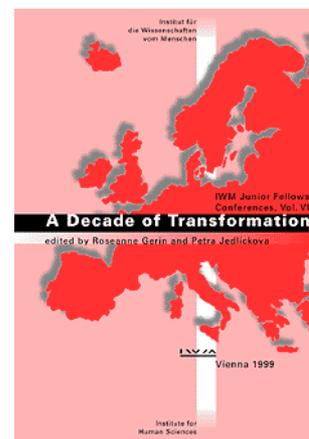


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From Monasteries to the Informational City, from Manuscripts to the New Media

Petra Jedlicková

We inhabit a world that is informational. Our lives are mosaics of information. Most jobs today deal with producing, transmitting, receiving, designing or archiving information. We become producers, transmitters, consumers and also buyers and sellers of information. Entertainment, body image, lifestyle, tourism, R&D or public affairs are products of the hyper-media information environment we create and inhabit. We live in the multimedia world where we endlessly and automatically interact with the media messages received from multi-channels. In urban societies media consumption is the second largest category of activity after work (according to estimates of the actual active consumption of media; in the U.S. adults watch TV, listen to the radio and read between 7.2 and 8.12 hours per day), and the predominant activity at home where media consumption is mixed with the performance of home activities (TV and radio are almost constantly turned on in the background and are physically located in the living areas of households).¹ *We live in the*

¹ Castells (1996: 333).

*media and by the media.*² We communicate with our cars, telephones, and even doors which function with digitalized signals. *Binary code is our international language*³ when we consider that not only newly created texts, videos, films, songs and all documents on the electronic networks are in digital form, but also materials formerly fixed on traditional mediums (paper, magnetic tape, LP) are now being digitalized. We are witnessing the revolution from analogue to digital. (Mass) Customization becomes a leading force which redesigns the service sector (i.e., through the elimination of intermediaries, the use of communication channels as storages, the merging of production with consumption), educational system, labor market and the state-citizen relationship. This widespread use of information and communication technology (ICT) and its penetration of the private and public spheres leads philosophers, social scientists, politicians and economists to call our society the *information society* (IS). The feminist perspective cannot be eliminated from the critical approaches to changes in the social and political structures, education and employment opportunities, gaps between ICT potentials and their embryonic development, and information sicknesses - information poverty and communication deviation (e.g., communication as a goal in itself, obsession with the ICT, addiction) as backlashes of the development of the IS.

Before Johannes Guttenberg's invention in 1448 publications were organized, controlled, produced and stored mainly by the church. Therefore, only individuals with relevant social contacts and elites connected to the church had access to knowledge. The invention of movable type made printed materials much more economically viable compared to the hand-production of manuscripts in monasteries. The explosion in the printing industry that followed the invention of the printing press led to widespread literacy and changes in school systems (mostly based on general access to knowledge). This produced inventors and uniformly educated mass workers for the subsequent "industrial age."

Thanks to the industrial era technology became too privileged in our thinking of societies, thus we now consider the end of millennium as the Information Age (as we had the Stone Age, the Steam Age...). But information is not technology. Hence, theories of the Information society started with descriptions of fundamental changes in the production of knowledge and goods (from mass towards customized production), in the sectors of national economies, in changes in occupations and labor markets, in the globalized financial world and in trends towards the knowl-

² *Ibid.* p. 334.

³ Wyatt (1995: 23).

edge-based economy. The story, however, is not just about the technologies. Such fundamental changes affect the structure of the society and social stratification, equality and class division, and the system of knowledge production and knowledge sharing (education) and state-citizen relations (i.e., the idea of the nation-state challenged by the process of globalization, e-democracy, the transparency of the public administration and the changing role of public-information services). The transformation of the society to the information society, therefore, must be analyzed as a series of complex changes in almost all of our private and public activities while considering future challenges and threads. In this paper I will describe the information society based on the theory of the informational city as a complex network of interconnected layers which focus on the role of the (globalized) media as an important actor in fostering new democracies. The challenges of the new media go hand-in-hand with the changing character of government, public administration and public-information providers (libraries, school systems and information brokers). A significant part of my study will be dedicated to the construction of identity and living in virtual space(s), which also introduces new dilemmas.

Informational City

LAYER 1: electric signals (energy of the IS, true/false logic)

LAYER 2: hubs and command centers (government, public administration, libraries and information centers)

LAYER 3: content (media, information as a symbolic fabric of our life)

LAYER 4: inhabitants (elite vs. crowd, information poor, communication deviants)

The design of our environment is influenced by information and communication needs (architecture and lifestyle). Hence, we inhabit virtual communication networks. Within certain physical locations (cities) we actually inhabit only places accessible by relevant communication extensions. However, we might not be able to visit some spaces in our own city just because we cannot reach them. Take UNO City in Vienna for example. Without a car or the U-bahn, one simply cannot even go to the *city in the city*! Without electronic IDs, visitors cannot park their cars or open any doors. Security systems, electronic networks and complicated accessibility carefully protect the informational city from unwelcome visitors. Generally speaking, the ICT can be used for the separation of lawless forces.⁴ It seems that the

⁴ Webster (1995: 52-100).

quality of life in the informational city⁵ depends on our mobility and orientation (i.e., access to the ICT equipment and the relevant knowledge and skills to use it). A significant part of such abilities includes language and communication skills. The development of a networked society challenges the concept of the nation-state (and this is why national languages paradoxically became stronger).⁶ The penetration of the society by ICT influences languages to the extent that we can see similarities to "industrial languages" in which, for instance, the brand names of products are used for the general products that they substitute (e.g., Kleenex, Lux, Alobal). New social stratification, gaps between the information rich and information poor, and information inequality can be seen in the development of class and elitist languages (computer geeks, information professionals, European Union technocrats), the introduction of new expressions which have abstract or shifted meanings (especially with "glocal" culture - see section on mass media) and the reflection of sexism in cyberspace.

LAYER 1: True/False Logic

In computer-mediated communication we seem to be treated equally as identification numbers, clients, login keepers and database users. If not required, machines do not distinguish between male/female, white/black or young/old. This primitive idea actually led many thinkers to consider cyberspace as a democratic space where people could be self-actualized regardless of their sex, creed, race, physical appearance or handicaps. If we disregard the strong reappearance of the various types of sexism in cyberspace (which will be discussed later in this paper), the primitive true/false logic makes discrimination possible. The so-called user-friendly interfaces *a la* Microsoft, for instance, use default decision pre-sets. While some such default options and pre-packaged settings can prevent us from dangerous actions (such as

⁵ The expression "informational city" comes from the works of Manuel Castells. The tendency to capture fantasies about cyberspace as "cities" is not present only in serious theories about the information society. You probably can remember the popular computer game SimCity. Based on the simulated development of a city, a player had to coordinate the building of infrastructures and housing. His/her success was measured by the efficiency of investments and by outcomes from "public polls" which, in fact, represented the flexibility and rationality of communication flows. The modern versions of such virtual cities often can be found on the Internet. A recent project in the Czech Republic, E-City, became quickly popular as a simulated city constructed from virtual shops, companies and services, and is virtually inhabited by Internet users.

