx, 2005] led by two teacher training students for a group of about 20 pupils in the final year of an IT oriented study programme. The pupils had been informed beforehand that there would be a whole morning devoted to computer ethics. They told us afterwards that they had expected four hours of utter boredom. Instead, they were asked to perform small group projects using internet, newspaper cuttings and video fragments on issues related to privacy, copyright, computer crime and (mis)use of information on the internet. The work on these projects was interlaced with plenary discussions and some short games and quizzes. Many pupils found the session a veritable eye-opener provoking reflection on aspects of IT and their use of it they had never before given any serious consideration. Happy as we may be with that result, it is of course sad that they had to wait for this to happen until the final months of their six years in secondary school ...

## 4. Educating the educators: computer ethics in teacher training

Experiments by teacher training students over the last few years showed that most pupils in second grade are willing and indeed eager to discuss topics such as online privacy, illegal copying, unethical web content, and even more "technical" ones such as open software, spyware and hacker ethics. Likewise, there were very positive reactions from (future) "IT specialists" in third grade, whenever students were invited to do sessions in that context. Pupils repeatedly contacted students up to weeks or months afterwards to comment on how stimulating they found the sessions, and/or ask for further information.

If pupils respond so enthusiastically, then why is there so little computer ethics in most IT courses in secondary school? One of the reasons is that the course outlines are overstuffed with "useful" subjects. Another important factor is the lack of competent teachers. It is crucial that IT teachers in their initial training get an extensive introduction to computer ethics, and those who move into the field "sideways" (without having had a formal training in IT and/or its teaching) should not only brush up on their "technical" knowledge.

The study programme for secondary school IT teachers at the Catholic University College Leuven features a (compulsary) seminar series on computer ethics for its last year students. The central goal of the course is to make the students see the relevance and importance of computer ethics, in society in general and in secondary school IT classes in particular, and to provoke a willingness or even eagerness to properly include computer ethics in their own (later) teaching practice, in spite of an almost total lack of readily available teaching materials, tried and tested educational approaches, and/or colleagues experienced in this field. However, the available time for group sessions is limited to six two hour sessions, and the average student workload for the course is set at about 40 hours.

To select an effective educational approach within these rather severe constraints, some important aspects had to be taken into account. First, teacher training at this educational level has a professional rather than an academic profile. Choosing mainly academic study and paper production as the core student activity [Thompson & Edwards, 2004] was therefore considered inappropriate. Secondly, the context for the course is teacher training, albeit in IT, not the formation of computing experts. Therefore, the focus cannot be on codes of conduct for IT professionals [Stahl et al., 2004]. On the other hand, we are dealing with students in their third and final year of teacher training who have already acquired a considerable degree of technical and educational proficiency in the previous two years, but most of whom have only a scant knowledge of computer ethics issues. All these considerations led to an approach which aims at student activity with a high degree of educational experiment on an adequate foundation of subject knowledge. Students are required to read an introductory textbook on computer ethics [Martens, 2000] which serves as a basis for further work and discussions. However, since the main goal of the course lies in changing attitudes rather than acquiring knowledge, the brunt of the students' workload is on projects they carry out in small groups, investigating a particular topic or field within computer ethics and (its) teaching. For these projects, students are specifically asked to (mainly) *act* [Martens, 2004]. They e.g. interview

supermarket managers on their store's privacy policy, contact computer hackers to discuss their acts and ethics, investigate downloading of music and software among fellow students and/or pupils in secondary school, speak with school principals about the ethical aspects of their school's IT policy, etc. On completion, the project results are presented by the project group members to the entire classgroup, including the teacher, during one of the seminars while experimenting as much as is feasible and functional with teaching media and methods: newspaper cuttings, TV-programme or movie fragments, video reports they themselves made, tables, graphs and presentations, internet, role playing, quizzes, games, and discussions, to name just a few. The results are often astounding: many project groups are extremely creative, and often (but not always) the information gathered is highly relevant and a good complement to and/or illustration of the textbook.

To our knowledge, no other published approach to teaching computer ethics puts this much stress on acting, communicating and experimenting, rather than gathering, processing and discussing information and views. The drawback of this approach is a certain lack of conceptual penetration. However, for students with the above sketched profile, it is highly effective: student evaluations of the course are very positive, and many students try their hand at computer ethics classes during their teaching practice and include computer ethics in their own subsequent independent teaching.

It has been mentioned repeatedly: teachers who aspire at devoting serious attention to computer ethics in their IT classes in secondary school, will find virtually no specific teaching materials. Many IT textbooks for secondary school throw only a few cursory glances at ethics, and none that we know of comes even near to a sufficiently profound treatment. Therefore, in a long term effort to support and improve computer ethics teaching in secondary school, teaching materials developed by students in teacher training, either for their teaching practice, or in more extensive, focussed undergraduate projects are made available on the web [Martens, 2001] for general use under a suitable creative commons license [CC, 2006].

During the last few years, we also had the opportunity to do a computer ethics course with a mixed group of students from all over Europe in the fields of business, IT and (mostly non-IT) teacher training [Dierick & Martens, 2006]. The course comprises lectures by the teachers, guided project group sessions (also online) and student project presentations. Apart from the IT students, virtually none of the students involved has much technical knowledge of IT, often not even a good operational one. Nevertheless, an overwhelming majority of the participating students from any field of study (with the noteworthy exception of kindergarten teacher training) rates the course as very interesting and professionally relevant. Obviously, even among non specialists, computer ethics (and IT empowerment) is in high demand.

# 5. Conclusions, ongoing and further work

A lot of work remains to be done. First, teaching experiments by teacher training students will be continued. Over the next few years, we want to considerably extend

the assortment of teaching materials available at [Martens, 2001], aiming at covering a broad range of topics, educational approaches, age groups and study profiles.

At the time of writing, we are investigating the possibilities for cooperation in the field of computer ethics across various subjects in secondary school. Specifically, a student with (Dutch, history and) English as teaching subject(s) is executing a project on computer ethics teaching in English classes in Flemish schools. First experiments delivered encouraging results. Since the student herself has little or no specialised IT knowledge, this project is also providing interesting insights with respect to the amount of technical background required for such an undertaking, and sheds light on the need for and/or the possibilities created by team teaching in computer ethics across subject boundaries. Somewhat related are ongoing experiments with seminars on IT and ethics for students in Dutch aimed at providing them with the necessary background for treating IT subjects incorporated in first grade mother tongue classes.

It would be very interesting to more systematically investigate the (long as well as short term) effects computer ethics classes have on the knowledge, capacities and attitudes of pupils in (and after) secondary school. Experience has shown that these are likely to differ according to age, study profile and teaching approach. However, designing, executing and processing large scale scientific research of this nature is beyond the means of a teacher training institute. A close cooperation with a research institute or university, as well as some secondary schools, therefore seems to be in order.

Next, good educational policies and programmes remain an important issue. While [VVKSO, 2005] lays a foundation for an improved IT curriculum in secondary school, it does only that. At the time this paper is being written, it remains to be seen which of these expert recommendations will finally find their way into the curriculum tables. Getting extra hours of class for IT implies reducing the hours of class for one or more other subjects, and this is politically very sensitive. It is therefore deplorable but not surprising that a recent first official reaction by the highest educational policy committee in the Flemish Catholic secondary school network, though overall rather encouraging, rejected the proposal to introduce an obligatory IT course for all pupils in first grade of secondary school. Even within the available IT hours, computer ethics will not (and should not) be the main subject. How much of the available time it will be explicitly allotted will no doubt be a matter of discussion. Luckily, societal pressure to broaden IT teaching so as to include structurally both social and ethical issues is increasing. In the ongoing public debate on illegal downloading and copying of music e.g., some recent contributors (finally) voiced the opinion that raising ethical awareness through proper education might be more effective than the (remote) chance of getting caught and severely punished. Also, the growing amount of complaints about cyber bullying among children and teenagers have led to concerned questions in the Flemish parliament. As a result, a research project directed by the Flemish Institute for Assessment of Science and Technology (viWTA) has investigated the problem, and one of the resulting policy suggestions is likely to be a recommendation to devote more attention to social and ethical issues in secondary school IT classes.

Good computer ethics education is impossible without well educated teachers. Currently, apart from some isolated initiatives, the curricular status of computer

ethics in Flemish IT study programmes at colleges and universities, including most IT teacher training programmes, is as bad (or even worse) as it is in secondary school. This is in stark contrast with the ACM recommendations [ACM, 2005], which are much more closely inspected as well as respected for any aspects of a more technical nature. It is beyond the scope of this paper to analyse the reasons for this sad state of affairs, but it will be absolutely obvious that any structural improvement in secondary school computer ethics teaching must involve teacher training, both pre-service as well as in-service. Moreover, using IT in an ethically, professionally and legally correct as well as socially and environmentally responsible way cannot be taught by IT teachers alone. Teachers (in subjects other than IT) should not only be functionally but also ethically competent in IT, and they should devote appropriate attention to computer ethics (in a broad sense) in their own teaching. Personal teaching experience in both of these areas indicates that most students in teacher training, be it specifically for IT or not, show great interest and enthousiasm when confronted with topics in computer ethics. So, the main problem in this field currently seems to lie with many of the teachers' teachers.

Throughout this paper, the focus of attention has been on IT ethics and to some extent safety, with only a few excursions into the broader field that has recently been termed "social informatics" [Kling et al., 2005] and defined as follows: "Social Informatics refers to the interdisciplinary study of the design, uses, and consequences of ICTs that takes into account their interaction with institutional and cultural contexts". It is eloquently argued [Kling et al., 2005] that the growing body of insights and knowledge in this area must be a core component of both computer science and information systems study programmes at colleges and universities. We conjecture that it will also be very relevant to translate many aspects to a secondary education context and incorporate them in secondary school IT courses.

Finally, although this paper repeatedly refers to curricula proposed by the Association for Computing Machinery [ACM, 2003, ACM, 2005], our detailed analysis and argumentation have been made in the context of Flemish education. Obviously, it will be very interesting to compare the approach to computer ethics in Flanders and Belgium with that in other regions and countries. This too, however, is left as a subject of future work.

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Hilde De Gezelle, An De Vos, Leen Jacobs and Machteld Pensaert carefully read and commented upon draft versions of this paper. Next, the author wishes to thank Gerben Dierick for his invaluable knowledge and enthousiasm, in particular in the fields of recent technical developments in computer safety and encryption, as well as open and free software. The author is also indebted to these and other colleagues and students, at KHLeuven and KULeuven, for interesting discussions on computer ethics and/or education, as well as their contributions to his ongoing project to improve computer ethics teaching in secondary school. Finally, the author would like to explicitly acknowledge the members of IFIP WG9.2 as well as the "Ethicomp research community" for providing a stimulating and supporting international forum for learning and investigating about social and ethical issues in IT.

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# PART 5 - FOR AN ETHICAL AND DEMOCRATIC GOVERNANCE OF THE IS: LESSONS FROM WSIS

# Introduction to part V

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This chapter seeks to draw lessons from the World Summit on the Information Society (WSIS), a two-stage summit spread over 18 months, which had unique aspects in its structure and process, notably the prominent role played by civil society, and the resultant "action lines" which are being actively pursued as this book is being published.

In the first of the two papers presented here, Prof Yves Poullet looks at what we mean by "Internet governance" and why efforts are being made to establish a regulatory framework. Considering how the topic of Internet governance is treated in the WSIS documentation and conclusions, he identifies new WSIS principles on Internet governance that have emerged. The tensions between technical and legal aspects are noted including certain ambiguities. He considers the differing pulls of the multistakeholder concept – how the intergovernmental organizations (notably ITU, UNESCO, WIPO and WTO), the private groupings with international scope (such as ICANN), and civil society have had their agendas in this domain weakened, strengthened or otherwise adjusted. He looks at how well has participatory democracy been served by the creation of such bodies as the Internet Governance Forum, and commends WSIS for its role in trying to ensure that the process is one of pro-active participatory democracy open to all stakeholders.

In looking forward towards a new regulatory framework, he considers key legal and regulatory aspects include self-regulation and co-regulation., and considers if the European model can provide a solution, commending such cornerstone EU concepts as subsidiarity and proportionality and showing how they fit with the WSIS conclusions.

In conclusion, Prof Poullet notes that the international governance of the Internet must correspond to the international dimension of the network. This perspective explains and justifies the WSIS efforts to propose a global Constitution for Cyberspace, as a single document uniting all aspects of Internet governance. But he questions if international public organisations are ready to assume this responsibility, noting that private international organisations have grown rapidly, and have

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developed a shadowy world of standards and technical norms. Moreover these private international institutions are operating the infrastructure. Civil society is also growing in stature and capacity, although it lacks effective representative bodies. He feels a new democratic process is needed at the international level.

Prof. Jacques Berleur focuses on the societal and ethical consequences of the WSIS action lines, which he divides into basic issues (such as justice, human dignity and other human rights aspects), issues related closely to information and communication technologies (ICTs), and reflects on the means to ensure that societal and ethical concerns are addressed and respected.

Regarding societal and ethical aspects of ICTs, Prof Berleur notes that the value-base of the information society must be founded on the principles contained in the ensemble of internationally agreed-upon conventions, declarations, and charters. More specifically, there should be equal, fair and open access to knowledge and information resources.

A second issue is that appropriate actions and preventive measures, as determined by law, should be taken against abusive uses of ICTs, such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings.

Relevant stakeholders, especially in academia, should continue research on ethical dimensions of ICTs. The independence, pluralism and diversity of media, and freedom of information should be respected, and work in societal spheres should always include the principles of trust, stewardship and shared responsibility together with digital solidarity.

He stresses that Codes of ethics and standards should be adopted and mechanisms should be established to monitor their application as well as providing appropriate sanctions for their violation. He concludes that respect for diversity must be a central criterion in establishing the principles and mechanisms for resolving conflicts that arise in information societies.

Prof Berleur proposes *"the re-creation of public spaces"*, as a mediation between theory and practice, expertise and application, where there could be real "deliberation" (more than a negotiation) before the decision-making. A second step to confront emerging societal and ethical problems of the Information Society is to try to anticipate the social and ethical risks, and take appropriate measures while there is still time to do so.

In considering the agenda of the Internet Governance Forum, he suggests a number of issues that could be developed in the framework of the agenda of the IGF to come. Following the categorization he had used in an earlier publication, Prof Berleur divided the social and ethical issues arising in connection with WSIS to be those related to 1) technical governance (DNS issue, respect for national legislative diversity, role of private organisations in societal decision-making, role of ICANN, limits and validity of technical norms), 2) self-regulation (its place in the normative order, normative roles of private actors and regulators, future of democracy, etc.), and 3) the regulation of the Internet and of the Information Society (the lack of transparency, predominance of vested interests, lack of real democratic process or real ethical concern, who is controlling ethics an democracy?).

He concludes that there remains "a lot of work to be done" to build an ethically responsible and socially conscious Information Society.

# Internet Governance : Some Thoughts after the two WSIS[1]

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**Abstract:** The challenges faced by the globalisation of our Information Society are numerous and crucial for the future of our democracies. The two WSIS have tried to answer these challenges by proclaiming new rights and overall a new way for governing the Internet. This paper focuses on two major debates: the first one circumvents the right to "Universal Access" viewed as the right for everyone to become a "netizen". This includes participation in the Information Society, which incorporates not only the right to be connected to the infrastructure, not only the right to gain access to the informational richness available on the Net but also the possibility for everybody to take part in the large discussion forum that is the Internet. The discussion about Internet Governance was the major topic at the Tunis Agenda. The WSIS definitively advocated a transparent, multistakeholder and co-regulatory approach. What does this mean? What role might ICANN fulfil - do we need to reform that organisation? Among the stakeholders, particularly the international organisations, who are the real winners and who is losing? Might the EU approach to co-regulation be taken as a model for Internet governance? All these questions are raised, even if they are not solved, in our comments.

**Keywords:** WSIS, Internet Governance, Universal service, Co-regulation, ICANN.

1 The World Summit on the Information Society (WSIS) was held in two phases. The first phase took place in Geneva hosted by the Government of Switzerland from 10 to 12 December 2003, and the second phase took place in Tunis hosted by the Government of Tunisia, from 16 to 18 November 2005. As regards the preparatory documents and the outcomes of these two Summits, see: http://www.itu.int/wsis. One pinpoints the major documents issued by the two summits : Geneva Declaration of Principles, Geneva Plan of Action, Tunis Commitment, Tunis Agenda for the Information Society

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**1.** Jacques, you are interdisciplinary by conviction but also by the choice of your friends. With Stefano Rodota, I am your lawyer friend and very glad to be here among your other friends: computer scientists, economists, sociologists and philosophers. It is our pleasure, duty but overall our honour to express our deep acknowledgment and indebtedness vis-à-vis certain colleagues for both their scientific input and their human support. So before I start, I take this opportunity to thank you Jacques for all that you have brought to me. Thanks, Jacques, for your kindness and friendly support in certain important moments of my life.

As regards your presence in my private life, I will give no details. Stefano, you and I assign great value to privacy in not commenting thereon but overall you know in your heart what I mean. As regards my professional life, I would like just to mention one of the most important events of it. When I arrived in 1974 as young assistant at the University of Namur, I was requested by my dean to participate in a seminar you organised at the Computer Science Institute entitled "L'Homme et l'Informatique". The only reason for having being designated was – I am afraid – the fact that as the youngest at the Faculty I was unable to refuse so modern a discussion. Through this fruitful participation I discovered the "ICT world" but, more importantly, found your open-minded personality really fascinating. You wanted to confront two kinds of norms: the legal norms and the technological ones. We have spent hours and hours analysing the first Belgian Bill on Data Protection, trying to achieve between us a common understanding and analysing the mutual impacts of our distinct scientific approaches. It was the origin of the Research Centre on Computers and the Law (CRID, in 1979). Ten years later, we enlarged this interdisciplinary approach of the technological development by creating together the Interfaculty Research Group on Technology Assessment (CITA). With Claire, who has succeeded you as CITA director, I would like to repeat, dear Jacques, my profound gratitude for these CITA and CRID adventures, both still ongoing and – as I am deeply convinced – more and more needed in our Information Society. Technological development must be assessed from a societal point of view and modelled according to values chosen after a democratic debate. Internet governance precisely has both to organise this debate and to create the regulatory solutions needed in order to achieve the goals determined by this debate. Internet governance is a key issue for the future of the Information Society. The debates of the second WSIS during its preparation and the Tunis Conference[2] clearly focusing mainly on this concept and its role have demonstrated quite clearly the truth of this assertion.

**2.** The Geneva WSIS Declaration of Principles might be considered as a first attempt to define a "Global Information Society Constitution"[3]. This Constitution asserts new rights for each individual within a global Information Society, particularly the right to participate in the Information Society (which includes not only the right to be

2 In that context one underlines the important and crucial role played by the Working Group on Internet Governance (WGIG). The final report of the WGIG was presented on 18 July 2005. All the information about the work carried out by the WGIG during its mandate is available at: www.wgig.org., particularly the Report from the WGIG (Working Group on Internet Governance) [WSIS-II/PC-3/D]. On the settling-up of this WGIG, see infra footnote 8

3 See particularly, the analogy between the wordings used by the Geneva Declaration of Principles and the US Constitution : "*We, the representatives of the peoples ...*"

connected to the infrastructure, not only the right to gain access to the informational richness available on the Net,[4] but also the possibility for everybody to take part in the large discussion forum which the Internet constitutes. This right to participate has the prerequisite that each citizen must be appropriately educated to use ICTs and the right to express him or herself on the Net in his or her own language[5].

This Constitution reasserts – with less conviction perhaps[6] - the importance of human rights (mainly those relating to freedom of expression and privacy) in a global Information Society. Finally, the Geneva Declaration of Principles deals with the problem of Internet governance, submitting rough principles[7]and requesting the UN Secretary General to create a special Working Group on Internet Governance (WGIG)[8]. The conclusions of this Working Group, which developed certain scenarios, were barely discussed till the day before the opening of the Tunis Conference[9]. A last-minute compromise was adopted in the end by all contracting parties despite significant disappointment expressed by certain countries, particularly those in the developing world[10].

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4 A prerequisite is the positive obligation of the States to put at the disposal of their population certain information of public utility apart from all the information they are collecting from their citizens through modern medias (the concept of public Information services).

5 The defence of the " Multilingualism " on the Internet is definitively linked with this concern (on that point, see the recent UNESCO Convention on the protection and promotion of the diversity of cultural expressions 2005, Paris, 20 October 2005 but also, the UNESCO Universal Declaration on Cultural Diversity, adopted by the 31sr session of the General Conference of Unesco, Paris, 2 November, 2001 and its Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace, adopted by the UNESCO General Conference at its 32nd session( October 2003). .

6 See, on these liberties, the weak provisions on Freedom of expression, Privacy and fight against Racism and xenophobia enacted by the Geneva Principles : " We should... " ( Points 55, 58 and 59)

7 See, infra, n°4

8 According with the decision taken at Geneva, a specific working group was settled up by the UN Secretary General to address this issue and to prepare recommendations for the Tunis Summit: the WGIG (See, Geneva Declaration of Principle, point 50 : "International Internet governance issues should be addressed in a coordinated manner. We ask the Secretary-General of the United Nations to set up a working group on Internet governance, in an open and inclusive process that ensures a mechanism for the full and active participation of governments, the private sector and civil society from both developing and developed countries, involving relevant intergovernmental and international organizations and forums, to investigate and make proposals for action, as appropriate, on the governance of Internet by 2005."

9 Four scenarios have been proposed by the WGIG in its final report (quoted footnote 2) to the WSIS for discussion. These scenarios were based on the following principles:

"35.The WGIG addressed the adequacy of current Internet governance arrangements in relation to the principles outlined in the final WSIS documents and came to the conclusion that some adjustments needed to be made to bring these arrangements more in line with the WSIS criteria of transparency, accountability, multilateralism and the need to address all public policy issues related to Internet governance in a coordinated manner. It grouped these issues in four clusters: a forum, global public policy and oversight, institutional coordination, and regional, sub regional and national coordination.

