

# Representations as factor of organizational change

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## **Abstract**

Many current reflexions focus on the question of impact of information and communication technologies (ICT) on our lives and on organizations. This starting point presents some problems to sociological analysis. We think that it is necessary to take into consideration what one can call the representations, imaginary, utopias or ideologies as well as discourses linked to technological development to understand what technologies will do to us. In this perspective, it is striking that the discourses accompanying the development of ICT – discourses telling us that we enter in an Information Society or Information Age – carry a vision of the society and individuals that joins the contemporary theories of management which stress the need for more flexibility. Among the possible implications of ICT development in this particular context, we worry about destabilization of individuals in a society where everyone is asked to be the builder of his own life. And if solutions to this problem exist, we think that they have better chance to stem from a political perspective rather than an ethical one.

## **1 Introduction**

Many current reflexions focus on the question of impact of information and communication technologies (ICT) on our lives, and, in particular, on organizations. This starting point is interesting but it presents some problems to sociological analysis. Indeed, recent works in the field of the sociology of science and technology show total imbrication between human action and objects, artifacts, techniques which are integral parts of the social structure [Latour, 1994]. There are not technologies on one side and social agents on the other side, the first determining the actions of the seconds. In fact, there is a complex, permanent interaction between both technology and social agents. In consequence, it is necessary to take into consideration what one can call the representations, imaginary, utopias or ideologies as well as discourses linked to technological development to understand what technologies will do to us.

In this perspective, it is striking that the discourses accompanying the development of ICT – discourses telling us that we enter in an Information Society or Information Age – carry a vision of the society and individuals that joins the contemporary theories of management.

Researches by Luc Boltanski and Eve Chiappello show that a new “spirit of capitalism” has been emerging for about thirty years. This new “spirit” contains ideas of network, decentralization, demassification, permanent change even if, in the model of the two authors, the development of technologies is not fully mentioned. One can thus build an “idéal-typique” model (Max Weber) which helps us to understand the shaping of organizations not only from a technical viewpoint but also with considerations regarding the history of ideas. The management topics (flexibility, permanent change...) mentioned above are in fact the same as in the Information Society discourse in which the presence of technologies is central. One thus sees that two starting points are possible. One is centred on technologies, and the other on ideas. This draws us back to a caricatural opposition in the social sciences between materialism and culturalism. We do not want to choose between the two, but we want to show the interest of examining the world of ideas and discourses : studying closely the real impact of technologies needs taking into consideration representations because it is certain that this impact is ambivalent and depends strongly on the application context. Among the possible implications of ICT development, we worry in particular about destabilization of individuals in a society where everyone is asked to be the builder of his own life [Ehrenberg, 1999]. And if solutions to this problem exist, we think that they have better chance to stem from a political perspective rather than an ethical one.

## **2 The Information Society discourse**

As a result of an empirical research, we have noticed a recurring model in the discourse which defends the idea of an Information Society emergence. In an attempt to clarify the notion of Information Society [Berthoud, Ischy and Simioni, 2002], we scrutinized the literature devoted to this topic. We also analysed political discourses collected in official websites, at a national as well as an international level (United-States, Japan, France, United Kingdom but also European Union, OECD and so on). Finally, we had in-depth interviews with about seventy persons who are pragmatically involved in ICT matters and who come from the technoscientific, economic and political fields in Switzerland. In this qualitative and comparative study, we especially examined six important dimensions.

### **2.1 Questions of definition**

In the realm of the social sciences, the expression of Information Society is commonly (but not singularly) defined with reference to the concept of post-industrial society as described by the prominent sociologist Daniel Bell (and also others). In this perspective, the Information Society is mainly characterized by :

- a shift from the production of material goods to the production of services as the dominant economic sector
- the emergence of theoretical knowledge and science as immediately productive forces, key factors of innovation and economic growth, and prime sources of ideas for society governance
- the significant development and importance of a class of well-educated professionals (experts, scientists, researchers, etc.).