⁶ Braidotti (1994: 12).

erasing files or changing system settings), in many cases they actually manipulate us through our lack of knowledge of them and control over them (e.g., commercial e-mails automatically sent to users and update reminders). Especially important are settings concerning the provision of meta-data (see Layer 3). In the environment where decisions are made for us and users are refused to know precisely what they are about to do in the next step, it seems that women are more likely to have more difficulties. Surveys on female use of ICT show that women tend to work with ICT through fixed sequences of steps and that they are anxious to "set on the route without knowing the trace."⁷

LAYER 2: Hubs and Command Centers

The embryonic development of ICT potential is plausibly created by the difference between power structures in the society and decision-making processes within the computer networks. The ICT "nature" is a decentralized network of floating connections between hubs and nodes, which are flexible and universal in terms of command flows. The growing problem of traffic (communication) jams in the modern cities shows the contradiction between the ICT as a communication platform of the IS and the organization of the information and command flows within the human communication structures. While net routers and servers deal with incoming and out-going commands flexibly, regardless of their order and origin (i.e., crossing time and space barriers), humans use fixed routes in decision-making structures. While ICT is flexible in terms of command and information flows, human structures are fixed in terms of making decisions (management, government, public administration). Nation-state-oriented legislative and restrictive activities and the transformation of managerial, governmental and other power structures face problems based on this conflict. As examples of Don Quijotes in the IS, we can examine the Chinese government's attempts to control the Internet, the EU's Decentralized Implementation System as a hierarchy of decentralization, the Czech Republic's national project of State Information System and Microsoft's user-unfriendly interface based on true/false, pre-packaged, unequal communication.

How does the spread of electronic publishing affect the information industry - the information infrastructure of the society which has to professionally deal with information provision, awareness and policy, namely, libraries, information brokers, public administrations and educational systems?

⁷ Spender (1995).

1. Libraries and Information Brokers

The inability and unwillingness to pay for information services and products hampered the development of the IS in the Czech Republic. While the growth of western libraries was supported by upper-class philanthropy and later by state funds aimed at enforcing the information infrastructure during the Cold War, libraries on the other side of the Iron Curtain were sponsored for almost the same reasons. The Czechoslovak state-supported development of the library and information-services network was very generous in financing the country's plans for a "scientific-technical revolution."

After the end of the Cold War, both sides encountered the similar problems of reductions in their resources and changes in library professions. Library and information-center networks had rationally calculated and vivid structures during the years of communism. Almost each large company, health-care institution and school and all academic institutions had their own libraries. Large industries had a three-level hierarchy in their in-house libraries. In the command economy, the demand for information was rather weak. Therefore, the system was inefficient, wasteful (e.g., personal profiles were professionally prepared on a regular basis, printed and then discarded without being read), and focused mostly on the services for the network itself thanks to the communist policy of full-employment. In addition, the cooperation within this network was mostly one-way – between the umbrella center and the subordinated library.

The industrial model of the library is a large (in quantitative terms) and general collection of materials available mostly in paper form. Services are mass-oriented and provided to a particular physically defined region. The typical representative of such logic is N/national (or C/city) L/library. Hence, the collapse of strong central power and support puts the library system in a difficult position. The network collapsed almost totally, while only fragments remained thanks to supportive individuals or local circumstances. While the libraries whose existence was based on Communist Party activities were liquidated, the rest had to reformulate their acquisition policies. Therefore, tons of books were discarded, and others had to be acquired. This overwhelming task was placed on librarians who had to deal with limited financial resources.

The financial situation and heritage from the last regime are not the only factors that make the current situation in the Czech library and information systems difficult. The fundamental concept of providing free library services at the public's expense has led citizens to consider information and information services as free. Previously, information had been perceived as a public resource which ought to be

free and be shared, while in the IS it is regarded as a tradable commodity.⁸ Librarians (mostly women) are low paid and together with information specialists are slow to be recognized as respected experts. Private and state companies and even academic institutions are reluctant to pay for information services because information awareness is marginal or missing in their corporate strategies.

The previous tradition in library services was focused on the homogenous mass of readers, while in the IS library services are customized. It is no longer possible to maintain structure where "information is equally available to everybody" because this false slogan actually makes information unavailable for some. In order to have "equal access," library services were free or very inexpensive so that most routine, automatic and basic services always were available. Consequently, those who had special requirements and were willing to pay for extra services were excluded from the system. Inadequate prices for library services (usually very low) were understood as "symbolic prices" and actually undermined the status of the library profession and the expertise of its practitioners. Thus, the transformation of the library network should be focused on the diversification of its customers and the changing relationship between the library and its social, economic and political environment.

On the other hand, initiatives taken by libraries are very rare. Old-structured management, lack of experts, and almost non-existent public relations and fundraising activities make the transformation of the library and information-services sector even slower. Libraries should become an integral part of the information environment of their clients, depending on the "radius" of their activity. Libraries on the regional level, for instance, should integrate a wider range of activities including cultural events, information support for local small and medium-sized enterprises (SMEs) and non-governmental organizations (NGOs), the administration of regional information servers, and political activities (interconnection with public administration). Libraries and information centers (ICs) should become sustainable, flexible, open institutions, which develop mutually benefiting partnerships with businesses and political bodies. Librarians should be respected personalities, present in cultural, social and political life on the municipality level (currently those who participate are attorneys, doctors and entrepreneurs). Academic libraries should become an integral part of the institute or school they serve, a part of academic life and a meeting and conference place. With only a few exceptions, the majority of Czech libraries are hardly accessible institutions separated from their

⁸ On the other hand, charging for services (not only in libraries but, as Webster argues, also in museums and galleries) will favor business, corporate and wealthy users.

clientele where librarians passively wait for users. They are directed by technocrats with user-unfriendly catalogues and retrieval systems and are unsustainable since they depend on one financial resource.

It is crucial to view the transformation of the library and information-services systems as an important element in the development of the IS. While almost all the same issues apply to the restructuring of the public administration, the library network is separated from the transformation processes within the public administration sector. Although it seems to be effective to interconnect library and information activities with corresponding public administration institutions, such cases (if any) we can see only on the municipal level.⁹

2. *Public Administration*

Public administration (PA) faces a three-way conflict between the state power (empowered by the communist era), a demand for transparency (which also includes the possibility of controlling decisions made by the state institutions) and a need for the information support required by the newly forming information society. Generally, there is a significant gap between what the public sphere could have in terms of available information and ICT (human and technical resources) and what is actually present (cultural production, cyber-creativity, practical use of simulation in medicine and architecture, poor games and entertainment). Rosi Braidotti concludes, "There is a credibility gap between promises of Virtual Reality and cyberspace and the quality of what it delivers... Unless your culture can take up the challenge [more imagination and gender equality] and invent suitably new forms of expression, this technology is useless."¹⁰ Such gaps between IS potentials and effectiveness and conflicts between traditional provisions of information and demands for active public information support, and the conflict of ICT versus human decision-making principles can be perfectly analyzed in PAs in transition.

⁹ In her report *Internet and public libraries as information centres in cities and municipalities*, Ivana Štrossová shows examples of regional information provided by libraries. But her report doesn't say anything about the structure, periodicity of actualization, quality or relevance of such information. SMEs are missing, as well as official links to the political structures (exchange and provision of information, agreements) and acquisition policies in terms of the provision of information from the public administration. Paradoxically, while libraries on municipal level are the most active in this respect, they are much worse equipped by the ICT than the libraries from the "top of the hierarchy."

¹⁰ Braidotti (1996: 11).

The transparency of state institutions depends on individuals in management rather than on the general tendency to make as much information as possible publicly available. This tendency is deeply rooted in the long tradition of discreet public administration.¹¹ The legislative tool (*Listina základních práv a svobod, cl. 17*) was massively ignored by state institutions, therefore a Freedom of Information Act (*Zákon o svobodě informací*) was worked out and will be introduced at the beginning of the year 2000. The reluctance (not inability) of the PA to develop a provision of information for citizens becomes even more visible when compared to its technical possibilities.