10 It must be recalled that amongst the different scenario proposed by the WGIG, a model including a better control and oversight by the Governments on the international private organisations was supported by a large majority of countries not only developing countries but

**3.** Three main points might be developed apart from the two WSIS conclusions on that issue. The first focuses on the basis of this concept and its meaning. The second intends to answer to the question, What new approach is proposed by the WSIS on this topic and do we need this new approach? The third is an attempt to sketch a comparison between the WSIS approach and the European Union approach developed recently by the Inter-institutional Agreement concluded between the European Parliament, European Commission and Council of Ministers, entitled: "Better Lawmaking"[11].

## Internet Governance: Why and What?

**4.** Point 48 of the Geneva Declaration of Principles might be considered as a good summary of the Internet governance concept and basis: "The *Internet has evolved from a global facility to the public and its governance should constitute a core issue of the Information Society agenda. The international management of the Internet should be multilateral, transparent and democratic, with the full involvement of governments, the private sector, and civil society and international organisations. It should ensure an equitable distribution of resources, facilitate access for all and ensure a stable and secure functioning of the Internet, taking into account multilingualism.*" This assertion addresses many issues to which we will come back later, like the so-called *"multistakeholder"* approach. At this point, we would like just to pinpoint, first, the basis of Internet governance which explains the relevance of this debate as a "core issue" of the Information Society agenda and, second, the regulatory concept to which Internet governance refers.

**5.** The Internet, asserts the Geneva declaration, has to be considered as a global public good. "Global"[12] means that the Internet network has become a worldwide infrastructure without any borders and must be kept as such. At first glance, this assertion might be viewed as obvious. However, one knows that the universal character of the Internet currently faces two major risks of fragmentation. The first

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also the European Union, which had joined the developing countries position at the last minute. Japan and US have notwithstanding this large majority maintained their position in favour of a quasi status quo.

11 This Inter-institutional Agreement concluded in October 2003 and signed the 16th of December 2003 ( Doc. 2003/C321/01, C 321/2 , Official Journal of the European Union 31.12.2003) is founded on a large number of previous documents and debates. See firstly the White Paper "European Governance" ( Com(2001) 428 final) submitted by the Commission and approved by the European Parliament Decision of October, the 9th 2003 (O.J. C 81 E/84, 31.3.2004). On this debate, see Y.POULLET, "ICT and Co-regulation : Towards a new regulatory Approach?, in Starting Points for ICT regulation", B.J. Koops and alii (ed.), T.M.C. Asser Press, ICT& Law 9, 2005, p. 247 and ff.

12 Another sense could be given to the concept. *"Global"* might also mean that the indefinite number of ICT services and products have invaded the entirety of our lives, following us everywhere, controlling all of our actions and more and more indispensable to our lives.

comes from states like China[13] (but in due course perhaps certain Islamic countries as well), deciding to have their own infrastructures separated from the rest of the Internet, but connected to it through gateways which permit the control of all incoming and outgoing communications, for political reasons. The second trend to the fragmentation is less well known. It relates to the development of large intranets by major companies in order to offer customers their own services. This risks creating a two-tier society, one with the full benefit of these intranets with added value, and the rest of the world using the common infrastructure, which will become poorer and poorer. In that perspective, the slogan "*Only one Internet for one world*" must be repeated even if this assertion does not exclude possibilities of divergences about the regulatory approach of this common network and about the content of this regulation.

**6.** "Public" undoubtedly means "accessible to everyone". This conception of the public character of the Internet pleads, as we said previously[14], for universal accessibility at a reasonable price to services of the infrastructure defined as a minimum requisite. It also implies the right to take benefit of the Internet's informational richness.[15] And finally it requires providing the capacity to participate actively within Information Society. The importance placed by the Geneva Declaration on educational programmes needed in order to make this dream possible translates this new right. Having recently visited the Niger, I have to confess that this universal access will or many years remain a "myth".

**7.** In order to maintain the Internet as a global resource and to achieve the dream of it becoming a public good, the Internet must be governed and regulated[16]. The term "regulation" is ambiguous for at least two reasons: the first regards the scope of the term; and the second regards the tools available for ensuring this regulation. The scope of governance might be defined either in a narrow or in a broad sense.

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13 On the Chinese Internet policy, see the special report : "China and the Internet : the reality, the people and the power of cybertalk", published April, the 27th, 2006, by the Economist and available on the website: http://www;economist.com/world/

14 See, supra, n° 3.

15 This idea of a "Public Domain Content" has been clearly promoted by the UNESCO. See, Point 15 of the *"Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace"*, adopted by the UNESCO General Conference at its 32nd session (Oct. 2003) : *"Member States should recognize and enact the right of universal online access to public and government-held records including information relevant for citizens in a modern democratic society, giving due account to confidentiality, privacy and national security concerns, as well as to intellectual property rights to the extent that they apply to the use of such information. International organizations should recognize and promulgate the right for each State to have access to essential data relating to its social or economic situation"*.

16 ...And its infrastructure financed. The problem of financing the infrastructure in poor countries is addressed partly by the creation of a " Universal Fund " whereof the creation has been requested during the Geneva WSIS preparation. The solution proposed by the Geneva WSIS and repeated by the Tunis WSIS to create a special fund alimented through donations and not structurally by a sort of TOLBIN tax on the electronic flows does not answer to the developing countries.

Traditionally, the concept of Internet governance covers only the regulation of what we might call the Internet's rare resources which are indispensable for ensuring the functioning of the network. That is, the allocation of domain names and IP addresses. Up to now, these tasks have been ruled by ICANN, a private international organisation[17]. The Tunis WSIS clearly rejected this narrow definition of the scope of Internet governance by referring to the broader definition proposed by the Working Group on Internet Governance created by the UN General Secretary according to his mandate given by the WSIS Conference[18]: "*A working definition of Internet Governance is the development and application by Governments, the private sector, and civil society, in their respective roles of shared principles, norms and rules, decision making procedures, and programmes that shape the evolution and use of the Internet.*"

**8.** Thus, according to the Tunis Agenda, Internet governance encompasses all the topics linked with the functioning and the unlimited uses of the Internet products and services, like privacy, intellectual property, consumer protection, electronic communications regulations, multilingualism, freedom of expression, cybercrime, etc. Notwithstanding this broad definition, it must be underlined that during the preparation of the second WSIS, during the debates on Internet governance, the attention focused mainly on the Internet Governance concept in the narrow sense. An explanation for this might be found in the fact that the US Government was particularly concerned to maintain its present domination on ICANN through subtle mechanisms like the Memorandum of Understanding signed between the ICANN and the US Department of Commerce19, which ensures a certain right to oppose to the US Government and certain control prerogatives particularly as regards the allocation of root servers. Any debate about a shift in the structure and management of ICANN was systematically blocked by US government representatives. This attitude effectively prohibited any debate about the significance of the extension of the Internet governance concept. The final outcome of all the discussion was to maintain ICANN outside of the rest of the Internet Governance, by dissociating artificially the so-called "operational management " of the Internet (the day-to-day operations) reserved to ICANN and the other "eldest " Internet Governance issues.

**9.** The second major point as regards the concept of "regulation" is the list of normative tools to which the concept refers. On that point, one might note the enlargement of the tools by which regulation might be expressed and enacted. The text mentions explicitly: "norms, decision-making procedures, and rules". It is quite noticeable that in the traditional way to regulate (i.e., public legislation),

17 As regards the ICANN organs, rules of procedure, have a look at the ICANN website available at : http://www.icann.org. .

18 On that point, see supra n° 2 in fine.

19 About this MoU concluded between The US Department of commerce and the ICANN, read the different articles written by M. FROOMKIN notably, "Of governments and Governance", Berkeley Technology Law Journal, n° 2, 199, available on the Internet at : http://www.law.berkeley.edu/journals/btlj/Articles/Vol14/Froomkin/html/reader.html and of the same author, "Wrong turn in Cyberspace: Using ICANN to round Around APA and the Constitution", Duke Law Journal, 2000, p. 17 and ff.

international treaties are not mentioned. So WSIS clearly encourages a multi-normative system and affords a great importance to self-regulatory or co-regulatory norms considered on an equal footing as the public regulations adopted according our Constitutions after a parliamentary debate. We will come back to this point (see, infra, n°15 and ff).

# II. New WSIS Principles related to Internet Governance

## A. An ambiguous techno-legal global approach

**10.** The first principle asserted by the WSIS should be stressed. Through different provisions enacted in their final declaration, the States' representatives present at WSIS recognize the importance of the technical issues in the shaping of the regulatory issues[20]. *"Governance encompasses both technical development and public policy."* This attitude is well-founded insofar as the technical choices might affect the legal issues. So, for example, the IETF norms, which have made possible the use of cookies, have a direct impact on Privacy issues and it is clear that the IPv6 norms launched by ICANN together with IETF create new threats as regards data protection[21]. In the other sense, it has to be recognized that through certain technical tools the effectiveness of certain rights directly derived from legal provisions is better guaranteed. For example, Digital Rights Management (DRM) systems are protecting the copyright of the author[22] better than our jurisdictions and legislative documents. So the recognition by WSIS of the potential impact of the technology on the regulatory framework justifies a reinforced dialog between computer scientists and the standardization bodies and the other regulatory partners and compels a clear request for a more transparent and debated discussion on the technologies and their impacts. Apart from these assertions, it would be nice to go a step further and to proclaim the necessity of a techno-legal approach which ensures that the technologies fit into the legal requirements and above that, bring an added value[23] in the effectiveness of these requirements.

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20 On the relationships between Technology and Law, see amongs others, D.L.BURK," Comments on 'Should ICT Regulation be undertaken at an International level", in Starting Point for ICT regulation, already quoted footnote 11, J. REIDENBERG, "Lex Informatica: The formulation of Information Policy through Technology", Texas Law Review, 1993, p. 553 and ff. , Y. POULLET, "Technology and Law: from alliance to challenges", in Information Quality Regulation: Foundations, ,Perspectives and Applications, U. Gasser (ed.), Baden-Baden, 2004.

21 L. LADID, "IPv6 Roadmap", in Foresight of the Internet, M.A. Delahaut (ed.), Institut Jules Destrée, Namur, 2005, 395 and ff.

22 About DRM, S. DUSOLLIER, Droits d'auteur et protection des oeuvres dans l'univers numériques, Thèse, Larcier, 2005.

23 On the " added value principle ", see notably the conclusions of the EU e-confidence Forum ( http://www.econfidence.jrc.it/default ). Authors speak willingly about the " Rights Enhancing Technologies". It is quite obvious that the Technology might help as regards the enforcement of the legal rights granted by the legislative texts. On that point with certain criticisms about the fact that Technology deserves necessarily the legislative objectives, read

**11.** Certain declarations in the Tunis Agenda indicate that this conclusion in favour of such a techno-legal approach has not yet been accepted insofar as the agenda maintains a partition of roles between the Government, on one hand, and the worldwide technical and private organisations (particularly ICANN), on the other. Point 69 of the Tunis Agenda asserts that governments have "*to carry their roles and responsibilities in international policy issues pertaining to the Internet*", and adds immediately "*but not in the day to day technical and operational matters that do not impact on international policy issues*".

In other words, the WSIS blows hot and cold. On one hand, WSIS asserts the need for Internet Governance that takes into account all aspects of technical development but at the same time, on the other hand, WSIS is unable to assert definitively that all technical developments have to be controlled in a way that ensure their compliance with regulations. An ambiguous separation is maintained between operational management outside of the control of the public governance and fixation of essential public objectives. Internet Governance remains divided into two regulatory spheres separated[24] and from points 55 and 57 of the Tunis Agenda, WSIS makes clear according to the US pressures[25] that there is no demand to modify the present situation: " *We recognise that the existing arrangements for Internet governance have worked effectively to make the Internet the highly robust, dynamic and geographically diverse medium that is today, with the private sector taking the lead in day to day operations, and with innovation and value creation at the edges...The security and stability of the Internet must be maintained.*". These provisions refer to ICANN's present competencies, which must be kept outside of the sphere of action of governments[26], except for the role already played by the Governmental Advisory Committee (the so-called GAC) imposed by the European Union on ICANN a few years ago[27].

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P. SCHWARTZ, "Beyond Lessig's Code for Internet Privacy", Wisconsin Law Review, 2000, p. 743 and ff (especially, p. 787).

24 About this partition into two regulatory worlds, the reflections still valuable proposed by REIDENBERG in "Rules of the Road for Global Electronic Highways: Merging the Trade and Technological Paradigms", 6 Harvard Journal of Law and Technology, 1993, p. 287. More recently, G. SARTOR, „Virtual Rules and Internet Law", in Informatik- Wirtschaft-Recht : Regulierung in der Wissensgeselleschaft, Festschrift für W. Kilian, J. Taeger and A. Wiebe (eds), Nomos Verlagsgesellschaft, Baden-Baden, 2004, p; 571.

25 "The US government will continue to maintain 'oversight' of ICANN and prevent its focus' from straying from technical coordination."( McCullagh," US to retain control of Internet domain names", New York times, July 1, 2005.

26 See however the Point 68 of the Tunis Agenda : " We recognise that all governments should have an aqual role and responsibility for International Internet Governance and for ensuring the Stability, security and continuity of the Internet." This point taking again the same wording than the Point 57 seems quite contradictory with this one.

27 See the gac.icann.org: The web site of ICANN's Governmental Advisory Committee (GAC), which considers and advises ICANN on its activities as they relate to concerns of governments, particularly matters where there may be an interaction between ICANN's policies and various laws and international agreements or where they may affect public policy issues. On its role, see notably, C. WILKINSON," Transversal Issues of the Internet Governance", in Foresight of the Internet, already quoted supra footnote 21.

Perhaps the termination next year of the Memorandum of Understanding signed between the US Department of Commerce and ICANN, whereby the US Government exercises secret but effective control on ICANN Board decisions, will lead to a more international form of control operated by international public organisations. That was the scenario supported by a large majority of countries during the debates preceding the WSIS. At this moment, the artificial distinction between two regulatory worlds - the day-to-day technical and operational management, and the public policy objectives - prevents a real assessment of the compliance of the technical developments with the public policy goals asserted by the Governments or public international organisations.

## B. A pro-active participatory democracy opened to all stakeholders

**12.** The second principle also merits our attention. WSIS strongly and proactively supports "participatory" democracy or "multistakeholder governance". " There is a need to initiate, reinforce, as appropriate, a transparent, democratic, and multilateral process, with the participation of governments, private sector, civil society and international organisations, in their respective roles." The idea of promoting this multistakeholder approach of governance- a "leitmotiv" throughout the Tunis documents (it was already present in the Geneva documents)- is central in the Tunis document. It means two different things: the first refers to the need for ensuring in Internet governance the involvement of all categories of interested parties; the second confers to each of these stakeholders a particular role in governance.

### a. The stakeholders

**13.** On this second point, the Tunis Agenda again takes the principle already enacted by the Geneva Principles: "The management of the Internet encompasses both technical and public policy issues and should involve all stakeholders and relevant intergovernmental and international organizations. In this respect it is recognized that:

*a) Policy authority for Internet-related public policy issues is the sovereign right of States. They have rights and responsibilities for international Internet-related public policy issues;*

*b) The private sector has had and should continue to have an important role in the development of the Internet, both in the technical and economic fields;*

*c) Civil society has also played an important role on Internet matters, especially at community level, and should continue to play such a role;*

*d) Intergovernmental organizations have had and should continue to have a facilitating role in the coordination of Internet-related public policy issues;*

*e) International organizations have also had and should continue to have an important role in the development of Internet-related technical standards and relevant policies. ".*

Two additional actors are indicated by the Tunis Agenda, although the role they play must be seen within the context of the already mentioned stakeholders: *"We recognize the valuable contribution by the academic and technical communities within those stakeholder groups mentioned in paragraph 35 (the above mentioned stakeholders) to the evolution, functioning and development of the Internet. "*

**14.** Nevertheless, the separation of roles proposed by the WSIS among the different parties must be stressed. The major and prominent role is assigned to the national governments as regards major decisions on *"Internet related public policy"*. The assertion is meaningful insofar as despite the ever greater interdependency created among the nations by the global network of the Internet; WSIS reasserts the principle of sovereignty of each nation in its choice of the essential public policy objectives. Perhaps this assertion might be viewed as purely wishful at a moment where the global surveillance mechanisms made possible by the Internet[28] and the global Information Society economy renders this sovereignty principle in part as outdated. Apart from now, sovereignty will be considered more and more both as the right to regulate independently the domestic aspects of the public policy regulation of the Internet and as regards the increasing international aspects of this public policy as the right for each nation to be heard and to participate in the international governance on an equal footing. The distinction between both aspects remains unclear. Is it still possible to assert the principle of "*subsidiarity*" when the Internet is abolishing frontiers and makes difficult any national policies[29] except for powerful countries or countries working together in regional organisations like European Union[30]?

**15.** The second role is to be played by the private sector. The principle quoted above underlines the "important role" the private sector has as regards the economic and technical aspects. This assertion is at least ambiguous. Does it mean that the regulation on economic aspects like the development of e-commerce or on technical aspects must be initiated by the private sector and that technical development is in the hands primarily of private companies or does it mean simply that the private sector is the leader of the development of both the e-economy and the technology? It is quite clear that the second significance is so obvious in a liberalised market that only the first meaning might be retained. In that perspective it means that

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28 So, ECHELON, the US and UK system of surveillance of electronic communications conveyed by satellite illustrates that our democracy might be more and more controlled by foreign governments through the technology means. The E.U Parliament has severely criticised precisely for this reason the ECHELON system and adopted a strong resolution claiming for a reassertion of the EU sovereignty against this global surveillance of EU citizens including business and administrations. On the ECHELON case, see D. YERNAULT, " De la fiction à la réalité: le programme d'espionnage électronique global " Echelon" et la responsabilité internationale des Etats au regard de la convention européenne des droits de l'homme ", in Rev. Belge de droit international, 2000/1, p. 135 and ff.

29 On that issue, the Discussion Paper published by the Law Commission of Canada, " Crossing borders : Law in a globalized World", March 2006.

30 About the EU policy on the Internet, our reflections in Y. POULLET," A European Internet Law ?", in Informatik-Wirtschaft-Recht, already quoted supra footnote 24, p. 533 and ff.

international business associations like the Global Business Dialog (GBDe)[31], the International Chamber of commerce (ICC) or the Business and Advisory Committee (BIAC) have a leading role as regards regulatory initiatives concerning public policy issues which might favour the economic development of the Internet[32]. If we accept this second meaning we might consider that WSIS pleads in favour of self-regulatory norms avoiding as far as it is possible the intervention of the State.

**16.** The role of the Civil Society that means the intervention of Civil liberties Association[33], Trade Unions and Consumer Protection associations, remains, according to the wording used by the WSIS, unclear. What does mean playing a role "on Internet matters, especially at the Community level"? Their role seems limited to disseminate the different ICT products and services by creating a certain awareness of their benefits among people envisaged at a local or professional level. That interpretation seems however in contradiction with the principle of the multi-stakeholder approach that implies a real participation of all interested parties including the Civil Society representatives in the definition of the regulatory solutions to the Internet issues and challenges at all the levels: participation in the drafting, control and evaluation of the self-regulatory norms[34], active involvement in the debates around the public policy issues and initiatives for ensuring the universal access to the Information Society. Perhaps a more positive wording of the role of the Civil Society would have been welcomed. So, a positive obligation towards the private sector to ensure this participation and the duty of the Governments to support the NGOs in order to give them the opportunity to play effectively their role in the Internet governance would have been needed. One knows the financial and human weaknesses of the Civil Society unable till now to play the role of a real counter power vis-à-vis the Business Associations in the discussions about the development of the Internet Society. On that point, we might make reference to the EU policy that

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31 GBDe( http://www.gbde.org ) is an initiative of some big company chiefs of the calibre of America Online, Time Warner, Fujitsu, MCI, KODAK , ABN AMRO, Vivendi Universal, Alcatel, etc. which examines issues related to security, consumer confidence, IPR, Taxation questions and personal data questions. Different Summits have been organised by this worldwide private organisation (Tokyo, 2001, New York, 2003, Kuala Lumpur, 2004). These annual summits are called the "Davos of e-commerce". The EU Commission report, the famous Bangemann report issued in 1999, was definitively at the origin of this association by pleading strongly in favour of the leadership of the market for regulating the development of the Information Society. On this organisation, C. PRINS," Should ICT regulation be undertaken at an international level?", in Starting points for ICT regulation, already quoted, footnote 11,p.162 and ff.

32 The three quoted organisations ( ICC, GBDe and BIAC) have signed in that sense an agreement with OECD on the problems of electronic commerce; agreement signed on December the 13th, 2000: "The GBDe, the ICC and the BIAC are working together to further their international cooperation in all areas of general politics linked to the Internet (on the full-range of public policy issues arising from the Internet)."

33 Most of these Civil Liberties Associations active in the field like EPIC, ACLU, etc. are mainly located in US (except the EU based EDRI).

34 As regards the consumer protection we underline the Transatlantic dialog between Consumer and Business Associations ( T.A.C.D.)

foresees the obligation to a dialog between the private sector and the Civil Society representatives[35].

**17.** Finally two kinds of international organisations are mentioned: the intergovernmental ones (all international public bodies at the global level but also at the regional level), and international organisations (mainly private organisations acting at a global level, such as IETF, ICANN, W3C, ...). Point 35 of the Tunis Agenda describes the role of the first ones as pure facilitators and coordinators of Internet public policy issues. It is quite clear that their role, as a result of the global nature of the Internet, will increase. However, no direct competence is granted to them by the Geneva or Tunis documents, even though numerous regulatory initiatives (unfortunately not sufficiently coordinated) have been taken by most of them. We will come back to the problem caused by the multiplicity of international public organisations and the timid progress proposed by the WSIS on that field. As regards the second kind of actors, the text speaks about their "important role" in relation to technical standards and relevant policies. This assertion might be considered as an international consecration of the competence of these private international non-profit organisations born with the Internet[36] and having developed progressively their regulatory competences on the net[37] Let us recall that the Tunis Agenda maintains a certain autonomy (supra, n° 11) to these organisations for regulating the technical questions and, as asserted by Point 35," the relevant policies" linked to these technical standards. What does the extension of the prerogatives of these bodies in the "definition of the policies linked with technical standards" mean? Everyone agrees that with the philosophy of the W3C, openness and decentralisation have been incorporated into the technical norms of the WWW to the point that today they are defined as its characteristics, but to what extent this philosophy of the Internet might or might not be endorsed by certain Governments which the WSIS proclaims as independent? Another example: if the W3C imposes the P3P as the adequate means for protecting privacy through an agreement between all terminal equipment producers, to what extent might a so-called sovereign State refuse this standard as providing an insufficient data protection[38]?