The notion of Information Society is in no way new, and it can quite easily be proved that this idea originated at least in the 1960's (in fact, it is possible to go back to the 1940's to Claude Shannon's mathematical theory of communication and Norbert Wiener's cybernetics which the first looked at the reality as information flows and mostly *only* as information flows)

[Berthoud et al, 2000]. Anyway, the contemporary convergence of audiovisual technologies, telecommunications and information processing – the alleged “digital revolution” – put the idea of Information Society into revival. Thus, using a powerful revolutionary language, many political, economic, and academic actors, as well as the mass media proclaim with conviction that a new digital Age is coming (or is already quite well established), that of the so-called Information Society which is grounded on the principle of a generalized circulation of information enabled by spreading ICT. Actually, the Information Society broadly stays an under-conceptualized notion. It is almost always presented as an unquestioned fact, or it is tautologically defined as a society where ICT, information processing and/or knowledge are present and important. Thus, among the persons we interviewed, many say that they know this expression and that it is quite an appropriate concept, but very few are able to give a clear useful definition.

## **2.2 Force and nature of the perceived social change and the role of technology in this process.**

Most of the literature and the political actors are firmly convinced that ICT generate an overall fundamental social change. They see this shift unavoidable but, paradoxically, they ask people to involve themselves strongly in the current trend. On the contrary, the people we interviewed try to be as much as possible in the middle, between the idea of total revolution and the idea of Information Society as a “fashion”. Actually, they point out some specific changes (about communication modes for example) but mention also elements of durability (biological constraints, needs for social relationships, forms of power and inequality, and so on). Moreover, they do not consider technology as *the* major factor of social change but only as one factor among others.

### 2.3 Expectations (hopes and fears) generated by the perceived transformations.

Expectations can be divided in two major streams as the following chart shows it :

Field	Optimistic view	Pessimistic view
Economics, employment, business	<ul style="list-style-type: none"> <li>▪ economic growth, productivity growth, employment growth</li> <li>▪ generalized, pure markets</li> <li>▪ jobs for disabled people</li> <li>▪ progressive disappearance of tedious work</li> <li>▪ reduction of working time</li> </ul>	<ul style="list-style-type: none"> <li>▪ too much, harmful competition</li> <li>▪ unemployment and lowering of wages for less qualified people</li> <li>▪ isolation of teleworkers</li> <li>▪ telecontrol and invasion of workers' private sphere</li> </ul>
Everyday life, information access	<ul style="list-style-type: none"> <li>▪ better education for everyone (teleteaching), sharing of knowledge</li> <li>▪ better healthcare for everyone (telemedicine)</li> <li>▪ better governance (scientific planning)</li> <li>▪ better ecological management</li> <li>▪ decentralization, dehierarchization</li> <li>▪ access equity (decreasing information costs) and equity of opportunities for everyone</li> <li>▪ creation of true communities really sharing same interests</li> <li>▪ self-fulfillment</li> </ul>	<ul style="list-style-type: none"> <li>▪ too much dependence on technical devices in case of major collapse</li> <li>▪ "dehumanization" of social relationships</li> <li>▪ "commodification" of information access and of knowledge</li> <li>▪ deepening of economical and social inequities</li> <li>▪ information overload</li> <li>▪ information falsification, harmful filtering of information</li> <li>▪ privacy violation</li> </ul>
Global implications	<ul style="list-style-type: none"> <li>▪ democratization, transparency</li> <li>▪ better international solidarity</li> <li>▪ stimulation of cultural exchanges, protection of indigenous cultures</li> <li>▪ collective intelligence</li> </ul>	<ul style="list-style-type: none"> <li>▪ control society</li> <li>▪ populism</li> <li>▪ cultural uniformization</li> </ul>

The greatest part of the literature and official discourses are very optimistic. However, it is also possible to find a critical literature which presents a more or less pessimistic view. Of course, most apologetic discourses take into account some of the problems underlined by the pessimistic view. But, usually, these problems are seen as temporary or as the result of an incomplete involvement in the Information Society. In contrast, the people we interviewed

rejected symmetrically great hopes (sharing of knowledge ; generalized, pure market) and strong fears (control society). Thus, only very pragmatic prospects stay : improvement of business and commercial transactions thanks to e-commerce, amelioration of administrative interactions through e-government. In addition, our interviewees think that population in general has no particular expectations related to information technology except for making money or following up with innovation in order not to be left out. For these ordinary people, the Information Society would be more a fact of obligation than a fact of positive agreement or adhesion.