The PA is well equipped by ICT. While 95% of PAs have Internet connections, about 85% of them are connected via leased lines (compared to 43% of businesses) and nine-tenths have their own WWW servers (compared to one-fifth of industries),¹² when all ministries have leased lines and own their WWW servers.¹³ The problem of the transformation of the PA is not based on how much it is equipped by the ICT, but how effectively the ICT is used in order to better serve citizens. *An Analysis of Public Administration in the Czech Republic* conducted by the National Training Fund provides a list of software applications used within the PAs in the country.¹⁴ In fact, the majority of these systems is focused on internal communication and information needs rather than on the exchange of information within the PA network and public services (external communication). The investment in ICT was not coordinated.¹⁵ Therefore, information systems within the PA are not compatible in some cases, leading to the low efficiency of the PA and its use of ICT. Together with other negative impacts of the deviant uses of ICT, a well-equipped PA could become a monster which could swallow a lot of investments (ICT and human resources), absorb the majority of information services¹⁶ for its own use and use its information base as a powerful tool to practice discrimination against or blackmail its clients. When using information systems, especially large ones, we

¹¹ Analýza (1998), Zantovský, Kuzílek (1999).

¹² A survey on information transparency of the businesses in the Central Europe conducted by Pricewaterhouse Coopers and published on the Internet on May 12, 1999 shows that 70% of the Czech Top 150, 73% of the Czech Top 100 and 90% of the Czech Top 10 companies have their own WWW presentations.

¹³ Remr (1999).

¹⁴ Analýza (1998: 39).

¹⁵ *Ibid.* p. 17.

¹⁶ A too well-informed PA on one side and uninformed citizens on the other is basically a totalitarian model of governing the society.

have to count mistakes – both human errors and system errors. Therefore, it is very dangerous to perceive such systems as error-free and superior to human decisions since mainly clients, not administrators, are harmed by mistakes.¹⁷ Thus, we can conclude that the ICT in strong bureaucratic structures could be used against citizens as a tool to protect officers from information requirements, to eliminate citizens' rights and to harass potential users.

The State Information System project aimed to create a large information base without any necessary retraining of human resources. Human-resource development within the PA is absolutely crucial for its successful functioning in the IS. Relevant information materials and simulations used within the PA also can be used for training materials and programs in schools (see the California project as an example) in order to train citizens for better communication with the PA. Such training also should include instruction on information ethics and information and computer literacy since data security, privacy issues, and ethical work with information becomes crucial in the IS. If we consider the power of information and synergy within the information systems (databases) in the hands of technocrats and officers with low information culture (literacy),¹⁸ then the idea of a centralized (state) information system becomes even more frightful.

The PA is influenced by the transformation from a mass, homogenous provision of information and services towards customized, client-oriented services. "A citizen, who was originally mostly given orders and prohibitions, is becoming a partner, a user, a client."¹⁹ The constant monitoring and research of the development of the information society, Internet usage, the stratification of Internet users and the transformation of the PA are missing (as needed data are also not included in official *Statistical Yearbook of the CR*).

¹⁷ For instance, instead of the simple elimination of the mistake, the client has to prove that the system is wrong (*presumption of innocence* for computers?). In more serious cases clients can be punished for computer errors. Even more dangerous is the possibility of misusing such an error against PA clients when an officer can blame the system for his/her own mistakes, inadequacy or inability.

¹⁸ The significant fact that the majority of cases (some say about 80%) of data violation and misuse of information coming from inside the affected company is well known.

¹⁹ *Ibid.* p. 24 (cit. according to official English translation).

Development and maintenance of transparency of the public administration in EU countries and the U.S.A.

<http://Help.gv.at> project of the Ministry of finance in the Austria (guide for citizens to get better oriented and receive information from the public administration)

EQUAL project EU

THOMAS information system of the U.S. Congress administrated by the Library of Congress

<http://www.calvoter.org> on-line guide for California voters, part of which has been used as training material for schools

<http://www.axismundi.org/cybercrate> Cybercrate, Belgium

<http://www.mehr-demokratie.de> "More Democracy," BRD

<http://freenet.msp.mn.us/govt/e-democracy> Electronic democracy in Minnesota

<http://www.democracy.org.uk> Great Britain

<http://www.globenet.org/vecam> France

<http://www.xs4all.nl/~roesderz/english> Netherlands

<http://www.ltdalarna.se> Sweden

<http://www.politics.ch> Switzerland

Czech Republic

<http://www.siscr.cz> State Administration

<http://www.munet.cz> municipalities

<http://www.obce.cz> cities and municipalities on-line

3. Education and Work in the IS

Although it is obvious that ICT is a platform and a necessary precondition for the development of the IS, the opposite does not hold true. Digitalized communication within the state and businesses, advanced telecommunication services and management equipped by the ICT does not automatically create an information society. Surveys on use of ICT within top management show that more sophisticated ICT does not enhance managerial work and decision-making processes in general. Quantity simply cannot create quality.

Investments in ICT and human-resource development (training for information and computer literacy) have one thing in common: they are slow to return and take about two decades to start appearing. Hence, in the time of transition, it is

extremely hard for SMEs in the Czech Republic to include such investments in their corporate strategies. When human-resource development for the IS is missing or is marginal, and the Czech economy is under-equipped by the necessary ICT, the gap between the Czech labor force and the efficiency of advanced economies will be widened.

The quality of our lives in the IS, flexibility in the labor market, the ability to succeed as entrepreneur and the quality of (re)training will not be improved by programs focused only on technical skills or by the development of the ICT infrastructures within societies. The ICT is a vehicle to access the IS and supporting platform, but it is not a core element. Relevant technical skills will be necessary to "survive" in a digitalized world penetrated by the ICT (such learning actually starts in families and in kindergarten), although they should not be separated from other training and knowledge. On the contrary, computer and information literacy should be implemented in all kinds of training. The same rule applies to life-long learning strategies which cannot be practiced only as separated series of lectures.

Computer *Schola Ludus*

Similarly, literacy is acquired through reading materials relevant to a beginner's pace and taste. Playing computer games (i.e., playing with software and hardware in general using the trial-and-error method), relaxing on Internet²⁰ and chatting and experimenting with ICT are the best ways to become familiar with this technology (rather than only studying software and hardware functions or programming). Unfortunately, the majority of this *edutainment* is scarcely available to women. Statistics on the sale of computer games indicate that 75% are purchased for boys,²¹ while only 14% of home computers are bought for girls.²² Most of the ICT is designed by men, and since men comprise the majority of ICT users, it is also designed for men. Such male-friendly design of computer games as well as the environment of some Internet chats are inhospitable to potential female users. There also is the double burden for women who lack free time to play with ICT combined with a tendency to motivate daughters to participate in more "practical" or

²⁰ Only a small proportion of TV viewers choose the program they intend to watch in advance. They first turn on the TV and then scan different programs before making a selection (Castells, Vol. 1, p. 331). I suggest that most of the Internet users (both individuals and institutions) should first choose the medium and then find relevant information items.

²¹ Spender (1995).

²² Ringler (1999: 3).

"social" activities. These factors further contribute to women's inequality in developing their own computer and informational literacy. This family "tradition" and motivation of daughters goes hand-in-hand with discrimination in education, such as stereotyping by teachers or setting different academic standards for women and men. Thus, a wider gap between female/male computer and information literacy contributes to inequality in the labor market.

Women should be familiar with the sociological dimensions of gender and technology so they can provide a framework in which to place their own experiences with the ICT. In the Czech Republic it is necessary to break the stereotypes, discrimination and myths about the necessity for technogenes and the treatment of ICT as a *Golden Calf*.²³ One of the possible ways is to train female tutors who will be more aware of gender inequalities to introduce ICT to women. Concerning the labor market, the feminist movement as an important medium of the transformation of the society should contribute to active women's unionization and the establishment of networks of support in Czech society.