### b. "Participative democracy": Who are the winners and the losers?

**18.** This multi-stakeholders approach might be held as a substitute for the traditional "representative and national democracy", which might be considered as being unable

35 See infra, n° 24

36 So IETF is born in 1986 at a moment where the Internet was just a scientific network joining a few American universities and certain rare private research laboratories. The W3C was founded in 1994, the same year as the WWW protocol.

37 So IETF is born in 1986 at a moment where the Internet was just a scientific network joining a few American universities and certain rare private research laboratories. The W3C was founded in 1994, the same year as the WWW protocol.

38 See, on this point the debate between LESSIG, ROTHENBERG and SCHWARTZ described in the author's article, "Technology and the Law: from Alliance to Challenges", quoted supra footnote n°20.

to respond to the challenging questions of a global Information Society. However, it raises a number of questions. For example, it seems that the distinction between the prominent roles played by the national States in the definition of public policy, on one hand, and by private actors as regards the technical and economic aspects, on the other might be questioned insofar as all the societal aspects, including technological and economic developments, are interrelated and might not be dissociated as before. The procedures by which this new governance model might function are not defined and one might fear that the partners playing in this multi-stakeholders' democracy are not on an equal footing. Among the States, it is quite obvious that certain powerful countries might impose to others their points of view. Certain commentators are denouncing the lack of international organisations uniting the civil society associations at a global level and thus their intrinsic weakness in the global dialogue.

**19.** The Internet Governance Forum (IGF) set up by the Tunis WSIS might be seen as a first implementation of this new democracy but its creation and the limits of its competence illustrate quite clearly the difficulty to translate concretely the new approach. If the mandate given to the IGF through the Tunis Agenda is to discuss "public policy objectives", its statute must be elaborated in order to join together all stakeholders, the same Agenda demands that this IGF should not be allowed to exercise competences that are already assigned to already existing international organisations. Much care will need to be taken to ensure thqt the topics submitted to this Forum are limited to secondary regulatory questions like spam and cybercrime. The problems of how to organise the representation of all stakeholders both on a geographical and on a sectoral basis and how the resolution might be elaborated and approved. This has not yet been solved.

**20.** The two WSIS summits intend to formalise a new equilibrium between the policy makers of the Information Society. In that context we might consider that certain international organisations, namely those in charge of the WSIS follow-up[39]: UNESCO[40] and to a lesser extent ITU, have gained increasing power over the other international public organisations. It is quite instructive to underline that UNESCO

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39 See, the Point 103 of the Tunis Agenda: "We invite UN agencies and other intergovernmental organizations, in line with UNGA Resolution 57/270 B, to facilitate activities among different stakeholders, including civil society and the business sector, to help national governments in their implementation efforts. We request the UN Secretary-General, in consultation with members of the UN system Chief Executives Board for coordination (CEB), to establish, within the CEB, a UN Group on the Information Society consisting of the relevant UN bodies and organizations, with the mandate to facilitate the implementation of WSIS outcomes, and to suggest to CEB that, in considering lead agency(ies) of this Group, it takes into consideration the experience of, and activities in the WSIS process undertaken by, ITU, UNESCO and UNDP".

40 So it is quite clear that the recommendation issued and adopted by UNESCO in 2003 about "Recommendation concerning the Promotion and Use of Multilingualism and Universal Access to Cyberspace", adopted by the Unesco General Conference at its 32nd session (Oct. 2003) was definitively a sign of the UNESCO will to play an important role in the WSIS discussion and to influence the discussion of the WSIS summit.

and ITU[41] are explicitly designated for "*moderating and facilitating*", each in its sphere of competence, the dialogue between the stakeholders in order to achieve the Geneva Plan of Action[42].

That reinforcement of these institutions corresponds to the express wish of the UN Secretary General, who gave them the mandate to organise the two WSIS conferences just at the time when UNESCO and the ITU were considered "poor and weak" in comparison with other international public bodies like WIPO or WTO, and as a result of the increasing power of the international private organisations. On that point, one might recall that at the moment in 1992 where discussions took place as regards the adoption of the TCP/IP norms in order to ensure a full interoperability of the Internet network, ISO and ITU were unable to face the challenge and the supple IETF organisation founded on the *"rough consensus principle"* appeared more appropriate to fix the norms even without official delegation from these public international organisations[43]. UNESCO's competence in issues related to Internet governance was challenged to the benefit of WTO and OECD (on issues related to international commerce) and WIPO (on IPR and Internet issues).

**21.** WSIS was also an opportunity for asserting the absolute need for a better coordination between the different international public bodies, beyond their traditional partition of competences. Up to the present, each international organisation was in charge of a specific topic without taking into account the need for a global or at least horizontal approach for regulating the Internet. IPR issues cannot not be discussed without taking into account the impact of the regulatory solutions on the problems of access to information, computer crime and privacy issues. The legitimate interests and rights of copyright holders favoured by the WIPO must be evaluated vis-à-vis the cultural and scientific developments requirements, which are among UNESCO's concerns and, as a possible trade barrier, within the scope of WTO. Finally, it was granted to ECOSOC, a UN General Assembly division and, more particularly inside ECOSOC, the UN Commission on Science and Technology for Development44, the mission to "oversee the system wide follow-up of the Geneva and Tunis *outcomes of WSIS*".. By this overseeing activity, a certain control of the dialog of the stakeholders and a competence of initiative was granted to the public international organisations by virtue of the better coordination between them and by strengthening of their mandates, the WSIS gives to the public authority an unique chance to regain the leadership of Internet governance even if at the same

41 UNDP is also in charge of certain missions (see Point 103 of the Tunis Agenda, quoted supra footnote 39.

42 Annex A of the Tunis Agenda offers the list of areas which are under the responsibilities of the UN Agencies and particularly of these three leading UN Agencies. The UNESCO has definitively the prominent role.

43 On that debate, read J. BERLEUR- Y. POULLET, "What Governance and regulations for the Internet ? Ethical issues", in The Information Society: Emerging Landscapes, Proceedings of the IFIP Intern. Conference, Turku, June 27-29, (ed. C. Zielinsky, P. Duquesnoy and K.Kimppa), Springer, IFIP, 2005, p. 171.

44 ...whose composition, mandate and agenda must be renewed, "including the strengthening of the Commission, taking into account the multi-stakeholders approach"( Point 105 of the Tunis Agenda). See also,

time, the WSIS documents for the first time grant an important role to private organisations without claiming any modification of their statutes[45] or putting them under the tutelage of the public authorities.

**22.** All in all, the movement initiated by WSIS in favour of a new Internet governance framework is thus slight insofar as it does not imply any revolution in the present situation. It is also full of ambiguity insofar as the WSIS documents might be considered either as a victory of the new private regulatory forces, or as being behind the recognisance of these new regulators as a way of reintroducing public authorities as leaders. Furthermore, the regulatory framework sketched out by WSIS, if it envisages different regulating actors and roles, insufficiently elucidates the links between the norms elaborated by them. So many questions still remain. To what extent should the private sector ensure civil society participation in the drafting procedure envisaged for the self-regulatory norms? Does this self-regulation have to comply with the various norms enacted by national or international public bodies? How can the control of this compliance be ensured? Do we still need public regulatory norms? To answer these questions, a short analysis of the recent European inter-institutional agreement concluded between the European Parliament, the European Council of Ministers and the European Commission of the European Union entitled *"Better Law-making"* might be useful.

## III. Towards a new regulatory framework? Beyond self-regulation and co-regulation: the "Better Law-making" European model as a solution?

**23.** I would like to comment very briefly on the recent Inter-institutional agreement entitled "Better Law-making" concluded between the three legislative authorities of the European Union - the European Parliament, the European Commission and the Council of Ministers - in order to ameliorate the legislative production and quality of European legislation[46]. On the role of the legislative action, Point 16 states: *"The three Institutions recall the Community's obligation to legislate only where it is necessary, in accordance with the Protocol on the application of the principles of subsidiarity and proportionality. They recognise the need to use, in suitable cases or where the Treaty does not specifically require the use of a legal instrument, alternative regulation mechanisms."*

The text clearly asserts the double "subsidiarity" of the legislative approach[47] : the first of these was already asserted as a fundamental principle of the European Union according to article 5 of the European Treaty, which states that European

45 Except the general call for a more effective multi-stakeholder approach: "A multi-stakeholder approach should be adopted, as far as possible, at all levels". This purely votive assertion is however insufficiently precise to assert that modification are really requested.

46 See, the references given supra, footnote 11. The agreement does envisage all the societal issues and not only those raised by the Information Society development even if these specific issues are mentioned as a test case by the White paper.

47 On this principe, F. DELPEREE (éd.), " Le principe de subsidiarité ", Bib. Faculté de Droit de l'UCL, LGDJ-Bruylant, 2002.

Union institutions may only act on matters that cannot be more adequately ruled at an inferior level[48]. According to that statement, the "subsidiarity" principle asserts clearly that local solutions are still needed and must be preferred to international or global solutions even if this international or European level might procure the general framework wherein these local solutions will take place and interoperate: "Think Global, Act locally". In other words, local or sectoral solutions are the best way to take into account the cultural and business peculiarities of each situation and to develop adequate solutions. Otherwise the regulation will be reduced to an enumeration of vague and broad common principles.

In addition, the combination of the subsidiarity and proportionality principles leads the European Agreement to additional reflections[49]. It imposes the rule that one should not legislate when there are other means to achieve public objectives, particularly self-regulation[50] or to legislate only to the extent necessary to set these public objectives leaving it to the private sector to decide on the right way to reach them; co-regulation. Thus, the Agreement envisages these two principles as a way to validate and to fix the limits of the coexistence between the traditional regulatory model: the public one and the so-called "modern" ones: self-regulation and co-regulation. Everything that can be better solved by co-regulation or self-regulation must be fixed in such ways. Many prestigious authors have broadly asserted the complementarities of the two regulatory models[51].

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48 About this first traditional meaning, see J. VERHOEVEN, " Analyse du contenu et de la portée du principe de subsidiarité ", in F. DELPEREE, quoted footnote 47, p. 376 et s.

49 See on that point, the TIMSIT's reflections (" Les deux corps du droit- essai sur la notion de régulation ", Rev. Française d'Admin. Publique, 1996, p. 375 and ff.) about this new normative approach : " Lorsque l'Etat moderne est apparu, il a en effet trouvé sa traduction dans une droit qui conservait des origines historiques de son Auteur, l'Etat, le caractère mystique et abstrait dont celui-ci était paré. C'est ce droit qui a été le premier corps du droit- un droit abstrait, général et désincarné que j'appelle le droit-réglementation....Abstrait et désincarné il ne correspond plus aux exigences de la gestion des sociétés post-modernes. Trop complexes pour être gérées aussi généralement, abstraitement et pour ainsi dire d'aussi loin, elles requièrent un autre droit- actuellement en formation- qui se caractérise, au contraire par son adaptation au concret, son rapprochement des individus, son adéquation au contexte exact des sociétés qu'il prétend régir. Concret, individualisé, contextualisé, c'est un droit que j'appelle de régulation. Le paradoxe est que ces deux corps du droit-de réglementation et de régulation- le second n'a été jusqu'à présent, ni connu, ni reconnu... " ( p.377 ).

50 About the different merits of the self-regulation compared to the State regulation, read the good synthesis and the references proposed by C. LAZARO ( "Synthèse des débats", in Gouvernance de la société de l'information, Berleur et alii (ed.), Cahier du Crid, n° 22, p. 161 and ff.). See also, B.J. KOOPS, M.LIPS, S.NOUWT, C.PRINS and M. SCHELLEKENS, "Should self-regulation be the starting point?", in Starting Point for ICT regulation, ,quoted footnote 11

51 See recently, P.TRUDEL, " L'influence d'Internet sur la production du droit ", in Le droit international de l'Internet, Bruylant, Bruxelles, 2002,p. 87 and ff. : " Pour y obtenir des énoncés normatifs efficaces, il faut exprimer le droit en ménageant des ouvertures vers les autres normativités. " . Cf. also, A.M. SLAUGHTER, "The real New World Order", (1997) 76 Foreign Affairs, pp.183-184; J. REIDENBERG," Governing Networks and Cyberspace Rule Making", 45 Emory Law Journal, 911 (1996) ; E. KATSCH, " Law in a Digital World, New-York ", Oxford University Press, 1995, p. 20 and ff. .This principle of complementarities is developed broadly in the Environmental regulation where one assists to a multiplication of self-regulatory and co-regulatory beyond the legislative intervention. On this point, see

**24.** These principles enacted, the Agreement imposes certain limits on the alternative modes of regulation, self- and co-regulation. Point 17 precise: "*The Commission will ensure that any use of co-regulation or self-regulation is always consistent with Community law and that it meets the criteria of transparency (in particular the publicising of agreements) and representativeness of the parties involved. It must also represent added value for the general interest. These mechanisms will not be applicable where fundamental rights or important political options are at stake or in situations where the rules must be applied in a uniform fashion in all Member States. They must ensure swift and flexible regulation which does not affect the principles of competition or the unity of the internal market*". The text stresses three main conditions for the enactment of self-regulatory or co-regulatory norms. As regards the application of the triple criteria of the legal validity of a norm[52], one underlines:

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notably, B. JADOT, " Le pouvoir de gérer les questions d'environnement, faire confiance a priori au " privé " ou au " public ", in F. Delpérée (ed.), Le principe de subsidiarité, op. cit., p. 212 et s.

52 The three criteria of the validity of a self-or co-regulation have been extensively developed by the author in a previous essay taking into account the reflections proposed by R. SUMMERS (Y. POULLET, "How to regulate Internet : New Paradigms for Internet Governance", in Variations sur le droit de la société de l'information, J. Berleur et alii (ed.,) Cahier du CRID, n° 20, p. 130 et s. These three criteria are defined as follows:

"The "legitimacy" is "source oriented and underlines the question of the authors of a norm. To what extent, might the legal system accept a norm elaborated outside of the actors designated by the Constitution or under constitutional rules? This quality of the norm means that the authorities in charge of the norm promulgation must be habilitated for doing that by the community or communities of the persons which will have to respect the rule they have enacted. This legitimacy is obvious as regards the traditional State authorities acting in conformity with the competence devoted to them by the Constitution. It is less obvious when the regulation is the expression of private actors themselves as it is the case with self-regulation, particularly when it is the fact of certain obscure associations or even of private companies able to impose their technical standards.

-The "conformity" is " content oriented " and designates the compliance of normative content vis-à-vis fundamental society values, those embedded undoubtedly in the legal texts but also beyond that those considered as ethical values to be taken into account by the legal system. Again this criterion is quite easy to satisfy and to verify in case of traditional texts issued by governmental authorities insofar these texts must be taken in consideration of already existing rules with superior values. It seems more intricate to satisfy to this criterion when the compliance with existing legislative text is not systematically checked insofar these texts are not existing or not clearly identified. Indeed self-regulation is often a way to avoid the traditional and constitutionally foreseen regulatory methods of rule-making.

- Finally, the "effectiveness" is "respect oriented". To what extent, a norm will be effectively respected by those to whom the norm is addressed? So, the question about the information about the existence of the norms, about the sanctions and the way by which they might be obtained are central for determining the effectiveness of a norm. By this criterion, one means in particular the fact for the addressees of the norm to be aware of the content of the norm but also for norms to foresee a cost for its non respect by addresses who are so stimulated to follow the rule. "

- As regards the "legitimacy" criterion: the text requires the "representativeness" of the parties involved and the transparency of the procedures followed within the self- or co-regulatory process.
- As regards the "conformity" criterion, the principle of "added value" is repeated. The mechanisms may be used on the basis of criteria defined in the legislative Act. The idea is again to fight against the rigidity of the legislative solutions and the need to have a supple mechanism for ensuring a continuous adaptation to the problems and sectors concerned. The European Commission ensures the conformity also through mechanisms of notification even control[53].
- Finally, as regards the "effectiveness" criterion the co-regulation mechanism is deemed as being the right way to attain the objectives defined by the legislative authorities. The main "added value"[54] of the self-regulation or co-regulation relies on this criterion insofar co-regulation might set up enforcement mechanisms more adapted, rapid and efficient (through label, accreditation, standardization and ADR mechanisms) than the traditional judicial remedies.

**25.** Points 17 and 22 of the Inter-institutional Agreement define both co-regulation and self-regulation: As regards self-regulation, point 22 stipulates: "Self-*regulation is defined as the possibility for economic operators, the social partners, non-governmental organisations*

or associations to adopt amongst themselves and for themselves common guidelines at European level (particularly codes of practice or sectoral agreements). As a general rule, this type of voluntary initiative does not imply that the Institutions have adopted any particular stance, in particular where such initiatives are undertaken in areas which are not covered by the Treaties or in which the Union has not hitherto legislated. As one of its responsibilities, the Commission will scrutinise self-regulation practices in order to verify that they comply with the provisions of the EC Treaty."

The European conception of co-regulation envisages this mechanism not as a way to prepare future public regulation[55] but as a tool for refining the content of the

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53 " These measures may provide, for example, for the regular supply of information by the Commission to the legislative authority on follow up to application on for a revision clause under which the Commission will report at the end of a specific period, ... " (Inter institutional Agreement, Point 21 in fine).

54 The "added value" principle has been enacted quite clearly by the "e-confidence forum" settled up by the DG Sanco in order to define key principles as regards the acceptability of the self-regulatory methods (code of conduct, labelling system and ODR.). As regards these principles, see the e-confidence website available at : http://www.econfidence.jrc.it/default/htm. These principles and more broadly the attitude of the E.U authorities v. à v. the self-regulation have been commented by the author in : " Vues de Bruxelles: Un droit européen de l'Internet ?", Le droit international de l'Internet, quoted footnote 49., p.165 and ff.

55 Without denying the interest of a close cooperation between public and private players in the preliminary consultation phase, which will lead to the adoption of a legislative text, the European Agreement distinguishes clearly this preliminary discussion and the co-regulatory mechanisms. The first concern is envisaged through the obligation imposed to the European bodies to ensure the participation of all interest stakeholders at any step of the legislative process. As pointed out by the White Paper (EU Commission White Paper, "*European*

regulation enacted by the public bodies and for implementing concretely it. By doing that, the Agreement underlines the essential place of the co-regulation.: *"Co-regulation means the mechanisms whereby a community legislative act entrusts the attainment of the objectives defined by the legislative authority to parties which are recognized in the field (such as economic operators, the social partners, non governmental organisations, or associations)".*

**26.** This definition induces a clear separation of the responsibilities of the State, on one side, and the private sector and other interested parties, on the other, in the regulatory process: the legislative authorities have to fix the essential public policy objectives, when the means by which they are met, are fixed together by the public and the private sectors. Apart from defining the end result and objectives fixed by the legislative instruments, the private sector is mainly responsible for providing the short answer to the question: "How should they be implemented?" This separation of responsibilities seems precisely that promoted also by the WSIS Declaration of Principles in Point 49: *"Policy authorities for Internet related public policy is the sovereign right of States ... the private sector has had and should continue to have an important role in the development of the Internet, both the technical and economic fields".* So, it is clear with the European text that public and private orderings are not on the same footing. There is a sort of hierarchy insofar as the co-regulation is viewed not as a substitute for public intervention but as a way to achieve (choice of the means) the end objectives imposed by the framework fixed by the State.

**27.** A last remark might be drawn from the text. The European approach as regards co-regulation is fundamentally a "top-down approach" [56] rather than a "bottom up approach" following the distinction proposed by the Mandelkern Report (German Bundesministerium des Innern (BMI)[57]). As regards self-regulation, more flexibility is given to the private sector insofar as Point 22 underlines it: *"such initiatives are undertaken in areas which are not covered by the Treaties or in which the Union has not hitherto legislated* ". But if self-regulation is left to private initiatives, the State has to ensure a certain control on this.

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*Governance", ( COM(2001)428, final*,p.12) whose content has been used as the basis for the Inter institutional Agreement: *"the quality, relevance and effectiveness of EU policies depend as ensuring wide participation throughout the policy chain – from conception to implementation. Improved participation is likely creating more confidence in the end result and in Institutions which deliver policies*". So, the White Paper does suggest a "more effective and transparent consultation at the heart of E.U. policy-shaping" through multiple channels: advisory committees, hearings, on-line consultations

56 See on that point, A. MASSIMO, "The "Better Regulation" Action plan and the Framework Action on up-date and simplifying the Community Acquis", Roma, Oct. 2003 availaible at http://www.astrid-online.it/qualitate/regolazion/Riunione-d/Iniziative/EC-Presentazione-Roma_def.ppt

57 Mandelkern Report, „Modern Staat-Modern Verwaltung Der Mandelkern-Bericht : Auf dem Weg zu besseren Gesetzen" available at: http://www.staat-modern.de/Anlage/original_548848/

By the "top-down approach" qualified also as the "new approach"[58] one considers that the essential objectives, fundamental mechanisms and mechanisms as regards the implementation and the control of these objectives must be regulated by Governmental regulations and insofar as it is possible by legislation.

On the other extreme, the "bottom up approach"[59] designates any self-regulatory mechanism at a certain moment transformed or taken into account by Public Authorities in the drafting of a new legislation.

Schultz and Held[60] distinguish four cases illustrating the two approaches:

- A legislative text provides the co-regulatory mechanisms and encourages actors of the involved private sector to transpose by self-regulation the objectives pursued by the legislation (top-down approach)
- Self-regulatory mechanisms are surveyed or controlled by the State (bottom to top approach)
- Self-regulatory mechanisms developed in a first step outside of all intervention of the State are integrated after within a legislative text (bottom to top approach).
- Public Actors and Private actors are cooperating under diverse arrangements. Through their complementary and additional interventions which are placed on equal footing, a better enforcement is given to certain rules (bottom up approach).

