

Twelve

INTERNET AND ELECTRONIC DEMOCRACY

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In the last few decades information technologies have changed economic systems, management, education, and entertainment in many Western societies and countries. Changes have also occurred in politics, state and government institutions, and citizens' attitudes. Information has become the main source of economic and political power in the postindustrial era. However, these changes concern only certain parts of the Western world. Recently they have been spreading and now East-Central Europe, including Poland, is undergoing such changes.

In this part of Europe the global transformation from an industrial to an information society also overlaps the local transformation from totalitarian to democratic systems—the emergence of the post-totalitarian society. One question arises: how do information technologies, especially computer-aided communication like the Internet, influence political changes in post-totalitarian society? What is the role of information and knowledge, the digital technologies of their storage, processing, and transmitting, and what are the social institutions that serve them?

1. From a System and Cybernetic Viewpoint

Cybernetics and Systems Theory can be useful in answering the above questions but we cannot treat them as the only and exclusive theories of social phenomena. They can help describe and forecast the changes of any system, including a social one, where control and communication are the essential elements. Taking this into account, preliminary to the next consideration, we can state that Polish society in the nineties is an example of a transitory post-totalitarian system in which hitherto existing totalitarian control and communication evolve into a new, democratic, system.

By introducing the term "system," or rather giving it a new meaning, Ludwig von Bertalanffy¹ describes the structural properties of all types of "wholeness": biological, physical, psychological, and social systems, both natural and artificial, whose elements interact dynamically with one another within a given whole. Simultaneously, the properties of wholeness are not constituted by the mere sum of all parts or components, but constitute a new quality.

The classification of systems distinguishes between two basic types—closed and open. The basis for such a distinction is systems' internal organiza-

tion and the role which information plays in them. The classification does not entail mutual exclusivity of these types. Briefly, a closed system (which one considers from the thermodynamic point of view of a traditional physicist) is a system in which the overall direction of changes is irreversible, and differentiation of elements tends to decrease (the distribution of events tends to assume the most probable state), which leads to an increase in entropy while the system information becomes dispersed. Following external input, such a system may show a tendency to temporarily and locally increase the degree of differentiation and organization. This phenomenon relies on the mechanism in which information from the effector is fed back to the receptor domain. In some situations this leads to a closed system showing partial self-organisation and operational stability. Subsequently, the system assumes a state of homeostasis in which its entropy is decreasing and negentropy (information) is increasing. Closed systems are primarily models of machines and servomechanisms, although to a large extent they also constitute models for live organisms, including human behaviour and social communication mechanisms.

Open systems include all live systems exchanging matter and energy (including information) with their environment—those possessing their own metabolism. Open systems by their own volition aim at achieving a state of higher order and changing the organization of their elements. In this, they show “*equifinality*,” a property demonstrated by Bertalanffy, which refers to system stability and development direction depending not on the initial states (as they do in closed systems), but on their own parameters. The system’s final state may be arrived at in several ways and with a variety of initial states. Thanks to such structural properties, an open system evolves to the higher order and the higher organization state levels.

Cybernetic analyses of control and communication are also useful in the description and forecasting of system changes, especially in the case of social systems. Both categories concern information, which constitutes the basic element of any cybernetic system and the measure of its organization. Information is used in defining social systems, their structures, activity, and efficiency and the direction of changes. “*Properly speaking*,” says Norbert Wiener,

the community extends only so far as there extends an effectual transmission of information. It is possible to give a sort of measure to this, by comparing the number of decisions entering a group from outside with the number of decisions made in the group. We can thus measure the autonomy of the group. A measure of the effective size of a group is given by the size which it must have to have achieved a certain stated degree of autonomy.²

For any biological, social, or artificial system to maintain its unity and efficiency, it has to be equipped with means of receiving, processing, storing, and transmitting information within itself (between individual elements in the structure) and for the needs of its interaction with the environment. Information is a measure of system organization (of its decreasing entropy), while the means employed in a society include the press, television, and public opinion. Their efficiency determines the system’s balance, its homeostasis. The latter is always a state of relative balance (although Bertalanffy claims that in social systems homeostasis is not an entirely desirable state) which fosters efficient communication between different parts of a system. This happens due to negative feedback which allows the system to regulate itself and control its activity.