²³ The Golden Calf effect already has been described in some of my papers (see bibliography). At the very beginning of the implementation of computers it was necessary to have a background in technical sciences for those who wanted to enter certain careers or influence computer development. Therefore, ICT was mastered mostly by graduates of technical schools. Although more user-friendly software was later developed, those who originally worked with computers established a "closed computer community" which was promoted by the (communist) managements within the companies. Other workers got used to asking them for help and advice, and the members of the "computer community" used a special language in order to promote their "uniqueness." This created a "golden calf" effect. Both room and personal computers were viewed as something sacred, hardly gained and closely watched. The computers were adored like golden idols (at this time their price was several times higher than the current prices of PCs). Also adored were the "selected" engineers, programmers and mathematicians, who created a "sacred and untouched aura" around them. The golden idol effect combined with social and political conditions created a dangerous myth, that knowledge of mathematics and programming were necessary for the use of computers. Today, with microcomputers and user-friendly graphic interfaces, the above-mentioned myth is still deeply rooted and is one of the reasons why so many people from the older generation and women in general in the Czech Republic reject modern information technologies as something "too difficult" or "for selected ones only." The fact that every day you can hear about developments in information technology (as well as using the "secret" computer language, which is, in fact, based only on several "foreign" words) leads disadvantaged groups to assume that now they need more sophisticated experience in order to manage "the golden calf." The Golden Calf effect exposes the myth that only select people are able and pre-determined to work with communication and information technology so that the computer literacy (informacy) is not for everyone.

Our work regime is the same one which was useful and legitimate in the industrial ages, where uniform rhythm was necessary to keep the manufacturing system efficient. In the IS there is no reason to start work at fixed time, to work 8.5 hours a day and to distinguish work days from holidays. If one looks at informational and managerial jobs (information professionals, managers, teachers, financial experts, advisors, attorneys, software and hardware designers), all are flexible in terms of time and physical location. Employees can work late at night, during weekends and holidays and in their homes or means of transport (sometimes it is more suitable and reasonable, but it certainly can have negative consequences). "Physical proximity or temporal synchronization of communication by individual members is no longer an obstacle in forming an effectively working community."²⁴

This creates a gap between those who work fixed hours in a specific location and those who are flexible in terms of time and space. Businesses try to cover this gap by designing their services for such clients. For example, banks are open virtually twenty-four hours a day (thanks to the possibility of making bank transfers via Internet), shops and libraries are prolonging their opening hours, and shopping malls are open on weekends. This trend calls for rethinking current legislation concerning the labor market. The days when individuals designed their lives to the needs of machines are over. Now we design machines to fit our needs (or at least machines are designed to pretend we have control over the time-scheduling of our lives).

The same tendency is present in the educational system. Universities and schools can open their doors for a wider clientele since they have "extensions" thanks to the ICT. But the fixed length and location of study schedules should be redesigned. Why don't we have students who study intensively for couple of weeks the same material which others study for years just because of their other activities or burdens? Studying at one's natural pace is the effective way to learn. The consequence of this approach would not lead to chaos and the discrediting of education in general. On the contrary, freedom of choice and flexibility will help students to design their careers, rather than to follow pre-linked and fixed schedules which lead to passivity. In the IS educational system, students will be forced to actively design their own programs and schedules and will be taught to take more responsibility for their own lives, creativity and abilities to organize themselves. The time and space dependency of educational systems which are still designed to prepare people for the "industrial society" actually creates limits and barriers. The information society

²⁴ Zlatuška (1997: 357).

breaks the barriers between time to learn and time to work by requiring both during one's entire productive life.

LAYER 3: Information as a modern weapon?

Almost any historical depiction of the origins of the ICT tends to describe this technology as an integral part of the defence industry. This idea became even stronger when the Internet was described as a decentralized network immune to a nuclear attack. It is true that the ICT has an especially intimate relation with the preparation of war and is the core of modern military affairs. Damage to security systems, communication systems (telecommunications infrastructure and transport), databanks, e-financial systems or public-administration systems would throw attacked regions into chaos by immobilizing defence systems. The child of the Cold War era - the Internet - is one of the projects that benefits from the generous promotion of military R&D in general. Rather than a strategic weapon, its primary goal was to enhance communication networks within scientific institutions. Thus, the dynamics and goals of ICT development to a great extent became autonomous from strategic military purposes. Indeed, "the Net of nets" is a unique blend of military strategy, R&D cooperation and scientific, academic and personal communication purposes and computer counterculture innovation.²⁵

State surveillance, however, is not directed only against external enemies. It is also exercised on local bodies. The society, formed as a state, always works as an "information society" since the necessary control over citizens, management and communication are the pillars whose functioning depends on an information supply. Information has always played an important role in the formation of states and in the development of the societies and structures of power. In theories on state surveillance in the IS netizens are described as inhabitants of a *panopticon* in which they can be permanently observed, controlled and analyzed because of the "glass walls" (i.e., the absence of physical walls). Fear of state surveillance is stronger in countries in transition where ominous state censorship and the monitoring of information flows were prevalent. This especially affects the transformation of the Czech Republic towards the IS - the transparency of the government, the restructuring of the PA and the changing of the system of the public access to information.

²⁵ Castells (1996: 345-375).

The growing sensitivity of the IS can be demonstrated on the practical use of surveillance methods in marketing strategies. Large businesses are collecting information about their potential clients in order to detect their spending habits. Electronic cards used in shops, Internet "cookies," information provided on application forms and public surveys are colorful sources of information. Consider your use of electronic cards for shopping. Data from this card, which can be read in a second by a small machine, will tell the marketing unit the items you purchased, the quantity, the time and location of your purchase and how often you shop. Some systems are able to automatically acquire *meta*-data - additional, attached information - about whose existence we might not know. Sophisticated methods of analysis, the potential for the unauthorized acquisition of additional data,²⁶ and the synergy between the available data can generate new information about the analyzed object. For instance, it can provide marketing specialists with one's spending habits, size of household, lifestyle, socio-economic class, type of job and weaknesses. The difference between previous state and private surveillance tools and similar methods in the information society is the fact that confidential or sensitive information could come to light automatically without a prior demand for it.

Automatically acquired information could enhance marketing strategies in designing tailor-made products, services and logistics or to enhance human-resource management and internal communication strategies within the institution.²⁷ On the other hand, it could become a powerful tool for manipulation towards increased spending, and in extreme cases could be used to harass, harm or blackmail individuals (when the same applies to state surveillance). One must consider who controls the collection of data, who benefits, who stands behind these practices and whether employees and citizens have effective tools to protect themselves against the misuse of information. These questions should be discussed in public forums and by legislators in order to promote information literacy and create adequate protection for individuals. The surveillance society brings many benefits

²⁶ I am referring not only to potential illegal invasions into databases or unauthorized use of sensitive data, but also to the lack of legislation and/or incompatibility among privacy policies of states and regions.

²⁷ Firms are interested in their employees as their customers. In 1997, an American Management Association survey of 900 large companies found that nearly two-thirds admitted some form of electronic surveillance of their own workers (The end of privacy, Economist: May 1, 1999, p.19). Management can monitor communication and other activities within the company which might be useful for HR strategies and internal information flows (finance, commands), but also for punishing or harassing people.

to its members, but also introduces the dilemmas of privacy rights versus security and the changing private and public spheres.

Mass or Customized Media?

The role of the media in the development of the modern democracy can be demonstrated in the analytical description of the three forces with which media has to deal: commercial interests, political powers and the society.