#### **2.4 Role of the State and the Market**

On this topic, the situation is quite ambiguous. Many scholars announce the uselessness and disappearance of borders and of the Nation-State because of international information flows and mutual adjustments (or auto-regulation). Moreover, political speeches themselves put a strong emphasis on the dominance of the private sector which must possess the technological infrastructure as well as starts and runs the Information Society. However, official discourses keep giving to the State some rather key prerogatives, such as : setting and enforcing the rules for economic competition, stimulating private investments in the information technology sector, introducing and developing information technology in education, healthcare and administration. Similarly, the people we interviewed attributed to the State the significant tasks of regulating and providing for education. Thus, our interviewees do not believe in the disappearance of the State, even though reorganization will occur at both local and international levels. Anyway, the people we interviewed put a strong emphasis on the intensified situation of competition between States and on the alleged lack of reaction of the political class to face this challenge. Thus, implicitly, they mention an increasing power of the market rules.

#### **2.5 Nature of the social bond in the supposed new emerging society**

A great part of the literature and many official actors predict new and better means of self-fulfillment for individuals and, moreover, a dramatic democratization of political and social life through permanent communication. On the contrary, the people we interviewed foresee neither real self-fulfillment nor real democratization. Because, in their opinion, self-fulfillment and democracy are not *only* a matter of technology, and some isolated bad effects may occur. By the way, our interviewees do not think either that the extensive use of information technology will lead to dehumanization of social relationships or to an overall harmful cultural uniformization.

#### **2.6 Questions related to information and knowledge**

Most scholarly and official literature tends to consider information and knowledge as being synonymous. In this context, information and knowledge are seen first of all as economic resources and saleable commodities. When questioned specifically on the issue, the people we interviewed do not exactly agree and, thus, do not think that more information means more knowledge. Actually, they mention four key issues:

- the problem of information overload
- the problem of reliability of information which is very acute in a time when, for example, edition gate-keepers are disappearing
- the necessity of a common language, of common values and goals between information senders and message receivers
- the necessity of desire, hard work and formation in order to transform information into knowledge.

In addition to this concept of knowledge as high-order information, our interviewees do not think that information networks will give birth to a kind of “collective intelligence” or “planetary brain”, except in very few specific situations such as certain scientific researches. In their opinion, no qualitative jump in human intelligence will occur, mainly because of selfish economic interests which usually ask for knowledge being kept secret.

To summarize, techno-leaders, ICT businessmen and political actors – in literature or in official announcements – view the Information Society as a true revolutionary civilization shift and as a real, unavoidable, step forward in the evolution of human societies. They do not see any major problem or any problem that cannot get a strict technical answer. On the contrary, despite many ambiguous statements, the persons pragmatically involved in ICT questions do not consider – when interviewed face to face – the Information Society as a major new form of social organization and as a new set of basic values. In this context, the “Swiss elite” does not see any major “metaphysic” benefit nor any major global problem in present transformations. However, the same “Swiss elite” also considers the present transformations as unavoidable ! This is one of the views that our interviewees share with the dominant discourse from techno-leaders, IT businessmen and official agencies. The presentation of the visions carried by the persons we met and of the discrepancy between these visions and the dominant Information Society discourse shows anyway how much the latter sounds rhetorical and thus must seriously be assessed.

As preliminary conclusion, we can notice that representations of and around the Information Society – which by definition give the utmost importance to ICT – mostly display a rather strict technological determinism : history, ideas, values, particular interests, social relationships (of power, etc.) are seldom taken into consideration in the process of social change. In doing so, the dominant Information Society discourse fails to put in perspective the so-called “Information Revolution”. It fails to understand the contemporary transformations which true nature represents in fact a mere continuation of industrial capitalism and “social Taylorism” : rational management of production, consumption, of the entire society, directed to the accumulation of profit [Webster and Robins, 1989]. This explains why the dominant Information Society discourse appears to be highly compatible with capitalism and its supposed present needs (pragmatic, business prospects ; neoliberal claim for disqualification of the State and social regulation by the Market ; pre-eminence of economic competition ; “commodification” of information, knowledge, education, etc.). In this sense, more than an utopia (suggestion of alternative ways of thinking and acting), the dominant Information Society discourse functions as an ideology : promotion of a positive global vision which, in fact, maintains or accentuates the current state of social relationships, balance of power, inequalities, etc.

## **2.7 Incertitude and instability**

Admittedly, the base of the Information Society discourse is elementary and indicates that it exists a convergence between telecommunications and computers and that, consequently, we live a time of very significant changes. However, beyond this simple basic report, one can

locate a recurring model of social or business organization which is based on the need of total mobility, flexibility and of decentralisation made necessary by a process of permanent change. This model do not entirely join an industrial or a market logic but subtly combines them to give birth to a new ideological configuration making it possible to motivate the actors, to reassure them and justify the changes. Speeches defending the idea that the Information Society will be beneficial for all are extremely numerous. Despite this fact, we have seen that a certain number of discourses present a critical vision. However, the pessimistic view usually displays as much strict technological determinism as the optimistic one. Thus, while trying overcoming this difficulty and avoiding the lack of perspective on social relationships, we would like now to analyse a problem that seems particularly significant although it is seldom widely explored : the problem of incertitude or instability.