2. Information in Political Systems

A totalitarian social system based on the central and hierarchical control and communication among its subsystems betrays the tendency for the total concentration of feed-backs which regulate social processes; information in such a system does not effectively coordinate its functioning. With only one center it has limited possibilities of storing, processing and transmitting information. Consequently, bureaucracy arises and slows down the flow of information and the decision-making based on it. Such a system is closed to any external influences, it is characterised by low control of effectiveness, and finally, it falls into oscillations, crisis. Several crises lead to the system’s collapse. From the viewpoint of cybernetics it is a natural tendency, and not a certain evolutionary tendency of totalitarian systems as such.

The transitory stage of a social system is based on replacing the hitherto centralized information channels by new independent ones which then unblock the process of control and communication. After the “*information shock*” they all make the system’s functioning more efficient. A post-totalitarian social system still remains at the transitory stage and its dissipative structures and institutions disperse energy and information. But it cannot remain in such a state for too long since it is a pathological state. The key element of its change is information that ensures the self-control of the whole system.

In sociological terms, a post-totalitarian system must unblock mass communication subsystems, reduce the bureaucracy of decision centers, and open up to the local and global environment. The key elements are information and knowledge. New mechanisms of control and communication are the reason for the increase in the probability of the post-totalitarian system’s transition to democracy.

In a democratic system the dynamics of social, political, and economic processes arises from the cooperation and coordination among the parts of the whole system. The basic mechanism is the market, while information and

knowledge are the elements of this game. They are not centralized but dispersed among different groups, institutions and social structures. This diversity and dispersion of information is not a defect, but the system's condition of stability and efficiency. One of the cybernetic rules, according to Ross W. Ashby, postulates the indispensability of the diversity of any system. Another, according to Claude E. Shannon, states that there are perfect devices consisting of imperfect elements. The second rule says that if there exist many elements processing information and some of them are disturbed or damaged accidentally, the system still runs efficiently, inasmuch as others are numerous enough and are connected in parallel. This is where the essence of the possibility and importance of Poland's political transitions with regard to control and communication structures lies.

In order to pass from the post-totalitarian to the democratic stage Polish changes have to accommodate to political, economic, and technological conditions. Poland must become an "information-rich society" in which information and knowledge rank equally with capital and labor as conditions of economic progress and democratization.

3. The Internet as an Information Machine

Bertalanffy's and Wiener's classification and analysis of self-regulating open systems can be broadened by a model of a subsystem comprising two elements: man (user) and machine (computer). This is a complex techno-social system which, apart from its information-oriented character, has equally interesting political implications.

Man-machine open social systems may assume several forms, from very simple entities to highly complex ones such as the Internet. Contemporary personal computer users make use of and communicate with their own machines and, in varying degrees, with any other machine connected to a local or global telecommunications network. Querying databases on remote servers, utilizing the computing power of super-computers, sending simple messages, or contributing to newsgroups is possible thanks to both the user's personal computer and other computers working online in the telecommunications network. The Internet blurs the definition of an independent machine or tool limited to its own structure and a finite set of defined functions. It is a computer, a machine, and the Internet without which individual computers mean nothing or very little.

We can also talk about the emergence of a new technical entity: a network machine. Its existence is virtual and based on the equipment and applications of traditional machines. The technical, hardware aspect of the network machine is not as important as its multi-functional software which, with increasing frequency, becomes self-programming. The power and significance of a computer depend on the machines that control it and which make it a different machine every time it is used. A variety of functions performed by a

given digital machine make it universal in the true meaning of Turing's machine (constituting the basis of any computer), capable of simulation of any digital machine. The computer's universality is extended further thanks to connecting it to other computers and a universal network machine such as the Internet. Assuming part of their computing power and different self-programming functions, each computer becomes a new quality constituting an entirely new wholeness.