Without a doubt, lobby groups with strong commercial interests are behind the media scene. Since media are often used as spaces for advertising and the speed of the development of marketing strategies is so fast, we can expect to be treated as customers rather than users of information. But also there is a strong tendency to create huge media oligopolies which control TV channels, book productions and newspapers dissemination. Seven huge entertainment companies run by powerful personalities,²⁸ cover the "global" entertainment business by owning different bits of the media chains and selling brands (i.e., characters or ideas marketed in different ways: movies, books, computer games, music). These companies are interconnected because of their common interests which they sometimes better fulfill through cooperation, synergy or by sharing film libraries, rather than competing with each other. But this synergy actually can make their control and manipulation even stronger. From one media channel users can be connected to the other ones (i.e., through ads in books for video collections from the same producer, hidden advertising for the production of books on TV - everything unpaid but not recognized as commercials) so that synergy can damage a product whose value lies in its independence. On the other hand, without commercial promotion some media could not survive or at least their development would be much more difficult. In fact, all mediums have been successful due to commercial support by businesses (print, TV, and even the Internet).

Many entrepreneurial enterprises in the media industry are licensed and regulated by state organizations, meaning they are dependent on the whims and requirements of those holding political power. Political communication and information is captured by the media when without it, *political real virtuality*²⁹ would have no chance to exercise its power over the society. The state and defence institu-

²⁸ Time Warner (Gerry Levin), Disney (Michael Eisner), Sony (Nobuyuki Idei), Seagram (Edgar Bronfan), Bertelsmann (Thomas Middelhoff), Viacom (Sumner Redstone) and News Corp. (Rupert Murdoch). *Economist* (1998: 3-22).

²⁹ Castells (1997: 323).

tions became important users of the ICT when they were able to enhance their own communication systems and control over the society (state surveillance and espionage included) through the use of information networks within the media. Since government departments are important sources of information, the media have to be close enough to them to have the privilege of obtaining new, important, interesting and even scandalous information on time. On the other hand, the provision of information is important for governments and political bodies to ensure that their programs, politics and legislative initiatives are properly understood and supported.³⁰ Even political acts outside the media scene - demonstrations, campaigns, official visits or humanitarian actions - are staged with the subconscious desire to mirror them in the media. The true/false logic of the media sphere applies here in that regardless of the content, intention or interpretation, the message is "I am here, therefore you should support my product/program." This explains the popularity of idiotic, shallow, irrelevant or low-quality products, politicians or "experts." Being there is the message!

Such true/false logic also applies to the style of media stories (i.e., *stories* rather than *information*) when the media tend to present issues as a struggle between black and white: pro-choice vs. pro-life, left vs. right. What actually happens is that media are simulating the *missing* side in the discussion - the public. When this silent "other" is represented by very "noisy" talk-show audiences or the aggressive questioning of the targets. The media story is based on negative news in that *something is going on* means *something is wrong*.³¹ Journalists who hunt for conflicts and misunderstandings among politicians and try to uncover their weaknesses and sins do not necessarily create a negative image of a captured politician, group or region. Viewers and listeners tend to forget the content of the story and remember only the fact that they saw it in the media. But such negative, violent and humiliating images of the world that the media create is transferred to our subconscious. Thus, there is no surprise that in recent public-opinion polls when participants were asked if they were "satisfied with the current situation," the majority of respondents viewed *our situation* very pessimistically. People who are frustrated by the current

³⁰ Curran (1991: 25).

³¹ Hence, we know about the existence of the European Union only due to the financial scandals of the EU high commissioners and the "pork wars." The impact of the large and constant maintenance of the Czech Republic's transition (mainly through the EU's Phare projects) receives almost no coverage in the media, while the resignation of the Commission was discussed very thoroughly.

state of affairs could be passive media users who swallowed the illusion created by the media that government does not represent public interests while the media are on the "public's side." But they also could be "well-informed citizens"³² who deeply understand the "affairs on the scene" by having access to many information sources.

Edutainment or pure emotainment is a supra-ideology of the media discourse. The consumption of "low-quality information and advertisements" accompanied the entire printed era, but grew massively after 1945 when the advertising industry hit not only business, but also culture and politics. With the WWW, individuals now can create their own personal presentations. The frontier between "objective" information and motivated information is vanishing. Politicians use experts to prepare their "unprepared" speeches and interviews, companies employ teams of designers to produce official information³³ for the media and journalists can be influenced by the perks they receive from those who are reviewed. As Frank Webster concludes, "It is difficult to draw the line between where advertising stops and disinterested information starts."³⁴

The simulated authenticity of reporting rather than informing and the ideas of neutrality³⁵ and objectivity (through trying to eliminate writers' opinions which is seen in the majority of daily newspapers in the Czech Republic which distinguish between "news" and "opinion") create an illusion of the distance of the media from commercial and political lobbies. Modern designs of TV news studios perfectly reflect this tendency. While commentators read the news in the foreground, other staff members, computer equipment, telephones and TV screens are visible in the background, thus allowing viewers to see the "transparency" of the TV news.

Hence, the media play a schizophrenic role in simulated public space where public interests should be supported (e.g., Watergate, the financial background of the Czech Social Democrats [ODS], debates on free journalistic access to information from the government and public administration) while simultaneously serving as a channel for powerful commercial and political structures to send their messages.

³² Leggewie (1997: 3-25).

³³ For example, Microsoft worked out guidelines for journalists to provide them with "relevant" ways to report on the company and its products.

³⁴ Webster (1995: 129).

³⁵ The idea that disinterested information is more "true" and "objective" than motivated information fails – despite the impossibility to define objectivity in the media – when considering that in many cases a close connection with the issues, personal interest in the topic or inclination to present only one side from the opinions spectrum could actually bring more detailed, accurate and interesting information.

But the media are not just channels and transmitters. They have their own rules of conduct. Therefore, those, who wish to have a voice in the media have to adjust their behavior, language, body image and style to the nature of the medium.

Despite the obvious power and influence of the media, they are not directly responsible for the formation of public opinions to dictate what people should do, who they should vote for and what they should think. They are pluralistic, competitive and influenced by various experts and interests. The media message is not homogenous, but fragmented,³⁶ schizophrenic and understood in various contexts. Some media theorists argue that the new media also give space to minority issues and alternative voices, while they are less homogenous and more customized. But having the commercial and political forces together with the above-described nature (true/false logic, negativism and focusing on stories) of the media and considering that a greater quantity of information does not necessarily increase quality, how much of the media's message is diversified enough to give proper³⁷ coverage to alternative voices, minority interests and positive news?

³⁶ Fragmentation of the media message has various roots and presentations. This general tendency also has a significant impact on the sources of such messages. For instance, we can see that thanks to the "media stories" we know details about selected politicians, while information on other party members is not given. Thus, public support for certain political parties depends on the figures themselves rather than on knowing about the party's program as such. Hence, it is likely that in the future the differences between parties as well as the legitimacy of big mainstream parties will vanish as we approach "customized" and individualized politics.

³⁷ I do not intend to make this even more complicated by asking what *the proper* means? It seems that if ever we succeeded in having coverage of feminist, minority or human right issues, we would never be sure how this message would be articulated (by the media), how will be understood (on the receiver side) and in which context (on both sides) it would be understood. Audiences do not need to understand media messages as producers have intended them. For instance, the television show *Doktorka Qeenová*, the strongest feminist "propaganda" I have ever seen, is not understood as a "feminist" TV serial in the Czech Republic; here it is understood in a different frame of reference. Or, to bring another topic into the discussion, the desire to balance sexism in the media can actually resolve in producing new stereotypes. In the case of the old stereotypical image of women, we were fed with heterosexual blondes in the kitchen, caring about children, depending on their husbands and passively fulfilling their partners' sexual needs, while now the so-called women's magazines create a new stereotype for us: sexually active, hyperorgasmic brunettes who are economically independent and focused on a career without having children and other "family burdens." Both images are stereotypical because they are mass-produced, do not show the contradictions and dilemmas and are presented as the only way to attain happiness.

Glocalization

If the industrial model of information provided based on mass uniform production prepared for a homogenous audience (i.e., the idea of transmitting from one center to mass receivers creates a potential propaganda instrument) moves towards the tailor-made, just-in-time, client-oriented model of information services, then how does the notion of "mass" media fit in?