### **3 Bodies and malleability in science-fiction and utopia**

#### **3.1 Science-fiction**

We will see that the dominant Information Society discourse suggests a vision of the world that is very close to what we can read in the management discourse where flexibility, mobility, longlife learning or networks are primordial issues. However, before dealing with this question, it seems very interesting to us to make a detour by science-fiction, in particular the cyberpunk literature which worries about this issue in its own way. This is not a negligible element because, admittedly, the science-fiction literature partly reveals the present fears and can thus reveal the type of resistances, legitimate or not, that may fight against the changes. And precisely, what is often shown is a world in which individuals are malleable, their bodies being transformed as far as to disappear in cyberspace.

The cyberpunk current finds its origins in the 1980's. Its best known authors are William Gibson, author of the famous "Neuromancer", Walter Jon Williams or Neil Stephenson. In their novels, usually depicting a more or less near future, one observes multiple transformations of the bodies by biotechnologies (genetics) or electronics. One discovers for example the possibility of implanting movie cameras in place of the eyes or of implanting high-tech units allowing to change personality or to know a foreign language without having learned it. Of course, aesthetic surgery is all the rage, and the frontier between cure or repair and "improvement" is widely overpassed. Another basic element is the cyberspace, an idea popularized by Gibson himself (and often resumed in more official discourses), that allows individuals, in a sense abandoning their body, to travel through computer networks on the whole planet. An extremely important point is that these novels place all these developments into a special political context. In a world where the State is replaced by the power of multinational corporations, individuals are manipulated, and the body transformations they live are often dictated by the labour market. Finally, one notes that cyberspace is a place in which one loses very easily all indicators, all ties with reality. Some characters downright lose their identity which, in a way, is distributed in the cyberspace, between multiple servers. We know that anthropology and philosophy have showed that the body is the support of identity. It is the body that set individuals in a territory, a history and in social relationships. The disappearance of the body leads to a kind of exit of the world, where reality and illusion are indistinguishable. The science-fiction literature uses here metaphors, but more seriously it indicates us which are the fears of our contemporaries. Permanently transforming the bodies in the world depicted by the cyberpunk literature corresponds to transforming in our own world the individuals so that they are continuously adapted to the technological and organizational changes. In both cases, it is taking the risk of major identitary disorders.

### **3.2 “Utopia digitalis”**

These concerns are not absurd fictional dreams and, according to us, deserve to be taken into account seriously. Indeed, the body transformations realized in science-fiction novels we studied are not so different from utopias, projects, or some realizations, of today laboratories or scientists. Again, what is very interesting for us is that the link done in science-fiction between transformations of the body, malleability of human beings and flexibility or mobility in the domain of labour does not exist only in “fancy” literature. A striking example is given in a magazine edited by one of the two biggest Swiss banks : the Swiss Credit. In an issue of this magazine, an article by the economist and futurologist Karin Frick strikes us. The title is the following : “Utopia digitalis”. Some extracts are particularly interesting : “the computer as universal machine more and more frees us from material, geographical or institutional constraints, and it will even finish by liberating us from the many restrictions imposed by a fragile organism necessitating intensive care. Many previously well established structures will disappear. But nobody knows yet which life and society models will be successful. An era of experiences and surprises is opening in front of us. A cybergeneration is emerging which life will become a sort of computer game [...] our body – equipped with intelligent clothes and bioelectronic implants – will be one element of a network that will furnish us all the real ingredients and potential necessary to a made-to-measure life” [Frick, 1997, p. 4-5, our traduction]. This vision is particularly striking if one considers that it appears very seriously in the magazine of one of the two biggest Swiss banks. The author adds : in fact, “new realities require new men. Principally in the West of the United States, some people are developing the vision of a new life form, of a new type of ‘man-machine’ or of ‘cyborg’. Fusion of cybernetics and organism, the cyborg is based on the idea that we will step by step merge with technique. In other words, we will more and more possess artificial organs or prosthesis : artificial arms, legs, hearts and eyes, cerebral implants, and so on. The ultimate logical consequence of this process would be that we become a brain put in a completely artificial organism. Researchers in robotics of the Carnegie Mellon University in Pittsburgh even dream to copy on a numerical support the whole personality of a human being, with its thoughts and its emotions, and thus to make it immortal while freeing it forever from an imperfect body” [Frick, 1997, p. 6, our traduction]. Therefore, we are said that if time, distance and the body were only constraints, we will finally reach total liberation : our performances, our speed will have no limits anymore. The fact that this kind of ideas precede, in this magazine, an article such as “The employee is dead – long life to the entrepreneur” is rather significant. Through the cyborg, it is the flexible, efficient, competitive, disciplined worker that is celebrated. This corresponds to the present dominant model of the worker. In a complex and ever changing environment, where everything must be done more and more quickly, individuals have to react just-in-time, to be able to adapt to any situation, to be more flexible than ever, more mobile, more dynamic, motivated, responsible. It is therefore legitimate for the science-fiction to address a political critic of the cyborg, in the sense the cyborg represents a metaphor of the modern worker in an Information Society.