**28.** This classification is interesting when we come back on the WSIS debate on Internet governance. The WIPO Internet Domain Name jurisdictional procedure might be considered as an example of co-regulation in this last sense or, as Froomkin[61] called it, as a "semi private process" that means "a cooperative endeavour between a public body and private interests that is designed to create a body of rules enforced by some mechanism other than direct promulgation by the public body"[62].In the same vein, the Uniform Dispute Resolutions Procedures rules have been drafted by an international public body not as intergovernmental resolution[63] or convention but as a simple Experts' Report approved at the end by

58 As asserted by the European Commission White Paper, 'European Governance', COM (2001) 130 final, p. 7.

59 C. PALZER, " La co-régulation en Europe : conditions générales de mise en œuvre des cadres co-régulateurs en Europe ", IRIS plus, 2002-6 ; White Paper, quoted footnote 56, p. 9

60 W. SCHULTZ – T. HELD, „Regulierte Selbstregulierung als Form modernen Regierens", Hans Budow-Institute für Medienforschung, Hamburg, Oct. 2001, available at: http://www.vrz.uni.hamburg.de/hans-bredow-institute/publikationen/apapiere/8selfreg.pdf

61 M. FROOMKIN," Semi-private international rule making", in Regulating the Global Information Society, C.T. Marsden (ed.), Frontledge, London-New York, 2000, p. 211 and s. ; From the same author, "Wrong Turn in Cyberspace: Using ICANN to route around APA and the Constitution", 50 Duke Law Journal, 2000, p. 17 and ff.

62 According to FROOMKIN, semi private rule-making should not be confused with either negotiated rulemaking a Government agency or other public body meets with representatives of the group who will be affected by the regulation, and seeks to find agreement on rules that can be promulgated and enforced by the Government. True self regulation excludes the participation of a public body

63 As a follow-up to the US White Paper:" Statement of Policy on Management of Internet Names and Addresses" (U.S. Department of Commerce, 1998), the World Intellectual Property Organisation (WIPO) convened an international process to develop recommendations on certain intellectual Property issues associated with Internet domain names (First Internet Domain Name Process: Compatibility between trademarks and domain names (started July 8,

ICANN[64] a private non-profit US organization. Without taking again all the details of the WIPO drafting Procedure, broadly criticized by number of authors, one might conclude with Froomkin that: *"A semi-private process led by a public body (like the WIPO Internet Domain Name Process) risks combining some of the worst features of both traditional regulation and private ordering: opaque decision-making is easy. In some cases, the process may be managed by body acting outside its jurisdiction. The public-private blind may also insulate the process from judicial review since it falls outside the categories that courts would tend to think of a within their purview"*[65].

All these questions assertions might be also addressed as regards the functioning of ICANN itself. The origin of ICANN demonstrates the deep link between the US government and this "independent" private body[66]. US governmental control is still present even if, responding notably to European Union pressure[67], a more democratic way of rule-making, ensuring a better participation of the different continents and a more transparent way of deliberating, has been progressively installed[68]. It is quite interesting to underline that one of the major modification introduced has been the

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98, ended April 30, 1999); Second Internet Domain Name Process: Compatibility between certain names and domain names (ended Sept. 3; 2001). It is quite interesting to underline the adoption by the WIPO during this process of the Request for comment (RFC – 1 and 2) procedure which is typically used by private bodies like ICANN, IETF and private standardization bodies) and the fact that governments (especially the European Commission.. See the E.U. Commission Reply to the WIPO RFC, Oct.29, 1998) have intervened in the context of this procedure.

64 It must be underlined that only the WIPO secretariat was involved in the drafting of the rules. The rules were forwarded to ICANN without first being approved by the WIPO General Assembly. ICANN adopted the UDR Policy aimed at settling disputes arising out of abusive registration and use domain names.

65 The comparison between this WIPO rule making and the US Federal Agencies' rule making is on that point quite interesting. According the Administrative Procedure Act, certain requirements have to be taken into account by the Agencies. So, the obligations: 1. to issue a notice of the proposed rulemaking and to ensure its large publication; 2. to give to everyone the opportunity for comments; 3. to consider there comments and motivate the attitude of the Agency v. a v. these comments. Finally, it must be underlined that each person affected by the Agency's decision might challenge it before the Court and that for different reasons ("arbitrary and capricious rule", "outside of the reasonable"). On all these points, M. FROOMKIN, "Wrong Turn in Cyberspace: Using ICANN to route around APA and the Constitution", 50 Duke Law Journal, 2000, p. 17 and ff.

66 See P.Mounier, les maîtres du monde, Homo Numericus, March 2000, available at : http://www.homo-numericus.bonidoo.net/article.php3?id_article=138 ; O. ITEANU, L'ICANN, un exemple de gouvernance originale ou un cas de law intelligence ?, Homo Numericus, May 2002, available on the Homo Numericus website, article 154 ; M. FROOMKIN, Form and substance in Cyberspace, 6 The Journal of Small and Emerging Business Law (2002), 1, 93 and ff. quoting S. LYNN, ICANN President : " Each of ICANN's accomplishments to date have all depended in one way or another, on government support, particularly from the United States." R. DELMAS, " Internet, une gouvernance imparfaite ", in Le droit international de l'Internet, quoted footnote 50, p. 279 and ff.

67 On these pressures, read C. DELMAS, eod.loco.

68 Read the interesting debate between PALFREY,CHEN, HWANG, EISENKRAFT :"Public Participation in ICANN" and Mc LAUGHLIN, "The virtues of deliberative Policymaking : A response to " Public Participation in ICANN".

setting up of a Governmental Advisory Committee (the GAC). That creation illustrates that co-regulation might lead to a reversal of the traditional hierarchy insofar governmental authority has a simple consultative voice in the ICANN's process of rule making. Very severely, C. Albert[69]noted " *This ultimately means we are left with a self-regulatory organization managing core resources of the Internet, directly controlled neither by the governments of this world, nor by the users of the virtual world. Instead at the end of the day ICANN is controlled by the industry protecting their profitable monopolies and to make -everybody outside the US even more concerned about the future of self-regulation-by representatives of the unilateralist US Administration."*

**29.** These criticisms show the dangers linked with certain co-regulatory schemes. The main fear is what economists call "regulatory capture"70 - that regulatory powers are afforded to certain bodies in a non-transparent way. This might be the case when decisions are taken in a non-transparent way. Insofar as co-regulation might create confusion between the competences of public authorities and private bodies, this fear might be well founded. The risk of having rule-making deeply influenced by the interests of a specific group leads to a "spill-over effect"71 regarding the content of the rule. Another concern is the difficulty of being sure that "those who are affected by conduct that is the subject of particular rules must have some voice in determine the content of their rules"72. This "legitimacy" question of certain co-regulatory norms, especially when the co-regulation is not organized by the law itself, is not easy to solve. It requires transparency in the process of rule-making and taking all the opportunities given by the Internet to reach a maximum of transparency and open debate[73]. It is quite clear that the intervention in certain co-

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69 C.ALBERT, Editorial, From Global Elections to Self-regulation without the Public : How ICANN fails to fulfil its basic promise ?, available at the PCMPL Self-Regulation review, Oct.2003 available at: http://www.selfregulation.info

70 On that issue, E. BROUSSEAU, "Régulation de l'Internet ; l'autorégulation nécessite t'elle un cadre institutionnel ?", Revue économique, n° hors série : Economie de l'Internet, E. Brousseau and N. Curien (ed.), Oct.2001 ; M. MUELLER , The " Governance " Debacle, How the ideal of Internetworking Got Buried by Politics, available at: http://www.open-rsc.org/essays/mueller/govdec/ .

71 So number of authors have denunciated the fact the WIPO rules are focusing mainly on the protection of IPR holders and have not sufficiently taken into account other general interests like competition, privacy questions ( see notably, M. MUELLER," ICANN and Internet Governance, sorting through the debris of Self-Regulation", in Info, 1999, p. 497-520

72 D.POST and D JOHNSON, New Civic Virtue of the Net, quoted, p.5. From the same authors," Chaos Prevailing on every Continent: A new theory of decentralized Decision-making in complex systems", 73 Chicago-Kent Law Review, (1999), p.1055 and ff. These authors insist about the absolute need to control the spill-over effects of the self-regulation or co-regulation by a systematic assessment of the different rules adopted by the self-regulatory bodies.

73 See the constant reference to the procedural Ethic developed by Habermas as a way to solve the legitimacy problem raised by these new normative approaches, in M. FROOMKIN, "Habermas@discourse .net: Toward a critical theory of cyberspace", 116 Harv. Law Rev., 2003,p. 800 and M. MAESCHAALK and T. DEDEURWAERDERE, " Autorégulation, Ethique procédurale et Gouvernance de la société de l'information ", in Gouvernance de la société de l'information, quoted footnote 50., p. 77 and ff.

regulatory schemes of public bodies like GAC or WIPO might create a false appearance of legitimacy what is an additional risk. To conclude on this point, my intent is definitively not to reject any form of co-regulation. On the contrary, certain schemes, such as those promoted by WSIS and the European Union might bring about what is needed by the Internet, that is to say a more decentralized and adapted regulatory framework allowing each community to take its own responsibility and providing certain added value to the legal framework enacted by the national, or even international, constitutional authorities. Other forms of cooperation between public and private authorities should not be excluded but in these cases the three fundamental criteria of legitimacy, conformity and effectiveness must be be scrupulously respected.

# Conclusions

**30.** International governance of the Internet must correspond to the international dimension of the network. This assertion explains and justifies the WSIS efforts to propose a global Constitution of Cyberspace, envisaging all aspects of Internet governance in one place. But if common rules are needed at this stage, international public organisations are not yet ready to assume this responsibility.

They appear divided[74], their composition differs from one institution to another and their procedures seem too lengthy and inefficient. In comparison, private international organisations have grown rapidly, they have developed standards and technical norms in the shadow and they are operating the infrastructure, bringing to it stability and security. The private sector, in the same time, is pleading for self-regulatory solutions and seeking their official recognition. Civil Society's voice is progressively emerging even if it remains quite weak among the others.

In that context, the Internet governance debate is the core issue insofar as it calls for a new democratic process at the international level. This democratic process is not easy to put in place since the Internet offers certain governments and private players a unique opportunity to impose their own regulations unilaterally. Burkert[75] in a recent essay has demonstrated how slogans or "myths", like "Code as Code", "self-regulation" and "internationalisation" are used by certain policy makers to avoid any debate about normative values. To install again the possibility of this fundamental debate on normative values, the WSIS calls for a transparent, egalitarian and multi-stakeholders dialogue, recognizing as a central point of departure of this debate: the sovereignty of the States, which in the Internet Age becomes more and more another Myth. At the same time, WSIS is forced to grant real regulatory

74 M.LIPS," Inventory of general ICTregulatory starting Points", in Starting points for ICT regulation, quoted footnote 11, p. 13 and ff.

75 H. BURKERT, "Four Myths about regulating in the Information Society", in Starting points for ICT regulations, quoted footnote 11, p.239 and ff. :" Technological neutrality, internationalization, Architecture and Self-regulation are not, of course, as they may seem by now, the Four Horsemen of the ICT regulation Apocalypse. However these terms do more than just describe characteristics traits of regulation in the Information Society. They contain a normative agenda precisely by avoiding a discussion of normative values, by setting tools in the place of goals...(and) tend to marginalize other tools with which to build more democratic society."(p.246)

autonomy to market forces and to private international standardisation bodies. These contradictory movements might find a solution if according with the European approach, certain additional principles are clearly enunciated and made effective. Subsidiarity and proportionality principles must be enacted and, at the same time, the three criteria of self-regulatory or co-regulatory norms must be asserted and controlled. Is that possible? It is quite clear that a condition is a better coordination of the actions taken by the different international public organisations[76] and their will to speak with a unique voice about the global issues of the Internet.

76 To what extent the ECOSOC, a division of the UN General Assembly, in charge of this general coordination will be able to achieve this huge task as foreseen by the Points 104 and 105 of the Tunis Agenda?
"104. We further request the UN Secretary-General to report to the UNGA through ECOSOC by June 2006, on the modalities of the inter-agency coordination of the implementation of WSIS outcomes including recommendations on the follow-up process.
105. We request that ECOSOC oversees the system-wide follow-up of the Geneva and Tunis outcomes of WSIS. To this end, we request that ECOSOC, at its substantive session of 2006, reviews the mandate, agenda and composition of the Commission on Science and Technology for Development (CSTD), including considering the strengthening of the Commission, taking into account the multi-stakeholder approach."

# Governance Challenges: First Lessons from the WSIS – An Ethical and Social Perspective

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**Abstract**: The World Summit on the Information Society (WSIS), in its Geneva phase (2003) and in its Tunis phase (2005), has surely been an exciting experience, not in terms of the Summit itself, gathering respectively 11,047 participants (representing 1486 entities) and 19,401 (representing 1740 entities): most often the Summits remain events without big surprises – Tunis having perhaps escaped the rule. It has been really exciting in terms of preparation and participation: regional conferences before the Geneva Summit, PrepCom (Preparatory Committees) 1, 2 & 3 before each of the Summit's phases, organization of different bodies, PrepCom3 resuming just three days before the start of the Tunis Summit, etc. From the time of the first UN Resolution until the post 2005 Summit position of the civil society, thousands of people have been thinking about an age, which seems both still to come, and where we are already living: the Information Age, the Information Society, the knowledge society, the digital society... They have started to think about warnings concerning the social and ethical issues.

**Keywords**: WSIS, Governance, Ethics, Information Society

## 1. The UN Plenary Meetings Resolutions and the ITU 1998 Plenipotentiary Conference

From the first lines of the first UN December 2001 Resolution regarding the preparation of a WSIS[1], the link is made explicit between that Summit and the goals of the UN Millennium Declaration (Table 1), among which are the eradication of

1 United Nations, Resolution adopted by the General Assembly, 56/183: World Summit on the Information Society, 90th Plenary Meeting, 21 December 2001.

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extreme poverty (1.1 billion people, World Bank estimate) and hunger and the achievement of universal primary education, the target date being 2015.[2]

"Knowledge and technology must be put at the service of development for all", says the text of the UN 2001 Resolution. The second December 2002 Resolution "invites the Member States to participate actively in the regional Conferences", and "encourages non-governmental organizations, civil society and the private sector to contribute further to (...) the intergovernmental preparatory process for the Summit and in the Summit itself..."[3] The third Resolution reaffirms "the potential of ICTs as powerful tools to foster socio-economic development and contribute to the realization of the internationally agreed development goals, including those contained in the United Nations Millennium Declaration."[4]


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|---|
| Eradicate extreme poverty and hunger. |
| Achieve universal primary education. |
| Promote gender equality and empower women. |
| Reduce child mortality. |
| Improve maternal health. |
| Combat HIV/AIDS, malaria and other diseases. |
| Ensure environmental sustainability. |
| Develop global partnership for development. |

*Table 1: The Eight Goals of the Millennium Declaration*

At the same time it endorses the *Declaration of Principles* and the *Plan of Action* adopted by the Summit on 12 December 2003 (...) and welcomes (...) the strong development orientation of both documents.[5]

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2 United Nations, The Millennium Declaration. 8 September 2000, http://www.un.org/millennium/

3 United Nations, Resolution adopted by the General Assembly, 57/238: World Summit on the Information Society, 78th Plenary Meeting, 20 December 2002.

4 United Nations, Resolution adopted by the General Assembly, 59/220: World Summit on the Information Society, 75th Plenary Meeting, 22 December 2004.

5 General Assembly endorses outcome of World Summit for Information Society, United Nations General Assembly (GA/10451), Sixtieth General Assembly, Plenary, 74th meeting, 27 March 2006. The four documents issued from the Summit phase 1, Geneva (2003) and Summit phase 2, Tunis (2005) are: Declaration of Principles, Building the Information Society: a global challenge in the new Millennium, WSIS-03/GENEVA/DOC/4-E, 12 December 2003; Plan of Action, Document WSIS-03/GENEVA/DOC/5-E, 12 December 2003); Tunis Agenda for the Information Society, WSIS-05/TUNIS/DOC/6(Rev.1)-E, 18

Before going further I would like to stress this was novel and unheard of, in terms of UN Summits, to convene not only the Member States and the UN concerned organizations but also the 'civil society'. What seems really new is the close association of the civil society to the whole process of preparation. The construction of the information society is considered as a 'multistakeholders' effort, the term being used today in all the documents, official or otherwise. We need to consider why, and for how long.

The decisions that have been taken during the two phases of the WSIS, in Geneva (December 2003) and in Tunis (November 2005), as well as the process of their implementation and the creation of the Internet Governance Forum (IGF) must thus be assessed in the light of the objectives of the Millennium Declaration. I will only retain for this speech the orientations in terms of social and specifically ethical issues of the Governance.

It is also interesting to remember that the process started in 1998 during the ITU Plenipotentiary Conference, Minneapolis, 1998, which is the cradle of the WSIS, at the initiative of the Tunisian Government. I cannot quote it entirely, but let me mention a little excerpt:

*"The Plenipotentiary Conference of the International Telecommunication Union (Minneapolis, 1998),*
*Considering...*
*Noting...*
*Recognizing...*
*Conscious*
*of the fact that the globalization of telecommunications must take account of a harmonious evolution in policies, regulations, networks and services in all Member States;*
*of the emergence of the concept of the information society in which telecommunications play a central role,*
*Taking into account...*
*Resolves to instruct the Secretary-General*
*to place the question of holding a world summit on the information society on the agenda of the United Nations Administrative Committee on Coordination, with a view to meeting the necessary conditions for holding such a summit before the next plenipotentiary conference;*
*(...)*
*Instructs the Council..."*[6]

## 2. Concepts

The terms and concepts to be clarified for the debate are: the Millennium Declaration Goals (see above), the Internet Governance, the tension between development and globalization, and the Civil Society.

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November 2005; Tunis Commitment, WSIS-05/TUNIS/DOC/7-E, 18 November 2005. All those documents are available on the ITU website: http://www.itu.int/wsis

6 International Telecommunication Union, Resolution 73 of the ITU Plenipotentiary Conference, Minneapolis, 1998

## 2.1 Internet Governance

The Working Group on Internet Governance (WGIG), which the UN General Secretary was asked by the Geneva Summit to set up, was in charge of providing a 'working' definition of 'Internet governance'. The Working Group agreed on the following terms: *"Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet."*[7]

Another definition: according to Hyden, G. et al. "Governance refers to the formation and stewardship of the rules (formal and informal) that regulate the public realm, the arena in which state as well as economic and societal actors interact to make decisions."[8] Both definitions stress the roles of different stakeholders among which include at least states, economic and societal actors, not to mention the technical people. The first definition, as confirmed by Nitin Desai, Chair of the WGIG, when presenting its results at the ICANN's bi-annual Conference in Luxembourg (July 2005), reaffirmed that "70 to 80 per cent of the Internet Governance did not concern ICANN at all."[9] When we know the results of the Tunis Summit in terms of the Internet governance debate, this sentence carries significant weight! The official tasks of ICANN (ICANN (Internet Corporation For Assigned Names and Numbers, http://www.icann.org)[10] are four: the management of gTLDs (Generic Top Level Domains) and the appointment of the official ccTLD (Country Code) managers; the allocation of the Internet Protocol (IP) numbers; the control of the 13 world-wide root servers; and the coordination of the technical standards. But nobody will deny that ICANN or closely related organisations do a lot of other things, among them lobbying. In fact, the famous US Department of Commerce (DoC) note of June 30, 2005, quoted as "the note of 331 words," was clearly reaffirming the dominant role of the USA, and its intention to retain the control of the Internet indefinitely, and also the role of ICANN as the lead technical body for the Internet, what one commentator called "a sort of Monroe Doctrine (1823) for our times", in the sense of the so-called Roosevelt Corollary to the Monroe Doctrine interpreting the Monroe doctrine as a license for the U.S. to practice its own form of colonialism.[11] In September 2006, the US and ICANN have dressed up their MoU relationship in new clothes. "The object seems to be to strengthen the public's perception that ICANN is relatively independent. But the basic relationship between

7 Report of the Working Group on Internet Governance, Château de Bossey, June 2005.

8 Miguel González, Governance: A Pro-Poor Concern?, quoting Hyden, G., Court, J. & Mease, K. (2004), Making Sense of Governance. Empirical Evidence from 16 Developing Countries. Lynny Rienner Publishers, in: Promotio Iustitiae, Special Issue on "The Challenge of 'Governance' - Some Jesuit Responses", Rome, Social Justice Secretariat, n° 87, 2005/2, p. 10.

9 Kieren McCarthy, UN Report to leave ICANN's balls intact, http://www.theregister.co.uk/2005/07/13/icann_conference

10 ICANN (Internet Corporation For Assigned Names and Numbers): http://www.icann.org

11 Kenneth Neil Cukier, Who Will Control the Internet, in Foreign Affairs, November/December 2005, http://www.foreignaffairs.org/2005/6.html

the US Government and ICANN is fundamentally unchanged. ICANN still gets general policy guidance from the DoC, and still regularly reports to it."[12]

## 2.2 The promises of globalisation and the Information Society

The question of governance of the Internet and/or of the information society cannot be raised in an economic and social vacuum: it must be examined in the context of today. The ITU 1998 Conference stressed that the Summit was to be seen in the environment of globalisation of telecommunications:

ITU being conscious

- of the fact that the globalization of telecommunications must take account of a harmonious evolution in policies, regulations, networks and services in all Member States;
- of the emergence of the concept of the information society in which telecommunications play a central role...

"The force driving globalisation in the 21st century is undoubtedly ICT. Enabling instant communication over vast distances and in real time, ICT has far-reaching implications for transnational relationships. However, the core relationship between globalisation and ICT, a major area of inquiry, has hitherto been somewhat neglected and inadequately studied."[13] The World Economic Forum Report (2004-2005) is not really pursuing the same preoccupations, and affirms that innovation and technological change, particularly in the domain of ICTs, "are increasingly playing the central catalytic role in pushing the development process forward."[14] But I must say that I was a bit afraid that I would not find any reference in the Executive Summary to the issues of employment or of work.