Mass-audience diversity is not present in the Czech Republic where media are still focused on the mainstream audience and rarely cover local events, minority groups interests or alternative views³⁸ and ignore proportions in the demographic structure. The transformation of the media in the Czech Republic is rather slow, and despite technologic developments, the country's media are still mass-oriented.

While media surround us with thousands of text and audio and visual stimuli in a second, the capacity, speed and ability to absorb such information is limited by our brains. Therefore, we receive, interpret and accept only fragments of multimedia messages which create our own mosaic and understanding. The process of understanding the media on the receiving side, therefore, is important when the information universe is a neuron network where each information item is defined by its content and contacts. The receiver decodes the media message using his or her own set rules of competence and interpretation. Therefore, the direct effect of the mediated communication lays in the process of selection, interpretation, (re)combination and the working out of the messages. Thus, the notion of mass media refers to the technological system, not to a form of culture. "We are not living in the global village, but in customized cottages globally produced and locally distributed."³⁹ While we are linked with the world from the safety of our couches, the domesticated TV is challenged by the Internet with its capability to promote mass-audience diversity by providing a fair choice in tailor-made channel systems and interactive, dynamic client systems (much better than VCRs, alternative radio stations, cable TV or CDs). The visual mosaic created by surfing TV channels or by Internet video recordings is enhanced by crossing the limits of the "traditional" media. A similar tendency in media convergence may be found in the future in the merging of "hardware" with telephones, TV sets, radios, CD players and computer

³⁸ The arguments that the alternative perspective now has more opportunities (Webster, 1995: 189) failed because they are based on quantitative evaluations. I would argue that since human brain capacity is limited, a portion of the information we can accept is the same and that the proportion of minority voice remains low.

³⁹ Castells (1996: 341).

equipment evolving into a single home appliance with combined functions. Globalization not only refers to understanding the media message in a local context, but also to the creation of a modern culture (thanks to the new media) where the global culture (message) doesn't complement the national one, but rather requires new ways of understanding (language, knowledge, experience). Rather than diminish local culture in favor of the new global one, a newly created "glocal" culture appears. Just as early telephone networks favored local over long-distance calls, the same applies to Internet and mediated communication which prefers pre-existing social networks and local contents to global ones. Despite having access to worldwide information systems, local news and interests predominate the news industry (local news coverage, which constitutes the majority of news, usually is presented first on TV news programs and in newspapers).

Television and the Internet soon will become epicenters of our social (and political) lives, especially since TV sets usually are located in living rooms and create the background for home activities. On the other hand, they contribute to individualism and along with other ICT equipment (microwaves, VCRs, alarms, karaoke or Tamagotchi) help us to organize our time individually regardless of family rhythms and social schedules.

LAYER 4: Netizens

Construction of identity and feminist visions of info_citizenship

People do not only play with their virtual environments; their fantasies actually begin with their own virtual visages and identities. Communication among entities on the Internet lacks visual and aural signals, important functions of which convey the very identity of those who are communicating. Therefore, cyberspace gives its inhabitants the illusion of the power to play with their identities, where one cannot only acquire new dimensions but also become someone completely different.

It is not only the illusion of anonymity and the creative hardware and software tools available to users that attract and entice many cyber-beings. The desire for the self-construction of one's (gender) identity is nothing new and is a characteristic of the media in general. It is only that cyberspace makes this desire true and more visible. In the famous film comedy *Tootsie* humorous situations were based on changing the main character's male-female roles. Regardless of the humorous situations, the fame of the movie was based on the media-simulated possibility of changing one's gender role and even to benefit from it. In reality "Tootsie" was an

unsuccessful man, but with a female visage he became a media star, a famous figure loved by numbers of fans.

The fame of media stars is based on their potential to simulate our own desired identities. Consider that the identification with a character is actually the very basis of any media story. The feature film *Superman*, for example, demonstrates the desires of a common newspaper reporter. Superman in his double role represents a normal man who disposes of supernatural abilities in order to act only in the name of "good." His abstract masculinity is appreciated by his female colleague who is unaware that ignored Clark Kent and beloved Superman are one in the same.⁴⁰ Don't those who admire Superman's adventures desire for extra extensions allowing them to fly, to kill just by glance or to cross time and space barriers? Since the media act as our extensions, as Marshall McLuhan showed in his book *Understanding Media: The Extensions of Man*, the new medium - cyberspace - promises ideal conditions to construct our new identities. Having such possibilities means that one can become a Super_cyber_(wo)man or play with a virtual visage like "Tootsie."

Significantly, most of such creativity is actually focused on playing with gender roles and fantasies about the body. Cyberfeminists make an interesting point that in contemporary culture, especially in science fiction, men are actually flirting with the idea of having babies for themselves.⁴¹ Science fiction and film fantasies are playing with a maternal function and the reproductive body as the origins of life, as simultaneously holding life and death (horror parts), introducing alternative reproduction systems and thereby creating a *monstrous feminine* syndrome. All of these experiments with cloning, panthenogenesis, retrospective contraception (as in the movie *Terminator*) or fertilization of a human being by a machine, alien or another extraordinary being are perfect examples of male-birth desires and/or vagina(womb)-envy.

Behind the acts of playing with male/female roles in cyberspace could be subconscious efforts to accomplish a desired identity or actual sexual orientation, which is not possible or acceptable in the real world. But not every cyber-being is so innocent. Among feminists, cases of deliberate play with male and female identity have been discussed.⁴² Behind these scandals were actually efforts to make a fun of somebody, discredited some cyber-communities or even harm or harass mystified targets. The consequences of gender-games have to be considered even in cases

⁴⁰ Eco (1995).

⁴¹ Braidotti (1996: 8).

⁴² Cherny, Weise (1996).

where they were not primarily inspired by destructive intentions. Among feminists such discussions were aimed at the means of dealing with gender-uncertainty or protection before various forms of aggression in cyberspace.

Sex-appeal of the (Personalized) ICT: Simulation or Stimulation?

An interesting parallel with "TV love-idols" and intimate (private) relationships with media features, which are in fact "available" and "shared" by an unlimited number of viewers, can be found in cyberspace. While traditional media offer pre-fabricated models of love-idols, in the computer-mediated environment we can design a "story" for our counterparts or ourselves. Hypertextuality and hypermediality integrate written, oral, and audio-visual modalities of human communication into the same system. Hence, having all of our senses active (still except smell and taste),⁴³ a large portion of the discussions, e-mail exchanges and video-conference meetings tend to introduce emotional, naughty, sexy and double-meaning talk.

Internet services cover different types of chat rooms, discussion groups or video-conferencing possibilities which actually raise the popularity of ICT and the demands for the necessary ICT equipment, hardware, software and training. Many users of such services are searching for information, ideas, entertainment or friends, while others are interested in just spending time chatting or having fun. While these possibilities contribute to the better use of ICT, promote self-training and enhance our extensions to cyberspace (see section "Computer *Schola Ludus*"), it is important to raise questions concerning gender equality to access such facilities.

Many of "just_fun" or "lets_talk" chats are actually dominated by people who intend to focus their talks on sex. When new users enter the chat room, they will start with questions about the technical equipment and then quickly turn to sexual orientation, the gender of the person (when it is not obvious) and sex issues in general. Some of the users of Internet chat and video-conferencing services actually "advertise" their interests in sexually-oriented chats using eloquent nicknames and "identity information," while others are either forced to follow (or are interested in following) the double-meaning discussions. I argue that the entire conversation is, in fact, sexually-oriented. Questions about the speed of modems, camera and

⁴³ The foundation of human practice in written discourse and the prevailing world of letters, sounds, and images in cyberspace limit our possibilities to express private emotions. It not only seems that signals are unequally received by the human brain, but also seems that some could be excluded from cyber-lives.

microphone qualities, memory capacities and wires are power contests of our extensions to cyberspace, extensions to our anatomy. The more powerful extensions we have, the better quality of cyber-bodies we can obtain. Consider the memory-capacity requirements for pornographic photos and videos. The dehumanization of abused bodies becomes more visible when downloading large files (photos, videos) with a slow modem and viewing them in low quality with pulling pictures. It will motivate many addicted users to purchase better hardware and software in order to enhance the extensions of their anatomy and senses. In some of these cases the motivation will be strengthened by a direct desire to receive a higher quality of computerized sexual stimulation.