## **4 Organizations and new representations of the self**

### **4.1 Management and Information Society**

As said before, works of Luc Boltanski and Eve Chiapello on the management discourse in the 1990’s as well as our own work on Information Society show that the Information Society is part of a specific ideological configuration that does not depend on technologies. The detour we made by science-fiction and utopia is particularly relevant when one studies the

Information Society idea, as it is defended by governments, international organizations or experts of all kinds. Indeed, Boltanski and Chiapello, relying on a complex theoretical model, say that a new spirit of capitalism, in the sense of Max Weber [1964], is nowadays dominating. Their claim is grounded on a comprehensive management literature from which they extracted characteristic elements. The texts of management in the 1990's try to motivate all the employees as well, and not only the executives. In doing so, these texts criticize bureaucracy, reject pyramid-shaped hierarchies and planning, insist on competition, permanent change, defend flexible organization, the idea of adaptability. The typical corporation is thin, network-structured, without place or time unity, and is organised in various auto-regulating teams and in specific projects. The models of the employer or traditional executive are totally losing their value : there are only leaders, coaches or managers, able to move themselves in uncertainty or complexity, who coordinate, and create enthusiasm. Therefore, one cannot speak of stability or of structure but rather of creative intuition, innovation and mobility. Workers have to auto-motivate, responsabilize themselves, mobilize themselves ; they must learn lifelong, they must be like chameleons. One of the essential competences is to know where to look for information and how to select it. In fact, information becomes a primary source of productivity and profit. Justification models help the persons involved in those new organizations to reply to the critics that could be addressed to this new spirit. In fact, while passing from a project to another, individuals acquire employability as they increase their own network, their capacity to create links in a networked world. At another level, standardisation and forms of inauthenticity or disenchantment linked to mass production and mass consumption are said to be eliminated by a flexible production, essentially directed to the fulfillment of individual desires. The authoritarian "petits chefs" disappear and personal qualities, and not only specific skills, are seen as highly valuable in the field of work. One can already imagine which type of problems are generated by this vision of the world.

But it is now important to show that the Information Society discourse bases itself on a very same imaginary. Our own work allows us to quickly summarize the general principles found in the great majority of texts devoted to the idea of Information Society. Authors stigmatize a heavy bureaucracy and a hierarchization that are not adapted anymore to current rapid transformations and to individual aspirations. Words like networks, horizontality or constellation indicate the refusal of a pyramid-shaped logic. "New technologies" will thus allow the emergence of a participative democracy based, for example, on e-voting and continuous referendum. The local or community level of decision has to be privileged, reinforced. For many, one will also see the emergence of a new individual, who is responsible, creative and having a sense of initiative. The rigid planning and the time of the masses are finished ; we will return in an era of projects, adaptability, mobility, fluidity and flexibility. The development of a corporate spirit and of "new technologies" would therefore allow individuals to reach self-fulfillment and to deploy their personal qualities. Another important point consists in saying that apprenticeship or formation will not stop at the school's door. The lifelong learning, thanks to the diminishing of working time, will be the standard in this world where we will all become, as Marshall McLuhan said, "information gatherers" [McLuhan, 1968].