Apart from its novel structure and operating principles, the network machine also entails new uses. These in turn, significantly simpler than more traditional ones, result in new and novel attitudes on the part of its constructors and users. Social relations and institutions within those groups and communities which use information technologies are also changed.

The totality of the social system together with its dynamic internal relations becomes increasingly susceptible to the influence of microelectronic tools, especially the Internet, whose social role is hard to overestimate. According to Lewis Mumford, the Internet is a unique "megamachine" — a conglomeration of methods of execution of production, communication, administrative, military, or information tasks, which emerge and function in all societies. The megamachine entails the organization of social cooperation whose technical aspects (tools, communication systems, and communication infrastructure) give any social entity its defined material form. Mumford writes:

Wherever it was successfully put together the megamachine multiplied the output of energy and performed labor on a scale that was never conceivable before. With this ability to concentrate immense mechanical forces, a new dynamism came into play, which overcame by the sheer impetus of its achievements the sluggish routines and the petty inhibitions of small-scale village culture.³

Generally conditions are favorable on the basis of and with the substantial involvement of communication and information. Although, as the history of civilization shows, the megamachine develops both in democratic and in autocratic and totalitarian systems (to a varying extent and with different speed), the democratic system appears to foster its development best. It is significant that the Internet has emerged in the society and the state with the most advanced telecommunication infrastructure and the best-developed democracy, free public opinion, and free political elections.

The Internet is not the only medium of mass communication in the modern world although it is often perceived as such. There are still other effective networks of communication in such areas as mass culture, science, or politics; the press, television, and radio are still dominant and constitute the main elements of public opinion or social control. But they only function in one direction. In contrast, the Internet as the "fourth medium of message" has the

chance to become a many-sided and multidirectional information channel functioning amid individual elements of the social system. Similar to telephone networks and earlier, the telegraph, it can connect disparate elements of the system, providing a mass of information needed for control. The Internet is not intensified telephony (although it uses telephone lines) because it transmits information in parallel as well as serially. The Internet's character results primarily from its interactivity in which the sender and the recipient of many messages are equal. They affect each other during their exchange. The message can distribute itself in parallel, along the length and breadth of the network or many networks, diminishing control of the sender. It is this parallel structure, the interactive character of the Internet, and multi-access to enormous databases, that is the basis of the network's elements and its users' efficiency. This efficiency is the most powerful characteristic of the Internet as a communication tool in economy, management and administration, trade and market, and, last but not least, in the public domain. The slogan "think globally, act locally" refers perfectly to the Internet.

4. Political Use of Information Technologies

Among the institutional parameters of democracy—free election of representatives, freedom of speech, open criticism of authorities, full access to information, legal protection of alternative sources of information, and the right to associate—most depend on knowledge and information serving as a basis for political decision-making. In democratic societies, freedom of information and unrestricted access to its different forms are no less important than the rule of law or citizens' economic entrepreneurship.

Politics and many areas of civil enterprise based on information technologies in the United States and other Western countries are the subjects of many research programs and theories. Such theorists as Alvin Toffler,⁴ John Naisbitt,⁵ and Graeme Browning⁶ agree that representative democracy turns into direct democracy. The evidence is the increasing number of local initiatives and referenda, thanks to which citizens have an opportunity to participate in politics much more efficiently. They use telephone and cable systems for immediate contact with politicians and statesmen or visit remote databases of legislative acts and bills. Nowadays the electorate is much more educated, better informed, and better prepared for political decision-making. Direct democracy is based on the citizens' education facilitated by information technologies. As Naisbitt said at the beginning of the eighties:

Politically, we are currently in the process of a massive shift from a representative to a participatory democracy. In a representative democracy, of course, we do not vote on issues directly; we elect someone to do the voting for us But along came the communication revolution and with it an extremely well-educated electorate. Today, with instantane-

ously shared information, we know as much about what's going on as our representatives and we know it just as quickly. The fact is we have outlived the historical usefulness of representative democracy and we all sense intuitively that it is obsolete. Furthermore, we have grown more confident of our own ability to make decisions about how institutions, including government and corporations, should operate.⁷

Today's situation is much more complicated and democracy is undergoing multidirectional changes, so it is worth discussing.