Everybody knows that the term of 'governance' brings along with it a certain feeling of mistrust. Mistrust towards the Governments themselves unable to solve the issues of everyday life for billions of people, issues such as poverty, hunger, violence, corruption, unemployment... The private sector has tried to take the place of governments by defending its own capacity for creating a self-regulating system, in its own manner, through the market, and through other means. But now the level of unemployment, in many Western countries, and in particular in the European Union, creates a situation where citizens mistrust the private sectors capacities, and even mistrust the neo-liberal system.

The so-called EU Lisbon strategy, decided in 2000, promised 30 million new jobs: it has been revised down to 6 million! The Lisbon process was supported by the slogan that by 2010 Europe would be a knowledge society, and the most competitive and dynamic economic space in the world.[15] But figures are there to demonstrate that in

12 ICANN's New MoU: Old Wine in a New Bottle - 30 September 2006, Internet Governance Project, http://www.internetgovernance.org/news.html#ICANNoldwine_093006

13 Sumit Roy, Globalisation, ICT and Developing Nations: Challenges in the Information Age. New Delhi, Sage Pub., 2005, 247 p., tables, ISBN 81-7829-487-7.

14 World Economic Forum, Global Information Technology Report 2005-2006, http://www.weforum.org

15 European Commission, Towards a Knowledge-Based Europe. The European Union and the Information Society, Catalogue number: NA-40-01-989-EN-C, Office for Official

many European countries, the reality of high level of structural unemployment, which is intolerable, especially when considering that the unemployment of youth (15-24 years old), according to the Employment European report 2005, reaches 18,7%.[16] (Table 2)

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EU (25 countries)** | : | : | : | : | 9.4 | 9.1 | 8.6 | 8.4 | 8.8 | 9.0 | 9.1 | 8.7 |
| **EU (15 countries)** | 10.5 | 10.1 | 10.2 | 9.9 | 9.3 | 8.6 | 7.7 | 7.3 | 7.6 | 8.0 | 8.1 | 7.9 |
| **Euro Zone** | 10.8 | 10.5 | 10.7 | 10.6 | 10.0 | 9.1 | 8.1 | 7.9 | 8.3 | 8.7 | 8.9 | 8.6 |
| **Euro Zone (12 countries)** | 10.7 | 10.5 | 10.7 | 10.6 | 10.1 | 9.2 | 8.2 | 7.9 | 8.3 | 8.7 | 8.9 | 8.6 |
| **Belgium** | 9.8 | 9.7 | 9.5 | 9.2 | 9.3 | 8.5 | 6.9 | 6.6 | 7.5 | 8.2 | 8.4 | 8.4 |
| **Greece** | 8.9 | 9.2 | 9.6 | 9.8 | 10.9 | 12.0 | 11.3 | 10.8 | 10.3 | 9.7 | 10.5 | 9.8 |
| **Spain** | 19.5 | 18.4 | 17.8 | 16.7 | 15.0 | 12.5 | 11.1 | 10.3 | 11.1 | 11.1 | 10.6 | 9.2 |
| **France** | 11.7 | 11.1 | 11.6 | 11.5 | 11.1 | 10.5 | 9.1 | 8.4 | 8.9 | 9.5 | 9.6 | 9.5 |
| **Ireland** | 14.3 | 12.3 | 11.7 | 9.9 | 7.5 | 5.7 | 4.3 | 4.0 | 4.5 | 4.7 | 4.5 | 4.3 |
| **Poland** | : | : | : | 10.9 | 10.2 | 13.4 | 16.1 | 18.2 | 19.9 | 19.6 | 19.0 | 17.7 |
| **Slovakia** | : | : | : | : | 12.6 | 16.4 | 18.8 | 19.3 | 18.7 | 17.6 | 18.2 | 16.4 |

*Table 2: Level of Unemployment in Europe*

There are differences between countries, as for instance between Ireland and Poland, but the European average reaches nearly 9%. [17]

Globalisation may have many meanings and can be taken from several different points of view: technological, economic, political, cultural, financial...[18] I had to make a choice, and I chose the financial approach. A short look at the phenomenon of mergers and acquisitions in the last few years in Europe has always resulted in suppressing employment, although the financial outcomes are highly beneficial for the few (fig. 1).[19]

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Publications of the European Communities, 2003, ISBN 92-894-4422-3, available at http://www.europa.eu.int/comm/publications/booklets/move/36/index_en.htm

16Employment European report 2005, http://ec.europa.eu/comm/employment_social/employment_analysis/employ_2005_en.htm

17Europa – Eurostat - Labour Market Indicators http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=fr&product=Yearlies_new_population&root=Yearlies_new_population/C/C4/C42/em071

18 See for instance: Groupe de Lisbonne, Limites à la compétitivité. Pour un nouveau contrat mondial. Paris, La Découverte/Essais, 1995. See especially p. 59, Tableau 3: les concepts de globalisation. (English translation: The Group of Lisbon, Limits to Competition, The MIT Press, 1996, ISBN 0-262-07164-9, 176 pp., 15 illus.)

19 Etienne de Callataÿ, La fièvre contagieuse des fusions et acquisitions, in Regards Economiques, Special Issue on 'Regards sur la nouvelle vague de fusions et acquisitions', IRES, Catholic University of Louvain, Belgium, March 2006, n°39, p. 12.

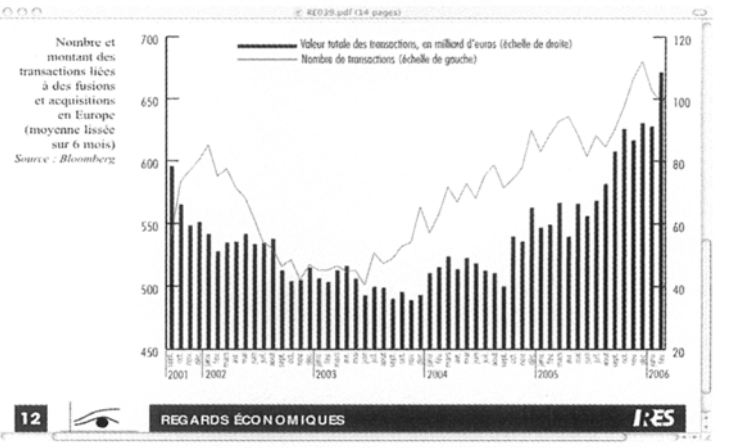


*Fig. 1: Mergers and acquisitions in Europe*
(Left axis: number of transactions; right axis: total value of the deals in billions of €)

After a decrease during 2002, the movement is today totally inversed and has tripled in terms of total value of the transactions since June 2003. The Group of Lisbon, in its *Limits to Competition* dared to say that ICT is the primary enzyme of globalization.[20] Analysts today note: "That phenomenon [the globalisation], whose the most fundamental cause is the revolution of the information and communication technology of the last third of the 20th century, is characterized by the trend of all the active units of the world – enterprises, non-governmental organizations, criminal groups... – to display their strategy at the scale of the planet."[21]

The total amount of the deals done for the period January – April 2006 for only the top 25 organizations is up to approximately 317 billion US$. Among them, eight deals are linked to ICTs, such as BellSouth Corp acquired by AT&T Inc for 72,671 million US$, or Lucent Technologies Inc by Alcatel SA for 13,591.10... [22] For the year 2005, the total amount is estimated at 2,980 billion US$, a 43% increase when compared to 2004.[23] We do not say that, in the long run, competition as well as the positive effects due to the synergy between the merging entities will not be beneficial for the customer, but unfortunately, this statement anticipates events, which still need to be proven. At the present time it is not even beneficial for the industrial investment: it is, said by many commentators, that it is only beneficial for the shareholders of the target societies. We should not forget all the consequences for those who work: delocalisation, lack of job security – "Precariousness for all is

20 The Group of Lisbon, Limits to Competition, op. cit.
21 Thierry de Montbrial, Arcelor, la mondialisation et l'Europe, in Le Monde, 20 July 2006, p. 2.
22 Mergers and acquisitions, 25 largest deals, January-April 2006, http://money.cnn.com/news/deals/mergers/biggest.html, checked on Friday April 28, 2006.
23 Nihat Aktas, Eric de Bodt et Giorgio A. Tesolin, Belle saison pour le marché des fusions et acquisitions, in Regards Economiques, op. cit.

becoming the norm of the future" –,[24] the unions are out of the field as far as the poorest of the poor are concerned, competition is invading the relationship between the workers themselves, destroying their traditional solidarity – "Yesterday standing by together, from now on competitors –,[25] blackmail in employment, and so on.

There are analysts, who are very severe towards contemporary society, even defending negative growth, a 'de-growth': "We are living in a cruel world. Cruel first for those who have nothing: among the homeless people, one out of three has a precarious job. Cruel too, even for those who have something: for 15 years the sales of anti-depressants have grown 2,5 times faster than national wealth. Cruel finally for nature whose destiny it is to perish rotting from the excesses of the consumer society. So at the same time, this globalised capitalism, more powerful than ever, has never been as vulnerable as it is now."[26]

"Our house is on fire, but we are looking elsewhere." (President Chirac, Johannesburg, 2002) The word 'progress' is no longer politically correct. Everybody, governments, industrialists, activists, etc. prefer the term 'sustainable development'.

My intention in joining the questions of unemployment and mergers and acquisitions (Table 2 and Figure 1) was not to demonstrate the correlation between the two phenomena. That would have been too easy. But in a way, it is *indirectly* obvious. When you question youth about how they see their future, their answer is immediate: precarious employment, in a globalised world shaped by ICTs. What seems clear today is that the phenomenon of globalisation has increased the tensions between the world of those who are, so to speak, living 'at the centre' and those living 'on the margins'. "While those at the centre have benefited from globalisation, the already marginalised have often been left further behind. While some of the poor have been able to enjoy the new benefits of globalisation, many others have been further disadvantaged by the entrenched social, cultural, political and ethnic divisions which increase their marginalisation and exclusion."[27]

## 2.3 The Civil Society

The concept of civil society is surely not new. It is a concept born after the French Revolution to end the possible confusion of the Nation-State. Dominique Wolton indicates that "The concept of civil society was formulated as a system in 1821, in Hegel's *Principles of Philosophy of Right*. By introducing this concept, Hegel was acknowledging the most significant change in modern politics: the separation of 'civil life' from 'political life' and of society from the State - a change that came with the Industrial Revolution (the rise of bourgeois culture and the increasing importance and autonomy of the economic sphere)."[28]

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24 Florence Lefresne, Précarité pour tous, la norme du futur, in Le Monde Diplomatique, Paris, Mars 2006, pp. 18-19.

25 Danièle Linhart, Hier solidaires, Désormais concurrents, in Le Monde Diplomatique, ibid., pp. 16-17.

26 Matthieu Auzanneau, Les Objecteurs de croissance, in Le Monde 2, 25 mars 2006, p.19.

27 Globalisation and Marginalisation. Our global Apostolic Response. Report of the Task Force on Globalisation and Marginalisation, Rome, Social Justice Secretariat, February 2006.

28 Glossary of concepts used by Dominique Wolton, http://www.wolton.cnrs.fr/glossaire/gb_soc%20civil.htm

It is probably not this reference that leads many movements to use it in a way that is certainly not systematic, and is still fuzzy. It is surely, as stated by Benoît Frydman, a concept belonging to the protest against the ideology of economic and financial globalisation, and aiming at promoting new practical and concrete solidarities. "It is a kind of intermediary zone between the public and the private, distinct from the market and from the State, but exercising a pressure, from outside, on both of them."[29]

According to the UN definition, civil society includes the set of legal entities with a character which is national, regional or international, but which are distinct from the federal governments and the international organisations. The working definition adopted by the Executive Secretariat of the WSIS introduced another distinction within the profit organizations, i.e. the private sector, and the others.[30] The Conference of the NGOs (CONGO), an official facilitator between the UN and NGOs, has surely played a major role in the WSIS.[31] Civil society has developed basic structures over the preparatory process of the WSIS, including

- A *Plenary* (CSP), the ultimate civil society authority in the WSIS process, in relation to the mandate and scope of the specific event;
- The *Civil Society Content and Themes Group* (CS C&T), coordinating the work of numerous self-constituting civil society Caucuses and Working Groups (5 regional, 32 thematic, and 2 multi-stakeholders);
- The *Civil Society Bureau* (CSB) functioning as a linkage between civil society participants and the intergovernmental Bureau. The Bureau is constituted by 21 'family nodal points', that enable any civil society entity to find a 'home';
- The *Civil Society Division of the WSIS Secretariat* (CSD), supporting the activities of all civil society participants and entities at the Summit; and finally
- A *Virtual CS Plenary group*, an electronic forum between physical meetings of the CSP.[32]

In any case, it appears more and more clearly that the presence of civil society affects the concept of democracy, or at least of 'representative democracy' and gives a first insight of what is starting to be recognized as a 'participative, or even a deliberative, democracy.' Frydman thinks that Hegel still provides, with some reasonable change, a theoretical framework to participative democracy.

As already said earlier, the WSIS was really innovative. To my knowledge, it was the first time in the history of the UN that the civil society was associated so

29 Benoît Frydman, Vers un statut de la société civile dans l'ordre international, in: Benoît Frydman and Guy Haarscher, Philosophie du droit, Dalloz 2001. http://www.philodroit.be/uploaded/soccivint.pdf

30La société civile, on the website of Geneva State, http://www.geneve.ch/smsi/doc/20031204_sc.pdf

31 The Conference of NGOs (CONGO) is an international membership association that facilitates the participation of NGOs in United Nations debates and decisions. Founded in 1948, CONGO's major objective is to ensure the presence of NGOs in exchanges among the world's governments and United Nations agencies on issues of global concern. For more information see http://www.ngocongo.org

32 The WSIS Civil Society Meeting Point, http://www.wsis-cs.org

closely and officially to all the process of preparation for the Summit. "In general, at WSIS, there was recognition that the agenda involved challenges which governments could not address on their own. The private sector, civil society and international organisations were all included as key 'stakeholder' groups."[33] Unfortunately, it did not result in common declarations. In Geneva, the results were presented separately during the Summit itself. In the Tunis phase, the civil society statement is a reflection *post factum*, analyzing the whole process.[34] This could become dangerous: has civil society really played by the rules of a multistakeholder process? It already appears that several Governments are trying to discredit its work, for one reason or another: it is sometimes easier to develop policy without being disturbed by associations, such as NGOs, that are often really committed to people.

There are probably valuable criticisms: are we sure that the civil society today represents all the citizens? Are we sure also that it is not disproportionately dominated by interests/people from the North?

But, from another point of view, when considering the real functioning of civil society, I was really impressed, and convinced that those experiments represent a real way for escaping the ambient philosophy of individualism. Civil society recreates relationships of solidarity all around the world. It is certainly a good way, but is has to be organized a little more to be sure that nobody is excluded from the 'circle'.

## 3. Challenges for the Information Society

The presence of many actors, such as the Member States, the representatives of the entirely pro-globalisation movement, the civil society... did not make the game easy. Challenges were not the same for each of them. The bargaining power of the actors was not balanced, but everyone was confronted with the same issue: try to develop a common vision of the future information society. Did they succeed, even though nobody could be openly against the idea of bridging the digital divide?

Let us first hear the official Summit authorities: "UN General Assembly Resolution 56/183 describes the purpose of the Summit as being the 'development of a common vision and understanding of the Information Society and the adoption of a declaration and plan of action for implementation by Governments, international institutions and all sectors of civil society'. This means:

*1. "Providing access to ICTs for all*: How can the benefits of ubiquitous and affordable ICTs be extended to all the world's inhabitants? How can those that have access to ICTs be helped to use them effectively?

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[33] Association for Progressive Communications, Pushing and Prodding, Goading and Hand-holding, Reflection from the Association for Progressive Communications (APC) at the conclusion of the World Summit on the Information Society, 14 February 2006. http://rights.apc.org/documents/apc_wsis_reflection_0206.pdf

[34] Civil Society Declaration to the World Summit on the Information Society WSIS, Civil Society Plenary *Shaping Information Societies for Human Needs*, Geneva, 8 December 2003, (Version with corrections 12 December 2003); Civil society statement on the World Summit on the Information Society, *Much more could have been achieved*, 18 December 2005 (Revision 1 – 23 December 2005). Nearly all the documents of the Civil Society related to the WSIS are available on the CONGO website at http://www.ngocongo.org/index.php?what=resources&id=278 (May 3, 2006)

*2. ICTs as a tool for economic and social development – and meeting the Millennium Development Goals:* The development of ICTs has implications for economic, social and cultural development. How can ICTs be leveraged to help promote the common goals of humanity, such as those expressed in the UN Millennium Declaration?

*3. Confidence and security in the use of ICTs:* The benefits of ICTs can only be fully harnessed if there is confidence that these technologies and networks are reliable and secure, and are not misused. What steps should be taken to build confidence and increase security?"

They also mention the conditions for the fulfilment of these objectives. These include:

-"Information and communication infrastructure: financing and investment, affordability, development and sustainability,

-Access to information and knowledge,

-The role of governments, the business sector and civil society in the promotion of ICTs for development,

-Capacity building: human resources development, education and training,

-Security,

-Enabling environment,

-Promotion of development-oriented ICT applications for all,

-Cultural identity and linguistic diversity, local content and media development,

-Identifying and overcoming barriers to the achievement of the Information Society with a human perspective."[35]

The Chancellery of the *Swiss Republic and Canton of Geneva* presented the issues at stake in very similar terms, clearly expressing that 90% of the human beings are still excluded from the electronic communication networks, and adding that the main idea was to draw up a strategy for implementing a worldwide cybergovernance."[36] Some of the stumbling blocks such as the different perceptions around the world of human rights and of freedom of expression, and the protection of cultural diversity have been raised, without mentioning the financial difficulties, which has been one of the major obstacles raised at the Geneva Summit. Poor countries were asking for new mechanisms through a specific digital solidarity fund, while the rich countries agreed on increasing the usual financing patterns. But one of other real stumbling blocks has been the so-called question of Internet governance.

When looking just at the Table of Contents of the civil society report *Shaping Information Societies for Human Needs* adopted during the Geneva Summit, it is quite clear that expectations were really surpassed the simple questions of Internet Governance.[37] That report is really a project for society based on real values in tune with the Millennium Declaration. The 4 core sections of chapter 2 are

- *2.1 Social Justice and People-Centred Sustainable Development,*
- *2.2 Centrality of Human Rights,*

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35World Summit of Information Society, Newsroom, http://www.itu.int/wsis/newsroom/fact/content_themes_outcome.html

36 République et Canton de Genève, Chancellerie d'Etat, Secrétariat Général, Les enjeux du SMSI, 4 Décembre 2003, http://www.geneve.ch/smsi/doc/20031204_sc.pdf

37 Civil Society Declaration, Shaping Information Societies for Human Needs, doc. cit.

- *2.3 Culture, Knowledge and Public Domain,*
- *2.4 Enabling Environment.*

The Table of Contents give a good idea of the main topics and can be found at http://www.ngocongo.org/index.php?what=resources&id=278&start=3

The Geneva official *Declaration of Principles* in its section B "An Information Society for All: Key Principles" – the common vision and guiding principles – addresses the eleven following main questions, slightly different from those mentioned above:

-The role of governments and all stakeholders in the promotion of ICTs for development,
-Information and communication infrastructure: an essential foundation for an inclusive information society,
-Access to information and knowledge,
-Capacity building,
-Building confidence and security in the use of ICTs,
-Enabling environment,
-ICT applications: benefits in all aspects of life,
-Cultural diversity and identity, linguistic diversity and local content,
-Media,
-Ethical dimensions of the Information Society,
-International and regional cooperation.

This document is inspiring but, as already said, failed on two of the crucial issues: Internet Governance, and the financial issues. Both questions were not solved and were then entrusted to the General Secretary. Let us quote the Geneva *Plan of Action*:

"We ask the Secretary General of the United Nations to set up a working group on Internet governance, in an open and inclusive process that ensures a mechanism for the full and active participation of governments, the private sector and civil society from both developing and developed countries, involving relevant intergovernmental and international organizations and forums, to investigate and make proposals for action, as appropriate, on the governance of Internet by 2005.

The group should, *inter alia*:

- Develop a working definition of Internet governance;
- Identify the public policy issues that are relevant to Internet governance;
- Develop a common understanding of the respective roles and responsibilities of governments, existing intergovernmental and international organisations and other forums as well as the private sector and civil society from both developing and developed countries;

Prepare a report on the results of this activity to be presented for consideration and appropriate action for the second phase of WSIS in Tunis in 2005."[38]

Regarding the financial mechanisms:

"While all existing financial mechanisms should be fully exploited, a thorough review of their adequacy in meeting the challenges of ICT for development should be completed by the end of December 2004. This review shall be conducted by a

38 WSIS, Plan of Action, Document WSIS-03/Geneva/DOC/5-E, 12 December 2003, 13, b).

Task Force under the auspices of the Secretary-General of the United Nations and submitted for consideration to the second phase of this summit. Based on the conclusion of the review, improvements and innovations of financing mechanisms will be considered including the effectiveness, the feasibility and the creation of a voluntary Digital Solidarity Fund, as mentioned in the Declaration of Principles."[39]

***Financial Mechanisms***

Before coming back on the issues linked to governance, let us continue with this second issue, the financial mechanisms. But instead of commenting on the proposals of the special Task Force introduced in the final document of the Summit of the *Tunis Agenda for the Information Society* in terms of 'improvements and innovations', we must really guess what is between the lines to discover a real innovation![40]

I prefer to pinpoint some of the issues of a real case: the project of a wireless broadband network aimed at connecting rural areas unreachable by traditional telephone lines or cellular phone services. The project is called Akshaya, and it's a pilot project in the district of Mallapuram in the State of Kerala, India.[41] The project is not typical of all of India since the total population (32 million) is not as high as in the Northern part of India (Madhya Pradesh, 80 million; Bihar, 100 million, Uttar Pradesh, 170 million...)[42], and the degree of literacy today reaches nearly 100%.