#### **4.2 Destabilization**

The work of Alain Ehrenberg also shows that new representations of the individuals appear in the world of sport, labour or even vacation (like in the french Club Med, for example) – flexibility, competition, performance, self-fulfillment. They are linked, in very subtle ways, to this pathology of action that is depression. Thus, it is not astonishing that the depression can

be described as the disease of the beginning of present millennium in the sense it is the negative consequence of the new identities based on the obligation to act. Indeed, in a world in constant change, which requires a continual adaptation and a total flexibility, individuals can be confronted not only with material resources problems but also with identity and psychological problems.

Thus, we easily understand the links that can be made with the dominant Information Society discourse as presented before. For Ehrenberg, this new model of the individual is transversal because it is present in many different domains such as sport or corporations. Like Boltanski and Chiapello, Ehrenberg does not really tackle the ICT question. Therefore, it is once again necessary to insist on the idea that studying representations as factors of social change, particularly at the level of the labour organization, is very important. Individuals are constrained not only by technologies but also by dominant values and norms.

The question of destabilization is approached differently by other authors. We would like to point out Kenneth Gergen's work concerning the "saturated self". Gergen estimates that today "there is a *populating of the self*, reflecting the infusion of partial identities through social saturation. And there is the onset of a *multiphrenic* condition, which one begins to experience the vertigo of unlimited multiplicity" [Gergen, 1991, p. 49]. Gergen may attach too much importance to the development of technologies itself as an essential factor of change. Anyway, his approach is very complementary to Ehrenberg or Boltanski and Chiapello's one because it shows well how a destabilization of the individuals happens. In many ways, these different viewpoints are necessary and useful, and allow us to say that the Information Society discourse is not an utopia worth to be realised but a dangerous process for individuals when harmful ideologies direct its development.

## 5 Conclusion

Is it now necessary to find solutions to these problems? We are not convinced that ethics, as a discipline aiming to setting up norms in a rational way, is in a position to solve the problems linked to the ICT development. These developments are part of power or material and ideas struggles that place them directly in the field of social relationships and politics. Relying only to experts groups, that one hopes as neutral as possible, to edict rules or recommendations from ethical considerations seems neither desirable nor possible to us. Actually, such neutral experts simply do not exist and ethics cannot really solve specific problems without any political considerations. Therefore, we would like to defend here a political approach in order to valuably grasp ICT issues. What now strikes us in the domain of "new technologies" is that the public debate almost never occurs. A countless number of decisions are taken every day on ICT topics without any true fundamental discussion takes place. Democratic debate is regularly avoided. There are many reasons why individuals have difficulties to represent to themselves the impacts of these technologies on daily life. One of these reasons is that there is no example of any major health problem that one could ascribe directly to computer networks developments and that would have impacts on individual bodies. We must also underline the role played by the dominant Information Society discourse which, juggling subtly between fatalistic speeches (ICT development is unavoidable) and motivating speeches (everyone must take its responsibilities), aims at eluding the critic. Indeed, are we really ready to take the risk to be later accused to have sent young people register as unemployed because we refused, for example, to install computers in their school-rooms when they were children? Anyway, an interesting step could be made at the next worldwide Summit on the Information Society which will be organized by UNO in Geneva in 2003. However, one can legitimately fear that the debate will only focus on the means to successfully implement ICT in order the

Third World or developing countries could recover their infrastructure lateness and alleviate the digital divide. But is the lack of Internet connections the only true problem ? Providing that it is thus necessary to defend a political position rather than an ethical one, and then to draw the debate out of the scientific or philosophical field, one must inevitably return to classical political questions that, for example, have to be resolved in the framework of the European construction. In this context, two questions seem particularly important. First, which democratic institutions do we need and want ? Who must decide and where ? This question is a basic one and of fundamental importance. In fact, if, in one hand, it does not seem possible for us to edict norms by the way of ethics, on the other hand, it seems necessary to start a debate as wide as possible on what we want to do with ICT. Only a completely democratic arena, a totally open public sphere [Habermas, 1978], seems suitable so that everyone's aspirations can be heard and taken into consideration. A democratization of corporations seems also an important goal to achieve. Secondly, which balance should exist between State actions and market openings ? Is it necessary to follow again and again the liberalization pass defended by the great part of European governments and by WTO ? Is it necessary to go towards a deregulation of labour or, in the opposite, is it necessary to reinforce worker's rights ? In our opinion, it is only in answering to those questions that it is possible to begin a true debate on ICT development. To talk about ICT impacts has a sense only in a wider vision that takes into account ideas and interests struggles. Suggesting solutions to the problems that we have raised cannot therefore bypass the disclosure of our political convictions. This is an important point, but it goes beyond the framework of this article.

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