An example can be found in French Minitel, an Internet service which was designed in 1978 and made available to the public in 1984. It became very popular after it introduced chat-lines or *messengeries*, most of which focused on sex-related conversations and offerings. Minitel became a vehicle of sexual fantasies and dreams rather than a substitute for pick-up bars (parallel with I-chats where physical contact is mostly impossible). In the 1990s more than half the calls accounted for such *tele-erotica*, although later this fashion faded away.⁴⁴ As the story of the telephone in general has many applications to the predictions of the future of the Internet,⁴⁵ it is likely that the popularity of sex-related I-chats and the sex-appeal of the ICT eventually will drop (but not that dramatically since we can see a similar tendency in television with various TV chats; and with tempting issues, such as life and death, TV becomes more intimate and keeps viewers watching).

Digital Rape

As an interesting example of the above-mentioned reappearance of different forms of sexism, one can take the presentation and use of the body in the media. Fragments of female bodies are used in advertisements on ICT equipment and Internet services. Sometimes bodies are modified by the computer to look more perfect or to fit to the certain environment. For example, female eyes are first colored green and then used in an ad campaign for network equipment; female lips, artificially red,

⁴⁴ Castells (1996: 343-345).

⁴⁵ Soon after the telephone was invented, it was considered a tool for business only. When women started using telephones for maintaining their social networks, telephones became widely used. Another interesting parallel is the fact that early telephone networks favored local over long-distance communication, which seems to me applicable to the early use of e-mail communication which favored pre-existing social networks.

appear on posters for media facilities; a nicely designed female body without head attracts potential Internet users.

When "scanned" and digitalized bodies are available, it is possible to play with them as someone wishes. The primitive recording of our face, body or other characteristics in the binary code enables unlimited modification and manipulation, when relatively small number of organized pixels is necessary for the "identification" of the person. Similarly, a portrait or caricature of the person does not require complete conformity with the model in all its details in order to be "decoded." The ICT actually enables a much detailed and plausible picture of the person while using "coding" of the characteristics, databases, mathematical modelling and re-touching. Such codes could be used for the reacquisition of the picture when each item is treated separately (such a situation shows Rosi Braidotti's theory about "organs without bodies" *ad absurdum*). This enables the computer to simulate gestures and different positions.⁴⁶ Thus, we could see modified bodies of some attractive targets usually in the form of a combination of famous face and naked body (e.g., Monica Lewinsky's and Bill Clinton's faces pasted onto pornographic pictures). And it is only a question of time before we will produce movies with cyberbodies. In cases where the digitalized body has some connection with its real model (perhaps as organs, fragments), such acts could be considered as digital rape or at least as harassment in cyberspace.

Speaking of harassment, some of my friends recently started receiving harassing e-mails just because it was possible to guess their gender from their e-mail addresses since the Czech language distinguishes between male and female versions of family names. Cases where women received sexually explicit letters after publishing their personal web sites are well known, as well as the fact that in many Internet chats women are pulled into sex-related discussions against their wills. It seems that when women enter the new space (dominated by men) they continue to be seen as sexual objects, facing the same kind of sexism found in the real world. Pornography, sexual harassment and discrimination are still present and deeply rooted in our society and, therefore, they are reproduced in cyberspace when they just might appear in different forms or can be automated.⁴⁷

⁴⁶ The same experiments are conducted with voice modulation.

⁴⁷ Many abusive acts can be done automatically by scanning digital materials and pre-setting responses. For instance, sexually explicit materials could be sent automatically to every e-mail which was decoded by a machine that belonged to a woman.

This reproduction of sexual abuse actually contributes to discussions on such issues in general. Cyberspace makes abusive actions more visible and more obvious when *old* problems reappear in the *new* space. As it is clear from the above-mentioned examples, the abuse of the body in the media would lead to wider discussions covering not only communication in cyberspace, but also the advertising industry and cultural production in general. If we consider that the majority of images, sounds and texts which we produce are available in digital form that could potentially be *penetrated* by using *powerful* ICT equipment, then the mechanisms for the protection and defence of individuals and social groups must be discussed and introduced.

A forceful style of modern women's art has been introduced in response to the hostile, pornographic, violent and humiliating images of women as well as to the old clichés and stereotypes that are circulated in the so-called "new spaces." Women have mobilized themselves through a number of women's WWW presentations (which are typical for their original design), information servers and discussion groups.⁴⁸ Parody, humor and irony are present in women's video art, writing, WWW sites and installations confronting the fantasies about the reproductive body and technology. Some of the provoking, insightful and non-nostalgic installations use urban, public spaces for creative and political purposes. "In (artists) hands, the city as an area of transit and passage becomes a text, a signifying space, heavily marked by signs and boards indicating a multitude of possible directions, to which the artists adds her own, unexpected and disruptive one."⁴⁹ This shows an interesting paradox: on the one hand, the (informational) city as a grid of communication flows has created profound anonymity, while on the other hand, it serves as a venue of information, visionary insights, creativity and inspiration.

An important note should be made on the connection between the crisis of the patriarchal family as a cornerstone of patriarchy and developments in biology, pharmacology and medicine that have allowed a growing control over the timing and frequency of child bearing.⁵⁰ In his book *The Information Age*, Manuel Castells pointed out that one of the four elements which contribute to the substantial decline of traditional forms of the patriarchal family is the growing control over

⁴⁸ The establishment of the women's only chats and discussion groups could help women get used to the ICT and also could protect them from potential attacks. The backlash of creating such *reservoirs* could be the separation of women.

⁴⁹ Braidotti (1996: 6).

⁵⁰ Castells (1997: 135-6).

child-bearing.⁵¹ The achievements of biomedicine give us the extensions to cross time and space barriers when it is possible with absolute transparency to control living matter. Images from inside and outside the mother's body or before and after the birth of a child are the perfect examples of displacing the boundaries of time and space using medical equipment. Using a microscope, one can actually cross the space barrier when accessing the life of living matter that he or she otherwise would never be able to see. Test-tube babies could be interpreted as the long-term triumph of the alchemists' dream of dominating nature.⁵² Such pictures and videotapes of pre-birth images become an attractive part of the commercial activities in medicine and, therefore, could be described as medical pornography.⁵³

Another factor which challenges the patriarchal society is a multifaceted transnational feminist movement which extends the organizing principles of the networked society by promoting educational opportunities and economic independence for women. Lesbian and gay movements, which disclosed previously undiscussed heterodox information, have contributed to sexual awareness (identity, liberation, and sexual abuse issues). Thus, it is not only women's liberation from compulsory and uncontrolled fertility and a consequentially shrinking family,⁵⁴ but also same-sex families with a possibility to rear children due to the biological and medical technologies, which frightens the patriarchal society.

Communication Deviants or the Information Poor: Who is Endangered?

We can describe the informational city as a dual city, with a transnational corporate headquarters, central management and highly educated professional personnel on the one hand and with an information poor underclass on the other. The separation of classes will become more vivid when we describe their actions as communication activities. (Information) poor individuals and groups lack access to communication, orientation and external links, and their physical environment, which they can access, defines their world. On the contrary, information society inhabitants can be described as individuals and members of groups that have access to a variety of sources and communication tools and are well-oriented and mobile. By orientation and mobility I mean the acquisition of relevant education (languages included)

⁵¹ *Ibid.* p. 136

⁵² Braidotti (1994: 88).