The project involves setting up 5000 multi-purpose community technology centres called Akshaya kendras across Kerala (We could call them kiosks, but I thought also of the 'Cabinas Públicas' of Internet Peru). The Mallapuram district project is a pilot but the experience will be spread to all the 14 districts of Kerala (7 in 2006, and 6 more in 2007).

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39 ibid., 27, D2, f

40 WSIS, Tunis Agenda for the Information Society, prepared by the President of the PrepCom of the Tunis phase, Document WSIS-05/TUNIS/DOC/6(Rev.1)-E, 18 November 2005, n° 3-28, and especially n°27.

41 The information regarding that project has been collected from different sources: An unpublished paper, Akshaya Project – A true example of ICT4All, presented by P.H. Kurian (Secretary, Department of Information Technology Government of Kerala) during a side-event of the Tunis: 'Past, Present, and Future of Research in the Information Society' (13-15 November 2005, Tunis, Tunisia) – see http://worldsci.net/tunis/index.htm; a second source is an official brochure of the Kerala IT Mission, distributed in the exhibition hall of the Summit, Akshaya, Creating an IT empowered society, and the comments I collected during discussion; finally the website of the project: http://www.akshaya.net. It seems that a similar project is developed in Madhya Pradesh: Gyandoot is an intranet in Dhar district connecting rural cybercafes catering to the everyday needs of the masses.

42 United Nations Economic and Social Council for Asia and Pacific: http://www.unescap.org


The project is a multi-partners project. The State provides the infrastructure and the private sector runs the kendras, each one being set up within 2-3 kilometres of every household, catering to the requirements of around 1,000-1,500 households. In the first stage, 1 person per household will be trained; in the second the service delivery will develop e-learning, e-transaction such as on-line grievance redress, e-commerce, rural Internet banking and financial services e-payment, Internet telephony, IT enabling agriculture and health services, information and communication about Government schemes, programmes, entitlements welfare benefits.

The pilot project concerns the establishment of 634 kiosks spread over 3,500 square kilometres. After the completion of the State project, there should be 5,000 kendras of 5-10 PCs each, for a total population of 31.838619 million people and 6.5 million families, creating some 50,000 direct employment opportunities.

But let us come to one of the choice investments, and the question of the costs. For the district of Mallapuram alone the total costs are Rs 11 crore (Rs 110 million), i.e. 2 million €, but it seems that only Rs 3,5 crore, i.e. 600,000 € will be charged to the State for the infrastructure, a wireless infrastructure, the rest (PC, kiosks…) being repaid by the entrepreneurs. We should add, at the state level a training programme whose costs are shared in a public-private partnership: Rs 8 crore for the State – 4 for the private sector, i.e. in total 210,000€.

That means that for the 14 districts, Kerala State would have to pay around Rs 55-60 crore, i.e. at least 20 million €, and that the private sector must raise around 4 times this amount. All together 100 million €. Without counting the fact that the project will be in a language specific to Kerala, the Malayalam. You can work out the cost yourself, and calculate the cost for all of India with a population of more than 1 billion, compared to the 31 million people of Kerala. And this is not a utopian idea.[43] The real question is moreover the services and their priorities, which can be provided to the citizen. In the specific case of Kerala there was also another issue: this project is a kind of replacement. Kerala State, the most literate state of India, does not have its own Silicon Valley, whereas there are at least six in India. Their challenge was to become the first Indian Knowledge State, and in its own language.[44]

We can understand that many developing countries participating in the Tunis Summit were not totally happy with the results of two years negotiation about the

43 Atanu Garai and B. Shadrach, Taking ICT to Every Indian Village: Opportunities and Challenges, OneWorld South Asia, New Delhi, 2006.

44 Sooryamoorthy, R. and Wesley Shrum, Is Kerala becoming a Knowledge Society? Evidence from the Scientific Community, Sociological Bulletin 53 (2), May-August 2004, pp. 207-221. Available at http://worldsci.net/kerala.htm

"financial mechanisms for meeting the challenges of ICT development". The Digital Solidarity Agenda was not yet at the rendez-vous. Quoting the *Tunis Agenda*: "*We underline* that market forces alone cannot guarantee the full participation of developing countries in the global market for ICT-enabled services. Therefore, *we encourage* the strengthening of international cooperation and solidarity aimed at enabling all countries", says paragraph 18. The chosen words are not very compelling. "*We recommend* that further cross-sectoral and cross-institutional coordination should be undertaken, both on the part of donors and recipients within the national framework." (§24)

"Multilateral development banks and institutions should consider adapting their existing mechanisms, and where appropriate designing new ones, to provide for national and regional demands on ICT development." (§25). "Create policy and regulatory incentives aimed at universal access" (§26) but without suggesting any particular one, etc. In other words, the main result of the Task Force on Financial Mechanisms resulted, to state it a bit provocatively, but not straying too far from the reality, in only one directive: improve the existing mechanisms. The real innovation is the creation of the voluntary Digital Solidarity Fund, which in fact is not an idea of the Summit, but was talked about at the Summit and propagated through the channel of the Summit. The concept originated from Senegal's President Wade, who initially proposed the concept of "digital solidarity" to a WSIS Preparatory Committee meeting in February 2003.

**Internet Governance**

Let us come now to the first question, which remained unsolved after the Geneva Summit: Internet governance and its issues. Here again the Secretary-General established a Working Group, the Working Group on Internet Governance (WGIG) that I mentioned regarding the working definition of Internet governance. This Group transmitted its report in July 2005, as well as a 'background report', based on a consultation process.[45]

The report itself elaborates the working definition, identifies public policy issues that are relevant to Internet governance, and assesses the adequacy of existing governance arrangements. It then tries developing a common understanding of the respective roles and responsibilities of all stakeholders from both developed and developing countries, and finally makes 'proposals for action, as appropriate' including recommendations related to Internet governance mechanisms, and recommendations to address Internet-related issues. We know that the greatest tensions in the PrepCom3 in Geneva were about the recommendations related to Internet governance mechanisms; they included the creation of a new space for dialogue for all stakeholders on an equal footing on all Internet governance-related issues, which was called later the Internet Governance Forum (IGF), and 4 models based on the fact that in whatever case, any organizational form for the governance function/oversight function should adhere to the following principles:

45 Working Group on the Internet Governance (WGIG), Report from the Working Group on the Internet Governance, Document WSIS-II/PC-3/DOC/5-E, 3 August 2005; WGIG, Background paper, June 2005.

-No single Government should have a pre-eminent role in relation to international Internet governance.
-The organizational form for the governance function will be multilateral, transparent and democratic, with the full involvement of Governments, the private sector, civil society and international organizations.
-The organizational form for the governance function will involve all stakeholders and relevant intergovernmental and international organizations within their respective roles.
We know now that PrepCom 3 failed, and was obliged to resume 3 days before the Tunis Summit. We know also that the partners reached a so-called 'agreement' the day before the opening of the Summit, late in the night. The only proposal which was finally accepted, among many proposed by the USA, was the Internet Governance Forum, but with a mandate that is strictly defined in the Tunis Agenda, and which will be evaluated in 5 years time.[46] None of the reforms suggested by the WGIG Report were accepted, so that the result does not tally with the three above-mentioned principles! WSIS has failed in not separating "the discussion of the role of the governments in setting policies for all Internet issues from discussion of the narrower problem of ICANN's oversight."[47]

Just to show how disappointing the result was for the main organizer of the two phases of the Summit, ITU, let me quote its Secretary-General, Yoshio Utsumi, at the opening ceremony of Tunis, on November 16, 2005: "The value of the Internet lies in the value of information created and consumed by users rather than the infrastructure itself. So, Internet Governance requires a multi-stakeholders approach in which providers and users of information alike agree to cooperate on issues like security, privacy protection and efficient operation at international level. *That is why we have suffered such agonies in our discussion of Internet Governance.* (We underline). The existing models do not work well. We need to embrace a new model for 'communication sovereignty'."[48] His evaluation during the last Press Conference was not really any more appreciative: "The Internet needs not to be one net controlled by one centre", he said.[49] Everybody understood: the question was not the creation of the IGF, but the refusal of any of the reform proposals made by the WGIG.

46 WSIS, Tunis Agenda for the Information Society, doc. cit. n° 68, 72-78.
47 Internet Governance Project, Publications,
http://www.internetgovernance.org/publications.html
48 Statement of Mr. Yoshio Utsumi, Secretary-General, of the International Telecommunication Union, November 16, 2005. See http://www.itu.int/wsis
49 Kieren McCarthy, ITU refuses to accept net governance agreement, in: The Register, http://www.theregister.ac.uk/2005/11/21/utsumi_rejection


*Fig. 2: ICANN's Official Structure*

To better understand the agonies of Mr. Utsumi, it is perhaps interesting to point out the difficulty of identifying "Who is doing what?", and measure the weight of the current partners. Fig. 2 is the official structure of ICANN, which can be found on its website (http://www.icann.org/general/icann-org-chart.htm).

Fig. 3 is the result of an in depth analysis of the different actors.[50] Unfortunately, there are people that prefer to hide the complexity, which gives an *apparent illusion* of transparency!

50 Le gouvernement de l'Internet, in: Olivier Ricou, Internet, commerce & politique, Version 1.4 du 8 avril 2005, inspired by Eric Brousseau, http://www.ricou.eu.org/commerce-e/commerce-e/index.html

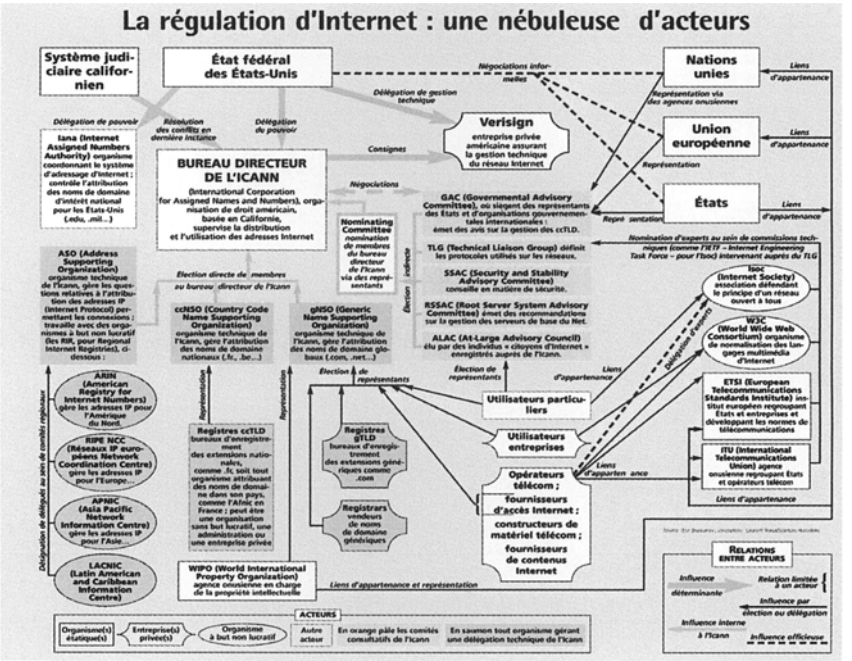


*Fig 3: The Internet Governance: An Actors' Nebula*

Those interested in deepening their reflections on the WGIG report should have a careful look at the chapter "Developing a common understanding of the respective roles and responsibilities of all stakeholders" (Nr.29 ff.):
-Governments: Public policymaking, Creating an enabling environment, Oversight function, Development and adoption of laws, regulations and standards, …
-The private sector: Industry self-regulation, Development of policy proposals, guidelines and tools for policymakers and other stakeholders, Contribution to the drafting of national law…
-Civil society: Awareness-raising and capacity-building, Mobilizing citizens in democratic processes, Bringing perspectives of marginalized groups, Contributing to policy processes and policies that are more bottom-up, people-centred and inclusive…
I hope that this tentative proposal will be deepened, because there are still many ambiguities under the terms.

We cannot hide the tremendous work which has preceded the Tunis Summit and the amount of good work undertaken by UN officials, groups of activists, Universities etc… This also means there are a lot of expectations. Will they be met? Let me mention the Internet Governance Project led at the beginning by Syracuse University, New York, and the Georgia Institute of Technology, Atlanta. It regularly publishes policy analysis, 'Concept Papers', working papers, seminars reports, and

projects reports.[51] This group of US Universities, joined now by foreign institutes certainly does not preach the 'true US doctrine'! Among the activists, the Computer Professionals for Social Responsibility (CPSR) has been leader of the civil society with its Civil Society Democracy Project, and its *Cyber-federalist Newsletter* (July 2000-October 2002).[52] The same may also be said of all the Caucuses, regional or thematic, of the civil society.[53] Symptomatic of this tremendous work is also the publication by the members of the WGIG of a book presenting their own views, outside of the context of their official report.[54] French literature in the area is also developing.[55]

A third section is developed in the *Tunis Agenda*: the process of implementation and the follow up of the Summit. Some action lines were defined and summarized in its annex, as well as possible moderators/facilitators among the UN organisations for each of them (Table 3). UNESCO recently hold "WSIS Consultation Meetings" (October 16-19; 22, 2006) in a multi-stakeholders approach.

| **Action Line** | **UN organizations** |
|---|---|
| C1. The role of public governance authorities and all stakeholders in the promotion of ICTs for development | ECOSOC/UN Regional Commissions/ITU/[**UN DESA**] |
| C2. Information and communication infrastructure | ITU/[*APC*] |
| C3. Access to information and knowledge | ITU/**UNESCO**/[FAO/UNIDO] |
| C4. Capacity building | **UNDP**/UNESCO/ITU/ UNCTAD/[UN DESA/FAO/UNIDO] |
| C5. Building confidence & security in the use of ICTs | ITU/ |

51 Internet Governance Project, http://www.internetgovernance.org

52 Computer Professionals for Social Responsibility (CPSR), The Cyber-Federalist, A series of commentaries on the ICANN and Internet governance http://www.cpsr.org/prevsite/internetdemocracy/cyber-federalist.html (On the previous CPSR Web Site)

53 World Summit on the Information Society: Civil Society Caucuses, working groups and coordination spaces, http://www.wsis-cs.org/caucuses.html

54 Reforming Internet Governance: Perspectives from the Working Group on the Internet Governance (WGIG), William J. Drake, Ed., United Nations Information and Communication Technologies Task Force, 2005, ISBN 92-1-104557-6, 275 p.

55 Cahiers du numérique, vol. 2, n° 3, Paris, Hermès, 2002, Numéro spécial sur la Gouvernance d'Internet, sous la responsabilité de Françoise Massit-Folléa, et Richard Delmas.
Jacques Berleur, Christophe Lazaro et Robert Queck, Gouvernance de la Société de l'Information. Loi – Autoréglementation – Ethique, Bruylant, Bruxelles et Presses Universitaires de Namur, 2002.
Serge Proulx, Françoise Massit-Folléa, Bernard Conein, Internet, une utopie limitée. Nouvelles régulations, nouvelles solidarités, Les Presses de l'Université de Laval, 2005.
Marie-Anne Delahaut, Ed., Prospective de l'Internet, Les réseaux numériques comme outils structurants des territoires de la connaissance, Institut Destrée, 2005.

| | |
|---|---|
| C6. Enabling environment | ITU/**UNDP**/UN Regional Commissions/ UNCTAD/[UN DESA/UNIDO/*APC*] |
| C7. ICT Applications<br>E-government E-employment<br>E-business E-environment<br>E-learning E-agriculture<br>E-health E-science | [UN DESA]/UNDP/ITU<br>WTO/**UNCTAD**/ITU/UPU<br>**UNESCO**/ITU/UNIDO<br>**WHO**/ITU, **ILO**/ITU<br>WHO/**WMO**/UNEP/UN-Habitat/ITU/ICAO, **FAO**/ITU<br>**UNESCO**/ITU/UNCTAD/[WHO] |
| C8. Cultural diversity and identity, linguistic diversity and local content | UNESCO |
| C9. Media | UNESCO |
| C10. Ethical dimensions of the Information Society | **UNESCO**/ECOSOC/[WHO/ *ECPAT Int'l]* |
| C11. International and regional cooperation | UN Regional Commissions/UNDP/ ITU/UNESCO/ECOSOC/[**UN DESA**] |

*Table 3: Action Lines (Tunis Agenda)*

# 4. Social and Ethical Issues

The social and ethical issues of the Information Society have been drafted in the different documents of the Summit.[56] We could summarize them as follows:

Basic values:
Respect for peace, uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature; (reference to terms as enunciated in the *Millennium Declaration*)
Justice, and the dignity and worth of the human person. The widest possible protection should be accorded to the family;
Respect for human rights and fundamental freedoms of others, including personal privacy, and the right to freedom of thought, conscience, and religion;
Promote the common good and to prevent abusive uses of ICTs;
Develop aspects of the Information Society being people-centred, human rights-based and sustainable development-oriented;
Focus on the human being as the subject of communication and development (vs. technological approach).

56 World Summit on the Information Society, 2003, The Geneva Declaration of Principles, §10) Ethical dimensions of the Information Society, Nrs. 56-59; The Geneva Plan of Action, C10. Ethical dimensions of the Information Society. Civil Society Declaration to the World Summit on the Information Society, 2003, Shaping Information Societies for Human Needs, 2.4.1 Ethical Dimensions. World Summit on the Information Society, 2005, Tunis Agenda for the Information Society, Nrs. 43, 90 o. Civil Society Statement on the World Summit on the Information Society, Much more could have been achieved, 18 December 2005, § Ethical dimensions.

More specific issues related to ICT:
The value-base of the information society must be founded on the principles contained in the collection of internationally agreed-upon conventions, declarations, and charters. More specifically, equal, fair and open access to knowledge and information resources;
Take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs, including illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings;
Invite relevant stakeholders, especially academia, to continue research on the ethical dimensions of ICTs;
Respect the independence, pluralism and diversity of media, and freedom of information;
Include the principles of trust, stewardship and shared responsibility together with digital solidarity.

*Means*

- Codes of ethics and standards should be adopted in these cases and mechanisms should be established to monitor their application as well as appropriate sanctions for their violation.
- Respect for diversity must be a central criterion in establishing the principles and mechanisms for resolving conflicts that arise in information societies.

These social and ethical issues – they are sometimes also called public policy or societal issues – are now on the way to being prioritized in view of the next IGF, where decisions must be taken regarding how to deal with them, or what working groups should be set up, etc

The first round of consultations, held in Geneva on 16-17 February 2006, included:
-Recognition of an emerging consensus that the activities of the IGF should *have an overall development orientation.*
-Recognition of an emerging consensus that *capacity building* (mainly for developing countries, *Note from the author*) to enable meaningful participation in global Internet policy development should be an overarching priority.
-Recognition that meaningful participation includes both assistance to attend meetings and training in the subject matter of Internet governance.

The ten most frequently mentioned public policy issues in the consultations in view of the meeting of Geneva on 16-17 February 2006 preparing the IGF of Athens (30 October - 2 November 2006) were:
1. Spam
2. Multilingualism
3. Cybercrime
4. Cybersecurity
5. Privacy and data protection
6. Freedom of expression and human rights

7. International interconnection costs
8. Bridging the digital divide: access and policies
9. Bridging the digital divide: financing
10. Rules for e-commerce, e-business and consumer protection.[57]

But other lists were elaborated, for instance by the civil society. Detailed submissions have been received on the following topics (in no particular order):

1. Policy issues for affordable Internet access,
2. Internet content filtering and free expression,
3. E-voting technologies,
4. Enhanced cooperation for coordination and management of critical Internet resources,
5. Defining and fostering Open Educational Resources (OER) on line, around issues of interoperability, access, public infrastructure, in the context of Internet and digital learning technologies,
6. Defining and fostering the 'public-ness' of the Internet – issues of public interest, public domain, public infrastructure and public good in the context of the Internet,
7. User centric digital identity,
8. The WSIS Principles on Internet Governance – Follow-up and Implementation,
9. Transparent and Equitable Management of the Critical Internet Resources,
10. Internet Mark 2 Project Creating Tomorrow's Internet.[58]

A 'detailed presentation' was requested from the proposers using the following suggested approach: a. A concise formulation for the proposed theme; b. A brief description of why it is important; c. How is it in conformity with the Tunis Agenda?; d. How it fits within the mandate of the IGF as detailed in paragraph 72?; e. Who are the main actors in the field, who could be encouraged to participate in the thematic session?; Last but not least, f. Why should this issue be addressed in the first annual meeting of the Forum? The archives of the Internet Governance Caucus, provides some examples (available at https://ssl.cpsr.org/pipermail/governance/): March 7, Right to development; March 10 and 21, Looking at User centric digital identity; March 16, On Enhanced Cooperation; March 18, Asserting the public-ness of the Internet as a guiding principle for IG; March 21, Internet content filtering and free expression; and March 21, Affordable Internet access.

The following topics have been raised and/or discussed on the Internet Governance list of the civil society, without as much detail, as the 10 first ones (in no particular order):

1. IP address allocation
2. Spam
   - Technical methods
   - Human rights implications of filtering as censorship: unintended consequences of filtering. "When one person's free speech is someone else's blasphemy"
3. Network Neutrality

57 The substantive agenda of the first meeting of the Internet Governance Forum – Summary of the discussions and contributions, at http://www.intgovforum.org/Summary%20of%20discussions.htm

58 From the WSIS Civil Society Plenary Mailing List, compiled by Robert Guerra in an email of 27.03.2006 http://mailman.greennet.org.uk/public/plenary/

4. Capacity-building and meaningful participation in policy development
5. Development agenda
Access and affordability
Asserting the public-ness and the egalitarian character of the Internet as a guiding principle for Internet Governance
6. Internationalization of the Internet
   - Multilingualism
   - International Domain Names (IDN) - multilingual roots
7. Network neutrality
8. Diversification of the DN space
9. Human Rights as a cross-cutting issue (1,2 and 3 generation rights) (civil, cultural, economic, political and social rights)
Freedom of expression
Data protection and privacy rights
10. Internet content filtering and free expression
11. Digital identity
12. Enhanced Cooperation
13. Cybercrime
   - Law enforcement co-operation.
   - Overview & comparison of existing instruments: Council of Europe Convention, etc
   - International legal assistance - the good, the bad, and the ugly
   - Human Rights implications.

There may be other lists of which I am not aware, from particular associations who answered the call from the IGF Secretariat to send their own three priorities for the meeting of May 19, 2006.[59] The official IGF website only mentions the set of proposals coming from the consultation, without indicating where they came from: governments, private sector, international organizations…?
Let me also mention two intriguing, or at least curious, letters from the Group of 77 and China, which represents 133 developing nations.[60] Why two lists, when the content is nearly identical, and that the second letter mentions it is a "preliminary list of suggested topics"? (Table 4) Why send the list to the Head of the provisional Secretariat of the Multistakeholders Advisory Group (MAG) created on May 19, 2006 – it could have been done now!

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59 For instance, a Francophone association of French and Belgian people, in which we are involved, Vox Internet, recommended: development of multilingualism, making available publicly all of what is of public interest (including reinforcement of capacity building, free access to knowledge…), and protection of privacy. See the Vox Internet website and especially its Report of the 2005 Seminar, Internet Governance: Common fact and rights, as well as the programme of its 2002009 Seminar: Internet Governance: *The Democratic Construction of Standards*, http://www.voxinternet.fr/index.php?lang=en

60 Internet Government Forum, Contributions, 9 and 31 March 2006, http://www.intgovforum.org/contributions_sa.htm

| Topics mentioned in the letter of March 9, 2006 | Topics mentioned in the letter of March 31, 2006 |
|---|---|
| Focus on:<br>1. The realization of the development content in the Tunis Agenda<br>2. Affordability and availability of the Internet<br>3. Interconnection cost<br>4. Technology and know-how transfer<br>5. Multilingualism<br>6. Local development of software<br>7. Capacity building, and participation of multistakeholders from developing countries | 1. Bridging the Digital Divide: Access, policies and financing<br>2. Affordability and availability of the Internet<br>3. International interconnection costs<br>4. Technology and know-how transfer<br>5. Multilingualism and Local Content<br>6. Local Development on Software and Open Source Software<br>7. Capacity Building and participation of multistakeholders from developing countries<br>8. Equitable and stable resource management<br>9. Internet access and international transit arrangements. |

*Table 4: G77 + China Proposals for Athens IGF*

There are people who think it is a manoeuvre of Governments, and risk dismantling the unity of the multi-stakeholders approach, while the authors of those letters request "a due consideration and weight during the process of selecting themes for the first IGF."!

In the four or five mentioned lists, there are surely overlaps. When looking at the list of IGF consultation, on the first list of the civil society, and at the second of G77 + China, we find 4 issues which are mentioned twice:

1. Bridging the Digital Divide: Access, policies and financing;
2. Policy issues for affordable Internet access;
3. Multilingualism and Local Content;
4. International interconnection costs.

But what strikes me is how weak the relation is to the objectives of the *Millennium Declaration* or its more precise goals: only 3 out of 10 in the IGF consultation list, 4 out of 10 in the civil society list, and of course more in the G77 + China list. The link between ICT and development in the developing countries is not so obvious. I have intellectual difficulties in seeing that spam must be a priority, although it is a real problem (but is it the first?); the same for e-voting technologies, or for the user centric digital identity, etc. We could also wonder why there is such a distance between the terms used in the Summit documents and those used on the lists! There must be strong lobbies behind the scene. An issue to be followed!

Things are moving quickly! The picture should be clearer now, since the agenda of the IGF Athens meeting is fixed. But it is far from reflecting all the preoccupations that we mentioned.

# 5 As a Matter of Stage

It would not be wise to conclude too much, since we are still in the process. Moreover, my idea was to try to find our way in what could be called a maze or a labyrinth. The information society of today is not yet a society: there is no consensus on goals, and I am sure that the WSIS has not yet reached it – except for a "we must go ahead" –, there is no real structure or it is still ill-structured, no oversight mechanism, no agreement either on financial means nor on governance, and in no way a parliament. There are even authors who wonder if there can be an information society,[61] or who still prefer to use the terms "Digital Society", as Abbe Mowshowitz in a recent special issue of the Communications of the ACM.[62]

The question now is: What is to be done? I would suggest four or five 'paths'. I leave it up to you to decide if they are paths to arrive or to leave!

## 5.1 What we have gathered until now

Let us first summarize briefly and schematically what we have understood up to now:

- There is no consensus on what "Information Society" is or could be. Some authors prefer "Digital Society". It is not simply a question of "words"!
- WSIS and the Millennium Declaration:
- How to link ICT and eradication of "extreme poverty" (< US$1 per day)?
- What are the felt needs?
- Are the financial mechanisms suggested in the Tunis Agenda relevant to the issue?
- ICT is the first enzyme (perhaps "catalyst" should a better word) for globalization (Report of Lisbon).
- Globalization,
  - and employment: precarious jobs, youth unemployment (Europe, 15-24 yrs, 18,7%), delocalisation, off-shore business...
  - and questions of the respective roles of the States, the private sector
  - and the demand for new forms of governance,
  - Globalization has increased the tensions between those living "at the centre", and those living on the margins?
- Civil society revival:
  - A protest against the ideology of economic and financial globalisation, and requesting "participative" – if not "deliberative" – democracy,
  - Trying re-creating the social/societal fabric.
- Challenges at the WSIS:
  - Access for All, ICT for economic and social development,
  - Financial mechanisms,
  - Internet Governance.

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61 Erkki Karvonen, Are we living in the Information Society or in the Knowledge Society? A Deeper Look at the Concept of Information and Knowledge, in *Informational Societies. Understanding the Third Industrial Revolution*, Erkki Karvonen, Ed., Tampere University Press, 2001.

62 Abbe Mowshowitz and Murray Turoff, Guest Editors, The Digital Society, Special issue of the *Communications of the ACM*, October 2005, vol. 48, N° 10, pp. 32-74

- Social and Ethical Issues: see details below!

We would now like to present two reflections which are not mine, but in which I recognize in part several of my preoccupations.

## 5.2 "Watcher at the Edge" – The Tyranny of the Globalised World

The first author I want to mention is considered as "A Watcher at the Edge of the World".[63] He lives in Shepperton, Surrey, a little town of 10,796 inhabitants, one hour by train from London, sharing the sky of Heathrow airport. He is the author of *A user's guide to the Millennium.* James Graham Ballard, now 76 years old, has established in Shepperton his refuge, his observatory, and his eagle's nest: in other words, as he said, his look-out post for the disaster to come.

He has been writing fiction, novels, and critiques, examining how modernity is wreaking havoc on society through consumerism, uniformity, creating boredom and violence, under the infinite power of technological development.

He lives there in Shepperton, a real remedy against optimism, because he wanted to be coherent with himself and his very sharp criticism of the consumer society. Why write fiction – and he wrote some very famous books[64] – when you can discover the strange, the twisted, the unreal and even the fantastic there in front of your eyes, and try to make sense of it all. Instead of looking at the cosmos from the earth, he has started to observe the earth from Shepperton. Many of his observations may be found in his *A user's guide to the Millennium.*[65] What will happen to people who are carried away by a civilisation that they do not control? What will happen to the leisure civilisation, the social segregation, to the vertigo originated in the absence of ideals and the disgust of oneself?

"Be careful", he said, "this era is dangerous, where rational and irrational are facing each other. I speak right: be careful 'bad weather in perspective', close your shutters!"

"The British," he adds, "have many qualities, but they have never been authorized to know themselves. They are as animals dressed up in a zoo, where they are not authorized to quit their disguise. Perhaps because they know that they are more violent than the others... That is right, the Renaissance has never arrived unto us." He still adds: "I provoke people for making them furious, to oblige them to listen to me. Otherwise, nobody wants to hear: everybody wants a quiet existence and holidays in Bahamas!"

The quiet tyranny of the global economy is transforming morals, habits, characters... and not in the best direction. James Graham Ballard does not deny that he is taking the role of a moralist – it seems that it amuses him.

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63 James Graham Ballard, Une Vigie au bord du monde (A Watcher at the Edge of the World), in Le Monde des Livres, 10 mars 2006.

64 Histoire de catastrophes, Livre de poche n° 3818; The Crystal World, Flamingo Modern Classic, 1970 (La Forêt de cristal, Denoël, 1967); Crash: A Novel, Vintage, 1995; Picador USA Edition, 2001 (Crash! Traduit de l'anglais par Robert Louit, Denoël, 2005)

65 A user's guide to the Millennium, Essays and Reviews, Picador USA, 1997 (Millénaire, Mode d'emploi, traduit de l'anglais par Bernard Sigaud, éd. Tristram, 370 p., 23 €). See also, same author, *Millennium People,* Haper Perennial 2004 (*La révolution des classes moyennes*, Denoël, 2005).

## 5.3 The Disenchantment of the World

The second author I want to quote from is the well-known Marcel Gauchet, the author of *The Disenchantment of the World*,[66] the thinker of "the religion of the end of religion". He recently commented on the issue of the cartoons of Mohammed, by saying: "The Western World is blind about the consequences of globalization of economics and of the ethical ways of living." The Muslim people feel humiliated: the Western World does not understand that for Muslims Mohammed is the last prophet, after Moses and Jesus, i.e. the most refined revelation of God himself; but on the other hand most of the Muslim countries are today the most backward in development terms, expelled from the so-called 'modern and Western world' which is more and more pervaded by the absence of religious commitment or reference (with perhaps an exception for the US, and in another way for India and China). The globalised world is *defined only as an economic and financial world.* "The Western world," says Gauchet, "is blind on the effects of that globalization of economy and values, in terms of disintegregation of the traditional family, of violent change of the relationship between man and woman, between generations. What is at stake is an 'existential uprising' – if not an insurrection."[67]

## 5.4 Be Critical (R. Kling) – Analyses of Discourse of Different Actors

Are these reflections purely negative? I would prefer to call them 'critical', in the sense used by Rob Kling when defining *social informatics*. "The critical orientation – differentiated from the normative and analytical orientations – refers to examining ICTs from perspectives that do not automatically and uncritically accept the goals and beliefs of the groups that commission, design, or implement specific ICTs. (...) It encourages information professionals and researchers to examine ICTs from multiple perspectives (such as those of the various people who use them in different contexts, as well as those of the people who pay for, design, implement, or maintain

66 Marcel Gauchet, *The Disenchantment of the World. A Political History of Religion,* translated by Oscar Burge, with a foreword by Charles Taylor, Princeton University Press, 1997 (translated from the French, *Le désenchantement du monde*, Paris, Gallimard 1985). Does the disenchantment mark the end of religion in Weber's scheme, not only as a significant institutional and social force but as a personal reality as well? "The term 'disenchantment' of the world can be traced to the Romantic movement, where it was considered to be a consequence of scientific progress. Friedrich Schiller spoke about the 'de-divinization' of the world, which was translated by Max Weber as the 'disenchantment' of the world. (...) The divinization means that there are no traces of God to be found in the world. This is the meaning used by Schiller and Weber. 'Disenchantment' translates the German *Entzauberung*, and expresses that, as a result of scientific progress, the world cannot considered anymore as a clue to discover the hand of God acting in nature." (Mariano Artigas, *The Mind of the Universe. Understanding Science and Religion,* The University of Notre Dame, October 21st, 2000. Published in: Alice Ramos and Marie I. George, Eds., *Faith, Scholarship, and Culture in the 21st Century,* Washington: The Catholic University of America Press, 2002, pp. 113-125. http://www.unav.es/cryf/themindofuniversenotredame.html

67 Entretien avec Marcel Gauchet, L'Occident est aveugle sur les effets de la mondialisation de l'économie et des mœurs, in Le Monde, 12-13 mars 2006, p.14.

them) and to examine possible failure modes and service losses, as well as ideal or routine ICT operations."[68]

Are the reflections of Ballard and Gauchet too critical, in their precise meaning? Should we prefer to speak about the benefits of eLearning, eEducation, eContent, eGovernment, eAdministration, eHealth, eCommerce... – I am still wondering why it is necessary to prefix all the words with an "e", including eEurope! If we speak benefits – and I am sure there are – we must also speak about the benefits to the telecom operators, to big businesses, of financial deals, including the derivatives, the hedge funds... We must also wonder why IPR has become one of the biggest issues of our time, and one issue that must find its chapter in every book on social and ethical issues, whereas the accessibility to information – "Information for all" – is hardly mentioned![69]

Benefits – disadvantages: which ones and for who? It should be of utmost interest to continue the efforts in analysing the narratives about the information society.[70] We have done, within IFIP-TC9, an analysis of the speeches about 'Policies on ICT in Society' for several regions and countries of the world. This work has to be continued.[71]

## 5.5 Implementation (Tunis Agenda) – Benchmarking

We said that the Tunis Agenda proposes a way of implementation, linking the action lines and the organizations within the UN organizations able to take them in charge (Table 3).

But the analysis of action requires means of control. I would just mention the weakness of the European benchmarking process.[72] We started, in 2002, with 23 indicators that were quite explicitly spelled out in terms of increasing populations having connections, number of computers per 100 pupils at primary / secondary / tertiary levels, percentage of workforce with (at least) basic IT training, percentage of health professionals with Internet access... (Table 5)

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68 Rob Kling, Howard Rosenbaum, and Steve Sawyer, Understanding and Communicating Social Informatics. A Framework for Studying and Teaching the Human Contexts of Information and Communication Technologies, Information Today, Inc., Medford New Jersey, 2005, ISBN 1-57387-228-8, p. 7.

69 European Commission, eEurope 2005: An information society for all. An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002, Brussels, 28.5.2002, COM(2002) 263 final

70 Jari Aro, 2001, Narratives and Rhetoric of the Information Society in Administrative Programs and in Popular Discourse, in: Informational Societies. Understanding the Third Industrial Revolution, op.cit. See also: Richard Sennet, Récits au temps de la précarité, in Le Monde, 5 May 2006.

71 Perspectives and Policies on ICT in Society, Jacques Berleur and Chrisanthi Avgerou, Eds., A TC9 Handbook, IFIP, Vol. , Springer Science & Business Media, 2005, iv + 290 p.

72European Commission, Benchmarking eEurope,
*http://europa.eu.int/information_society/eeurope/2002/benchmarking/index_en.htm*

| List of eEurope Benchmarking Indicators (2000) |
|---|
| *Cheaper, faster Internet* |
| - Percentage of population who regularly use the Internet |
| - Percentage of households with Internet access at home |
| - Internet access costs |
| *Faster Internet for researchers and students* |
| - Speed of interconnections and services available between and within national research and education networks (NRENs) within EU and world-wide |
| *Secure networks and smartcards* |
| - Number of secure servers per million inhabitants |
| - Percentage of Internet-using public that have experienced problems |
| *European Youth into the digital age* |
| - Number of computers per 100 pupils at primary / secondary / tertiary levels |
| - Number of computers connected to the Internet per 100 pupils at primary / secondary / tertiary levels |
| - Number of computers with high speed connections per 100 pupils at primary / secondary / tertiary levels |
| - Percentage of teachers using the Internet for non-computing teaching on a regular basis |
| *Working in the knowledge-based economy* |
| - Percentage of workforce with (at least) basic IT training |
| - Number of places and graduates in ICT related third level education |
| - Percentage of workforce using telework |
| *Participation for all in the knowledge-based economy* |
| - Number of Public Internet Points (PIAP) par 1000 inhabitants |
| - Percentage of central government websites that conform to the WAI (Web accessibility initiative) accessibility guidelines at A level |
| *Accelerating eCommerce* |
| - Percentage of companies that buy and sell over the Internet |
| *Government on-line* |
| - Percentage of basic public services available on-line |
| - Public use of government on-line basic public services for information: for submission of forms |
| - Percentage of public procurement which can be carried out on-line |
| *Health on-line* |
| - Percentage of health professionals with Internet access |
| - Use of different categories of web content by health professionals |
| *Digital Content for global networks* |
| - Percentage of EU websites in the national top 50 visited |
| *Intelligent transport systems* |
| - Percentage of the motorway network (vs. total length of network) equipped with congestion information and management systems |

*Table 5: List of eEurope Benchmarking Indicators (2000)*

The trend was clear: the indicators were mainly concerned with the diffusion of the use of the Internet.

For *eEurope 2005* benchmarking, the Commission has proposed in November 2002 a new set of indicators.[73] It recognized that to improve the quality, measurement of *eEurope 2005* indicators should make greater use of official statistics from the National Statistical Institutes and Eurostat.[74] Therefore, the Commission proposed 14 policy indicators and 22 supplementary indicators along with their sources and frequency of collection. (Table 6)

| ***List of eEurope 2005 Benchmarking Indicators*** |
|---|
| *Internet indicators* |
| Citizens' access to and use of the Internet |
| Enterprises' access to and use of ICTs |
| Internet access costs |
| *Modern online public services* |
| e-government |
| e-learning |
| e-health |
| *Dynamic e-business environment* |
| Buying and selling on-line |
| e-business readiness |
| *A secure information infrastructure* |
| Internet users' experience and usage regarding ICT-security |
| *Broadband* |
| Broadband penetration |

*Table 6: List of eEurope 2005 Benchmarking Indicators*

I must say that I was more positively surprised by the ITU's presentation, during the Geneva Summit, of its *Digital Access Index* (DAI), although the goal is similar: "Boosting New Technology Adoption."[75] "The results of the ITU's new DAI suggest that it is time to redefine ICT access potential.

"Until now, limited infrastructure has often been regarded as the main barrier to bridging the Digital Divide. (...) The research, however, suggests that affordability and education are equally important factors. To measure the overall ability of

[73] Commission of the European Communities, Communication from the Commission to the Council and the European Parliament, eEurope 2005: Benchmarking Indicators, Brussels, 21.11.2002, COM(2002) 655 final, *http://europa.eu.int/comm/secretariat_general/regdoc/liste.cfm?CL=en*

[74] Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: *eEurope 2005: An information society for all – An Action Plan for the Sevilla European Council*, 21 and 22 June 2002
http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf

75 International Telecommunication Union, ITU Digital Access Index: World's First Global ICT Ranking. Education and Affordability Key to Boosting New Technology Adoption, http://www.itu.int/newsarchive/press_releases/2003/30.html

individuals to access and use ICTs, the ITU study has gone beyond the organization's traditional focus on telecommunication infrastructure."[76] The DAI combines data related to five categories: infrastructure, affordability, knowledge (level of literacy), quality, and usage; those categories are grouping eight variables. (Table 7)

| ITU: Digital Access Index | |
|---|---|
| Infrastructure | Fixed telephone subscribers per 100 inhabitants<br>Mobile cellular subscribers par 100 inhabitants |
| Affordability | Internet access price as percentage of per capita income |
| Knowledge | Adult literacy<br>Combined primary, secondary and tertiary school enrolment level |
| Quality | International Internet bandwidth per capita<br>Broadband subscribers per 100 inhabitants |
| Usage | Internet users peer 100 inhabitants |

*Table 7: Categories and Variables of the ITU's Digital Access Index*

The DAI, says ITU, is considered as being "an essential element in the implementation of the Plan of Action being developed for the WSIS and in the use of ICTs to meet the United Nations Millennium Development Goals (MDGs)."[77] Let's restate them: 1. Eradicate extreme poverty and hunger. 2. Achieve universal primary education. 3. Promote gender equality and empower women. 4. Reduce child mortality. 5. Improve maternal health. 6. Combat HIV/AIDS, malaria and other diseases. 7. Ensure environmental sustainability. 8. Develop global partnership for development.

All this has to be developed and structured. If we want to create an Information Society, and to govern it, we need the means. I know that many people are trying to 're-enchant' the world, but we must avoid narrating stories which are just a pitfall or a trap door exploiting the credulity of the masses.

## 5.6 Social and Ethical Risks – Public Spaces – Early Warning and Technology Assessment

Measuring the level control is not sufficient. We are all aware that there are social and ethical risks. Two steps can be proposed to meet them. The first one would be the re-creation of public spaces, as mediation between theory and practice, expertise and application, where there could be real "deliberation" (rather than a negotiation) before decision-making. The second step could try to anticipate the social and ethical risks, and take appropriate measures while there is still time. We need to come back, in this perspective, to one of the first tasks of Technology Assessment: *early warning*.

76 ibid.

77 Media Advisory, ITU Launches First Digital Access Index, Geneva, 17 November 2003, http://www.itu.int/newsarchive/press_releases/2003/Advisory-19.html

In the context of nanotechnologies, a Canadian association, Erosion (ETC Group: Erosion, Technology, and Concentration) is requesting the creation of an International Convention for the Evaluation of New Technologies (INCENT), under the auspices of the United Nations. In a report on the "Nanogeopolitics", published in 2005, the Director of the Group, Pat Mooney, considered that it was urgent to close the 'cycle of crises' and to create with the INCENT treaty "a watching system of alert or early listening (not a phone tapping!) able to control any new technology of importance."[78]

This kind of preoccupation has already been explored and done efficient in the seventies by the US Office of Technology Assessment (created in 1972, and disbanded in 1995 by Newt Gingrich, the Speaker of the Congress from 1995 to 1999, because its Chair was a Democrat, Edward M. Kennedy), and in the eighties on the European scene (with a serious decrease when Jacques Delors decided to abandon the FAST Programme, at the same time as Gingrich, opposing the arguments of European competitiveness).[79] The FAST Programme (Forecast and Assessment of Science and Technology – 1979-1994), under the enthusiastic leadership of Riccardo Petrella, was a kind of think-tank of the European Commission. It produced more than 400 reports, and 30 books. But more interestingly, it created, before its time, a *network* of more than 600 research centres throughout the whole Europe. Now that there is one single dominant economic model, it is urgent to re-establish such institutions. Some of them are still continuing well (The Dutch Rathenau Instituut, the German Institut für Technikfolgenabschätzung und Systemanalyse, the Danish Teknologirådet, etc...) and could be the basis for revival at the European level.

## 5.7 Social and ethical issues again: An IFIP-WG9.2 and SIG9.2.2 contribution

What are the social and ethical issues? The task of identifying them is not an easy one.