⁵³ *Ibid.* p. 68

⁵⁴ Castells (1997: 221-228).

skills and technology, which contribute to cosmopolitanism and extend personal or collective contacts and communication networks.

The virtual spaces created by consensual hallucination from data available from electronic networks were called many names. Global village, worldwide-web, information superhighway are the most common names for this world thanks to the ICT that is inhabited (mostly) by its users and producers. Such expressions imply global and democratic characteristics of the denotee. The polarization of inhabitants in the informational city, the reproduced discrimination and the existing economical, geographical, political and social barriers have to be considered. As it was partially discussed in the previous paragraphs and as it will be examined in the following ones, the worldwide global superhighway is, in fact, a scarcely accessible local road without traffic lights.

Barriers

Geographical (Spatial)

If we look at the world map to see which geographical regions could actually be considered as effectively equipped by the ICT and developing IS, we will be surprised at how small this new space is. As I have argued, when considering the spaces within one city, even in regions that are considered to be hit by the Information Revolution, there are potential places, which cannot represent the Information society. Most inequalities between spaces result from factors other than geographical locations. However, geographical location might influence some aspects of the development and enhancement of the Information society.

Economical

Not only states and regions, but also individuals or social groups (the majority of the world wealth is in hands of white males) are excluded from the IS due to their financial situation or economic environment which limits their possibilities to acquire information and communication literacy and effectively participate in the IS.

Political

The relationship between political power and the Internet is an important one to include in our thinking about the IS. One can see a warning example in the case of China, where after January 1996 all established networks were liquidated and had to be registered by the Ministry for Post and Telecommunication whose informa-

tion services works as a "needle-ear" through which all Internet communication runs.⁵⁵ The Chinese government, in fact, not only focused its control on internal information production, services, communication and transmission from China to the outside world, but also monitored the access and use of information outside "Chinese cyberspace." After the above actions, about 100 WWW pages were blocked because they provided criticism and information from sources other than ones with the official Chinese point of view (mostly the U.S. media, news in Chinese from Taiwan and Hong Kong, writings from Chinese dissidents and human-rights activists). Pornographic publications were also among the banned sites.⁵⁶ Such a means of control and censorship created many problems, and thus soon had to be redesigned. Despite government control, desired information could be obtained thanks to software and hardware "tricks." Much information escaped government censorship due to language differences and the pressure placed on the Chinese government by democratic forces. As a result, the Chinese government had to rethink its strategy towards the new media.

Social

The ICT is a medium of communication for most educated, affluent and male segments of society in the most advanced, democratic countries and more often in large metropolitan areas. Recent statistical surveys on use of ICT and, specifically the Internet, show that the proportional distribution of people in the world does not correspond with participation on the Internet. The majority of groups communicating in virtual space are young, white, educated males. In the Czech Republic, 80% of the Internet users are between 15 and 33 years of age with an average age of 28. Slightly more than 87% of users are graduates of vocational schools and universities, and 89.7% of them are male. Although the number of female users tends to grow (slowly), women comprise only 15% of Internet users in the EU and between 33% to 40% in the U.S.⁵⁷ These statistics show the quantitative use of the Internet, but do not reveal anything about the quality of use, activities or purposes.

Among the many roots of the above-listed inequalities is probably the idea that to work with the ICT one must possess expertise in computer science and related technical fields. This deeply rooted prejudice makes it especially difficult for potential older and female users who might be discouraged from using ICT. Paradoxi-

⁵⁵ Leggewie, Maar (1998: 231).

⁵⁶ *Ibid.* p. 231.

⁵⁷ Pruzkum (1998).

cally, the socialist state's promotion of technical and natural sciences in former Czechoslovakia was successful enough to result in high levels of female students educated in computer science, computer programming or other fields in engineering. Despite this fact, diplomas from the CVUT⁵⁸ neither have given women any great advantage in entering cyberspace nor helped the generation of "scientific-technical revolution" in general. This paradox shows us that the lack of technical training is not a major factor in the unequal participation of women and other groups on the Internet.

The needed training and necessary changes in the education system should be focused on implementing computer and informational literacy in all possible fields. One of the future consequences of the transformation to the information society could be a rise in unemployment among less experienced and skilled workers, the older generation and women. Therefore, the need for training for the effective use of informational sources, the analytical working-out of data and the strategic use of ICT for decision-making processes, entertainment and activism should be paramount in the entire process of training and education. Similarly as the major changes move from mass-produced to client-oriented services, human-resource development systems should be transformed from the anonymous production of industrial mass workers to individually tailor-made training adjusted to the needs of different social groups. Education and the training of trainers should, therefore, be much more sensitive to women's issues concerning the use of and access to ICT.

Conclusion

Stages of the development of the information society starting from the fundamental change in cultural production after the invention of printing press and leading to the widespread use of the new media in the informational city show us many parallels and similarities. The introduction of any new medium challenges the traditional ones by influencing their means of production and dissemination as well as their content by enabling convergence and synergy. Information and communication technologies are interconnected with the development of the societies when they influence the architecture of our environment and the design of our lifestyles, while society determines the implementation and use of such technologies. It is also obvious that the development of communication and information technologies continues to advance the development of the parts that enable the stimulation of human desires and the extensions of a user's anatomy. Another parallel we can trace

⁵⁸ Czech Technical University in Prague.

in analyzing the development of the information provision and usage from the times of hand-made manuscripts to digitalized electronic publishing is the social stratification based on access to information and the existence of various information deviations. While the quality of our lives is determined by accessibility to the ICT and the ability to use it effectively and strategically, the necessity to acquire relevant mobility and orientation (in other words, necessary education) becomes crucial for living and working in the information society. Another red line, which is drawn through this paper, is the relation between humans and computer technology. On the one hand, the ICT could be effectively used to enhance human work and decision-making processes; on the other hand, the traditional bureaucratic structures boosted by the modern technology could become even more opaque and less flexible. Another example of twisted human-computer relations is the variety of information and communication deviations, some of which paradoxically can positively influence the development of ICT (e.g., communication as a goal in itself, obsession with the ICT, ICT as a social status, addiction on ICT and discrimination against an information under-class which enforces and speeds up the development of information elite). The impact of the digitalization of the society also is shown on the construction of identity in the IS influenced by the possibilities for digitalization and fragmentation of human bodies, and the automatization of computer-simulated human actions. Identity in cyberspace is gendered when we witness the reproduction of rooted stereotypes and prejudices, which – paradoxically to the illusion of "new space without barriers" – enforces pre-established ideas of gender. Although people communicating in cyberspace do not acquire totally new identities and rather tend to become what they are in the real world when their identities in cyberspace extend from the real world, issues concerning trust among entities communicating in the information society have to be discussed. The architecture of the informational city, constructed from interconnected layers, shows, among others, the dilemma of privacy versus protection, which becomes crucial in the networked society. The more the informational city protects its inhabitants by using sophisticated ICT and by requiring certain levels of mobility and orientation, the less privacy they can have (thanks also to enhanced surveillance methods). This means we have to discuss not only privacy and copyright issues, but also the fact that protection could mean separation. Therefore, the widening gap between the information rich and the information poor, potential or existing discrimination, barriers against access to the IS, and the need for life-long training have been discussed in this paper. This paper describes the development of a networked society based on the model of the informational city. This allows us to demonstrate inter-

connections between the educational system and the labor market, public information providers and media, media and political power, and body politics and technological development. Such a model of the information society shows the challenges presented to modern democracies and the globalizing processes, especially the enlargement of the EU.

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