Let us first recognise that "most of the discussions on the future of the information society suggest that it is being determined by technical feasibility and driven by technology push more than by users' and customers' needs. Little attention is paid to social impact and ethics – except, perhaps, in the fields of health, education and culture."[80]

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78 Une enquête de Dorothée Benoit-Browaeys, Nanotechnologies, le vertige de l'infiniment petit, in Le Monde Diplomatique, doc. cit., pp. 22-23.

79 Jacques Delors et la Commission Européenne, Pour entrer dans le XXIe siècle, Emploi, Croissance et Compétitivité, Le Livre Blanc de la Commission des Communautés Européennes, Paris Michel Lafon / Ramsey, 1994 (translation from The White Book Growth, Competitiveness, Employment. The Challenges and Ways Forward into the 21st Century, COM(93) 700 final, Brussels, 5 December 1993, available at: http://www.europa.eu.int/en/record/white/c93700/contents.html

80 Jacques Berleur, Vigdis Finnbogadottir, Björn Bjarnason, and Klaus Brunnstein, Social and Ethical Aspects of the Information Society of ICT, Commission 8 Report to WITFOR, Vilnius, Lithuania, 27-29 August 2003, in: WITFOR 2003 White Book, Dipak Khakhar, Ed., IFIP Press 2003, pp. 259-339. ISBN 3-901882-18-9

In a recent presentation at a side-event of the Tunis Summit, after having presented different modes of regulation or governance – technical, self-regulating and legal – we presented a personal summary and conclusion of the social and ethical issues raised at those different levels.[81] They were related as follows:

- Social and ethical issues related to Technical Governance,
- Social and ethical issues related to Self-regulation,
- Social & Ethical Issues in the Regulation of the Internet and of the Information Society.

I shall not develop them here. But as they represent a substantial part of work that we did within the IFIP Special Interest Group SIG9.2.2 on the Ethics of Computing, we mention here some, that seem more significant and that were not mentioned earlier, that could be developed in the framework of the future agenda of the IGF.

**Social and ethical issues related to technical governance:**

- DNS issues: they are identifiers for social identity, commerce...
- Respect of the countries diversity, regarding its own Internet (legislative) policy,
- Private organisations are taking important decisions shaping the future of society and our ways of living without clear participation. This is a major issue in our modern world where democracy and ethics are merging,
- ICANN: how can disputes among the vested interests be resolved in the organisation?
- Why is GAC only an "advisory committee" within ICANN? Where are the developing countries in ICANN, in GAC?[82]
- Where is China in the negotiation of standards?
- "The possible architectures of Cyberspace are displacing architectures of liberty." (Lawrence Lessig)[83]
- Limits and validity of technical norms,
- How should the approximately 4250 technical norms (*Requests for Comments*, in IETF language), be decided by 2000 people and a few organizations without recognized status, and become universal norms?

**Social and Ethical Issues Related to Self-regulation:**

- Self-regulation: its place in the normative order?
- How should private actors have a normative role *for all*?
- The role of the regulators reduced to protect citizen and customers?

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81 Jacques Berleur, Governance in the Information Society - Social & Ethical Aspects, in: Past, Present, and Future of Research in the Information Society (PPF), 13-15 November 2005, Tunis, Tunisia, sponsored by Society for Social Studies of Science, Louisiana State University, World Science Project, Hewlett Packard, CODATA, Microsoft, Internet2, and the International Federation for Information Processing.

82 See Digital Freedom Network: "ICANN through its actions and inactions has succeeded in sidelining the interests of developing countries", May 19, 2003, http://dfn.org

83 Lawrence Lessig, Code and other laws of Cyberspace, New York, Basic Books, 1999.

- The signs of real participation of the actors are rare: where is democracy?
- Is self-regulation making the economic actors more responsible?
- Request more professionalism from professional bodies, i.e. clearer statements on issues in specialised fields where they develop their competence
- Increase international exchange between professional societies and institutional groups, respecting the cultural, social, and legal differences;
- Increase self-regulation legitimacy by promoting large participation of all the concerned parties
- Refrain from slogans of the past, such as "Let business self-regulate the Net" which are at risk of damaging the societal fabric, and which do not favour cooperation between private and public

**Social and Ethical Issues in the Regulation of the Internet and of the Information Society**

- Try to really identify the actors. There is a nebula of actors. Who is finally regulating? Lack of transparency. Predominance of vested interests – not always the same.
- At the self-regulation and legal levels, the trend is to have minimum regulation. But, there is no real democratic process and no real ethical concern.
- Ethics and democracy are "under control". But who is controlling? See a proposal to the Council of Europe of *A charter of rights and duties for Internet users*.[84] There are lobbies.
- What is the legal approach of the ethical statement: "As soon as the interests of the majority are at stake and that people concerned risk to be made more fragile and vulnerable by self-regulation, the public authority must interfere and ensure that the "horizon of universality", in terms of access, control and participation, remains open," assuming that the role of ethics is to keep open an horizon of universality;
- Avoid the appropriation by anybody; above all if there are vested interests, which do not respect the balance through appropriate levels of democratic discussion.
- Regulation is multidimensional and must find its coherence and consistence.
- Today regulation is still a "battlefield".

Final, final comment: during this time of intense reflection on the "Information Society for All", our attention has been focusing on important specific questions, but I am still wondering if on the suggested battlefield several lobbies have not been continuing to build their own business if not empire, without being embarrassed by social and ethical preoccupations. Other professionals were astonishingly outside of the debate. *TechNews*, a monthly issue of News Gathering Service for IT Professionals, published by the Association for Computing Machinery (ACM), has just recently reported on some issues during the two phases of the Summit. Even its

[84] Council of Europe, Press Service, 277a(2003). Among the partners, we find the Global Business Dialogue on eCommerce!

Special Interest Group on Computers and Society (SIGCAS) was rather silent on the topics.

Isn't it urgent to create Internet Governance Fora (IGF) at the national or regional level where politicians, unions, activists, scientists... can meet and support each other in what we could call *multistakeholders public spaces*. We mean places where deliberations – and not only negotiations as already suggested – can take place, where values, culture... are taken into account: those spaces should be considered as spaces for governance.

After a time of hectic action, the time has now come to revisit the whole set of issues quietly and with sharp theoretical tools of analysis. We already mentioned the 'Concept papers' of the *Internet Governance Project*, (www.internetgovernance.org). But there are many other groups working along that line: the already mentioned group *Vox Internet* (in France, www.voxinternet.org), the *United Nations Group on the Information Society*, a group of high level representatives of 22 UN agencies committed to the implementation of the outcomes of the WSIS (www.ungis.org)[85], the *Internet Governance Caucus* from the Civil society (www.net-gov.org), the WSIS Civil Society Meeting Point (www.wsis-cs.org)...

There is still a lot of work to be done.

85 ITU, International steps taken to build global Information Society, United Nations agencies to coordinate implementation of WSIS Plan of Action, http://www.itu.int/newsroom/press_releases/2006/NP05.html, Geneva 20 July 2006.

# GENERAL CONCLUSION

# The Information Society : What Next ?

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**Abstract:** Addressing the issues of governance, ethics and social consequences in today's Information Society is a monumental task. The authors who have contributed to this publication have risen to the challenge and produced papers that offer a variety of perspectives reflecting their different disciplines. This Chapter attempts to give an overview of the theme of the conference and the work contained within this book by drawing out the potential for influencing policy and the development and deployment of future technologies. It does this by using a stakeholder categorisation in terms of: international, governmental, organisational, educational and individual. Professionals and professional bodies have a major role in promoting awareness, and the ways in which they can do this are discussed. Finally, following the original conference programme, the steps that can be taken by Working Group 9.2 within IFIP together with the recommendations made at the end of the conference are briefly summarised.

**Keywords:** policy, education, social and ethical awareness, professionalism, professional bodies.

## Introduction

The theme at the heart of the event leading to this publication is one which concerns the involvement of citizens in a society increasingly influenced by technology. The influence has been so great that the terms "Information Society" and "Information Age" are in common use. The issue for discussion is not so much *whether* citizens are involved – they clearly are – but is more in terms of how and to what extent they are involved as regards their status as citizens. That is, how far have democratic principles informed this society currently being created and that we now find ourselves in. Given that the 'Information Society' is understood as describing an environment that incorporates the characteristics of social constructs, the question of individual participation is not a trivial one – it is one of legitimacy. If democracy

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stands for the right to participate in the governance of society then it follows that those same prerogatives should apply in an 'information' society.

In the preceding chapters we have been reminded of the degree to which information and communication technologies (ICT) have permeated social structures and have changed social practices in the government, commerce, finance, education and health sectors. Thus the arguments of these authors centre on the opportunities offered by ICT for a democratic society, but which in the creation of the new information society have been largely ignored at the most fundamental level. That is, the opportunity for the citizens to be included in the *process* of change as opposed to passive receivers of the combined driving forces and policies of government, commerce and the technological imperative. We are reminded of the powerful influence of external forces (for example, the economic power of the financial markets) and we could wonder whether any attempt at citizen empowerment is likely to make a difference.

The observations, research, and theoretical positions of the authors all highlight the different approaches available to influence future developments, and it appears that positive moves are underway. Although at times, for those involved in the 'social and ethical impact' movement such as IFIP TC9 and its working groups, our work seems to progress rather slowly, there is a growing awareness of the advantages of a multi-stakeholder approach and of the issues that concern us.

## Taking a holistic view

The contributions in this book have addressed the questions of democracy and governance in its various manifestations: the political, economic and ethical dimensions in the context of the technological background of the information society.

By taking these different perspectives we have gained a holistic view of the influences at work, and can see more clearly how we, in turn, may take a strategic approach in influencing future developments. Although the view is decidedly European the influences of policy, economics and education can be applied in any context. The legal and ethical viewpoints, however, are culturally influenced and stem from the values held to be of importance within a given society. The challenges of the global information society are still to be overcome, and in truth may never be, although we can see that efforts are being made at an international level by, for example, the United Nations in their organisation of the World Summit on the Information Society (WSIS) (Berleur, this volume).

If we then take a stakeholder approach (as promoted by WSIS) and look at the levels of influence discussed in this book: international, governmental, organisational, educational and individual we are better placed to see where each of us – in our various areas of work - can make a contribution.

International: Clearly the international arena is vital in setting the agenda and goals for governments to pursue. In respect of ICT Jacques Berleur (in this volume) has noted the key role of technology as "powerful tools to foster socio-economic development ... and contribute to ... internationally agreed development goals" (UN Resolution, December 2002).

Governmental: The European Union through its policies and directives sets the tone for the governments within the EU, most obviously impacting on legislation but also on research and development. The social-economic impact of technology has long been a part of the research agenda, and in recent years we have seen an increase in interest in ethical evaluations and assessments. Dissemination and communication are vital areas in this respect (Laopodis, in this volume) both within the European Commission research departments, and to the public: "The Commission sees that to exploit the economic potential of RFID, privacy and consumer concerns associated with the use of RFID tags need to be handled constructively, with the assent of all stakeholders." (Defraigne, this volume).

Organisational: Although the current trend for promoting Corporate Social Responsibility has its drawbacks (Defraigne, in this volume) and may often be interpreted as a 'tick-box' exercise, the fact that organisations are – for whatever reason – signing up to it, allows some room for influence. In practical terms – as outlined by Defraigne – CEO's are rarely given enough time to put in place long term strategies, and the financial markets drive the agenda. However, the example of the withdrawal of the Norwegian Government pension fund from Wal-Mart demonstrates that ethical choices can be made. We have also seen over the last few years an interest from the general public in 'ethical companies' (as shareholders *and* consumers) which has had some impact.

Educational: There are practical ways to raise awareness of social and ethical issues through formal education (Marten; Neal; in this volume) in school IT programmes, and at undergraduate level in the Computing Science curricula. The reports given during this conference are very positive and show that these age groups can be engaged in this debate. These technologies and their future counterparts are arguably more relevant to these up-and-coming citizens of the Information Society than to anyone else, and much more could be done in this area. Continuing Professional Development is another way of bringing these issues to the attention of the professional in their respective fields of expertise (see e.g. Johnson, in this volume). Last, but by no means least, is the education of the public which has until now been via the media, and has seen some success.

Individual: The influence of individuals is perhaps greater than may be apparent at first sight. Individuals are often thought of as end-users who on the whole are not equipped to take on the social and ethical challenges of ICT (due to lack of familiarity with the 'digital domain'). This view, however, merits further investigation. We have seen above that the EU is keen to get the users' 'on board' – they are vital if new technologies are going to be economically successful; also mentioned above is the role played by individuals as shareholders in organisations. Finally, individuals as citizens are beginning to find their voice. The Internet more than any other communications technology allows individuals the space to express their views, and although this may not reflect any democratic process as discussed by Rodotà or Kettner (in this volume) concerns can be aired.

In all of the above areas, we can see that there is not only a potential for influencing change, but that the social and ethical context is represented – perhaps not to the extent we would like to see, but nevertheless we have a foundation for improvement.

## The role of the professional and professional bodies

In the previous section I said that by looking at the different levels of influence we could, in our own areas of work, make a contribution towards democratising new technologies and raise the profile of their social and ethical dimensions. In this context the role of the professional and professional bodies has major significance.

The conference which took place in May 2006 and this book are the result of a joint collaboration between the University of Namur, and IFIP. IFIP[1] is a "non-governmental, non-profit umbrella organization for national societies working in the field of information processing" and its mission is to "encourage and assist in the development, exploitation and application of Information Technology for the benefit of all people". Professional bodies in the ICT field, and their membership, thus have through IFIP an international forum and an international voice. Through the work of the Technical Committees, Working Groups and Special Interest Groups operating within IFIP knowledge and experience can be shared between professionals and disseminated to a wider audience (as for example, this publication). IFIP has links with the United Nations (it was established in 1960 under the auspices of UNESCO) and as a result can claim a certain legitimacy in the international arena. As an organisation comprised of experts in ICT it is well placed to extend its influence beyond its membership to policy at decision makers at international level. Much more could be made of this, and indeed through the redevelopment of its Strategic Plan this is what it is aiming to do (among other things).

As far as addressing the social and ethical consequences of ICT, the Working Group 9.2 and Special Interest Group 9.2.2 brings together a community with expertise in different disciplines to work on projects and initiatives aimed at raising awareness on a general level as well as in detail[2]. Representatives from the national societies (relating to computer professionals) are included in discussions and events, and in this way can act as mediators – sharing best practice, and giving feedback to the national societies. In this way these groups attempt to bring influence to the professional bodies. The work of SIG 9.2.2 in particular has a direct bearing on the promotion of professionalism. Originally tasked with the investigation of Codes of Conduct of the national societies (Berleur and Brunnstein, 1996) its work has been concerned with informing the professional societies (Berleur et.al. 1999), and giving advice on how to write a code of conduct (Berleur et.al. 2004). As this list of publications shows, the key initiator of these projects has been Jacques Berleur – just one of his many contributions to this field.

What role can professional bodies take themselves to promote awareness? As well as producing Codes of Conduct for current membership, some have taken responsibility in respect of future professionals. The British Computer Society (BCS), through its accreditation system of UK university degrees, states that courses seeking "accreditation must cover the legal, social, ethical and professional issues relating to information systems engineering" (Neal, in this volume). This policy initiative has a direct influence on the graduating professionals in the UK, and courses in the UK reflect issues directly relevant to the development, design and

1 www.ifip.org

2 A summary of publications and events can be found from the IFIP web site (www.ifip.org) and following the link to TC9.

implementation of information and communication systems. For its existing membership of practising professionals the BCS has recently established an Ethics Forum "in recognition of the role of ethics within the professional domain" to "provide a strategic link between practitioners and external parties concerned with the ethical dimension of computer technologies".[3]

## Next steps

In the concluding part of the conference in May the Working Group 9.2 facilitated group discussions on how the agenda for promoting the social and ethical aspects of ICT could be moved forward. As we have seen from the work described above much is being done, but there is much more to do – particularly in influencing future developments. Recommendations were made in line with the categories given above i.e. EU level, IFIP level and the professional societies. These were, in brief:

- Pursue the lobby at EU level
- Make use of the expertise in the IFIP community to bring case studies as analogies to stakeholders
- Create a dialogue within IFIP in terms of education and encourage new approaches to addressing the issues by offering a special award to graduates
- Produce short informative papers
- Initiate a dialogue on corporate social responsibility

As individuals and professionals we need to be conscious of the ICT that we use and the choices we make, and as professionals contribute to continuing professional development (our own, and our colleagues).

## Conclusions

From the wealth of expertise represented in this publication we can see that we are merely at the beginning of a substantial journey. There are many issues to be addressed, and it is likely that as the pace of technological development increases there will be many more that have not yet been thought of. However, we should not despair. This publication is an indication of the growing concern regarding these issues, and the awareness of many (e.g. individuals using the Internet to communicate their concerns, and civil liberties groups). It is also an indication of a commitment to pursue a goal that brings citizens of the information society into the debate, and that aims for a better technological environment.

These goals can be achieved through the continuing work at all levels to influence the debate, the policies that guide development, and the education of professionals and citizens. Although it may seem a daunting task we are not working in isolation but as individuals within communities of professional practice. The papers presented here show how widely the communities of interest are spread, and bring the expertise necessary to influence the future – the case studies, the methodologies proposed and the sectors that have been represented have provided the material for a firm foundation of further work.

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3 www.bcs.org/forums/ethics

It is a testament to the work of Jacques Berleur that such a diverse, informed, insightful and intellectually stimulating body of knowledge has been brought together following an event in honour of his work. For those who have known him as a member of WG9.2 and as Chair of SIG 9.2.2 this is not surprising, it is no more than he deserves for his tireless input, commitment "to the cause", uniqueness, humour, warmth and last but not at all least - hospitality. On behalf of the members of WG 9.2 and myself personally: Thank you Jacques, it has been a pleasure to work with you.

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Greek national, holds degrees in Physics, Business Administration (MBA) and Informatics (Doctorate). He has been involved for more than 35 years in both private and public sector policy actions, businesses and societal initiatives.
After a technical and managerial career in private sector (IBM, FIAT, banks etc.) and ICT teaching and research in University in Greece and abroad, in 1998 he joined the European Commission where he has consecutively hold management and technical positions mainly in DG Information Society and Media (RTD and dissemination of results) and DG Enterprise (innovation, standardisation and e-business policies).
He also served as ad hoc advisor of the Greek government on RTD, ICT and regional development issues during EU presidencies. He has launched his own companies in ICT and publishing and been active in boards of learned societies and non-for-profit professional associations (Greek Computer Society, IFIP, CEPIS etc.)
He has published over 130 papers in conference proceedings, scientific journals, and special editions mainly on IST issues and societal implications; and he is the author of 20 books/monographs on related issues.
After his retirement from EU in March 2006 founded the non-profit organisations *InnoPolis: Centre for Innovation and Culture* (www.innopolis.org) and *Europe of Cultures Forum: Adriatic& Ionian Chapter* (www.eocf-ai.org).

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# Bern MARTENS

Dr. Bern Martens studied mathematics and computer science at the Katholieke Universiteit Leuven in Leuven, Belgium. Subsequently, he worked as a researcher and part-time lecturer at the KULeuven Department of Computer Science. His research interests lay in artificial intelligence, theoretical computer science and software engineering, focussing on the field of logic programming. Since 1998, he is a lecturer in Information Technology at the Teacher Training Department of the Catholic University College Leuven (KHLeuven), educating students for teaching IT and computer science in secondary school. He is responsible for an annual seminar series on ethical and social issues in IT with final year IT teacher training students. Together with Gerben Dierick from the KHLeuven Rega Department, he teaches a course on the same issues to European students in the KHLeuven International Programme. To further develop and disseminate the KHLeuven expertise on IT, ethics, education and teacher training, Bern Martens has published a book and several papers in the area, and maintains a supporting website. He leads seminars and workshops for third parties, advises on educational policy, and encourages students to develop and distribute teaching material and set up experimental classes in secondary schools.
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# Les NEAL

Les Neal was a founder member of the Department of Computer Science at Brunel University, England, where he developed degree programmes in Information Systems and Computer Science at both the undergraduate and postgraduate levels. He took a particular interest in the professional development of students particularly those on work placements. This included the design of a Diploma of Professional Development obtainable by students reporting on high quality learning experiences during their work programme.

His main research activity centred on producing efficient algorithms for point-plotting on conics. While of application within computer graphics the algorithms, were also of use within the automotive industry for determining efficient robotic paths. He has also published widely in the field of educational computing, particularly addressing the use of project work, the teaching of professional issues and handling group work within large classes.

In the early 1990s he was the contractor for a major TEMPUS project that introduced western-style curricula and resources into two Bulgarian universities.

For many years he has been closely associated with the British Computer Society, as a member of Council, Chair of the Membership Committee, and as a member of the Accreditation Committee and the Ethics Panel of the Society.

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# Yves POULLET

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# Chris ZIELINSKI

Chris spent over 20 years in the publishing sectors of various UN system organizations in Europe, India, and Egypt, before becoming Chief Executive of the Authors Licensing and Collecting Society in 1996. Chris is currently working at the World Health Organization in Geneva on analysing knowledge systems in developing countries. Chris is Vice Chair of IFIP WG 9.2 (Social Accountability), and a member of SIG 9.2.2 on Ethics. In May 2004, he was appointed to the WHO Research Ethics Review Committee. He was a founder and first chair of the Special Interest Group on Information Ethics of the International Federation for Information and Documentation (FID), appointed to the Unesco InfoEthics Advisory Group, the WIPO Standing Committee on Information Technology, and elected to the Steering Group of the Internet Societal Task Force.

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## Penny DUQUENOY

Penny Duquenoy is Chair of IFIP Working Group 9.2 (Social Accountability). She is a Senior Lecturer at Middlesex University with a Ph.D. in Internet Ethics and a background in philosophy. She is a leading researcher in the field of Ethics and ICT with more than 30 publications on aspects of ethics in relation to applied information technologies (currently participating in ETHICBOTS - an EU project investigating ethics of robotics and artificial intelligence). In addition to long term membership of IFIP Special Interest Group on Ethics (SIG9.2.2) Penny is Manager of the British Computer Society Ethics Forum.

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