The Internet is among the useful tools that play an important role in the evolution of electronic democracy although it should not be overestimated. One should remember that it is still shared by a relatively small population of "cybercitizens." Still, it reveals a dynamic tendency to grow; emerging Eastern European democracies are starting to participate in this process. One advantage of electronically networked political participation exists: the distribution of knowledge and information. It depends on sending addressed information from one institution or informal group to many political lists on computer servers and subsequently spreading them automatically to others. The essence of information distribution is its geometrical progression. The addressee has—on the basis of his or her political preferences—a unique opportunity of selective searching through endless databases. This mechanism, originating in academic and military networks, is available in politics and public affairs.

Present electronic means of mass communication, such as radio and television, are efficient and proven. But they have one important limitation: they are one-way and passive since the message flows only from the addressor to the addressee. The Internet provides instantaneous communication and global scope, and interactivity in political relationships, something equivalent to immediate democracy of Greek times symbolized by the agora. Today's cybercitizens have the opportunity of contacting politicians thanks to videoconferencing, sending e-mail, browsing homepages, filling out e-forms, voting in the initiatives and referendums, or monitoring and controlling public and government institutions (feedback mechanism in systems functioning). They begin to transfer their decision-making from physical places such as meetings and polling stations to cyberspace. This kind of direct citizen activity is the privilege of a minority, although the tendency is toward expansion.

Recent American presidential elections showed that many voters used information technology during the campaign. The population of Internet users who took part in the election may not have differed in political opinion from the population of non-users, but it was far better educated and more politically responsible. "At the same time," Browning reports,

Net regulars also tend to be vitally interested in political issues. They're not any more partisan than other citizens. A 1995 study of technology in

American households by the Times Mirror Center for The People & Press (now the Pew Research Center for the People & the Press) found that computer users are almost identical to those who don't use a computer in terms of party identification and congressional and presidential voting patterns. But they appear to take their responsibilities as citizens very seriously. The same study discovered that 80 percent of computer users aged 50 to 64 voted, while only 58 percent of their non-computer-owning fellow citizens in the same age bracket voted. Younger computer users—aged 18 to 29—voted in numbers that were double the voting rate of those Generation Xers who did not use a computer.⁸

Access to interactive political databases gives cybercitizens a new sense of taking part in electronic democracy. Information technologies do not guarantee that citizens always take advantage of them. Paradoxically, an increasing role of the Internet in political life overlaps the decrease in voter participation in many Western societies. The right to information does not automatically mean its use, although it still remains an essential feature of self-controlling democratic systems.

5. The Internet in Poland

What is the state of information technologies in today's Poland? What institutions are supporting them? What is the future of the Internet?

Internet use in Poland has barely started. According to different assessments at the end of 1999 the Internet user population fluctuates between 1 million (according to the number of users connected to a host) and 2.5 million (an *OBOP* [Public Opinion Research Center] estimate based on users' declaration), and the number is rising. In terms of age, sex, profession and place of living the typical Polish Internet user is a man under 30 (this indicator is diminishing), with a university degree, living in a large city, and using the Internet professionally and commercially. Questionnaires show that he uses the Internet mainly as a tool in his work but also as a means of communication (e-mail, access to databases, group lists, and so forth). Many schools are connected to the Internet.

From the point of view of Cybernetics and Systems Theory one should note that in the structure of Polish society the Internet reveals, paradoxically, post-totalitarian features where control and communication do not function properly. The main Polish Internet providers are still centralized. The dominant owner of the Internet's framework is *NASK* (Scientific and Academic Computer Network), while the main owner of the telephone network is *TP S.A.* (Polish Telecom); as monopolists they dictate financial conditions to other network providers. This monopoly is not in conformity with a market economy of free competition and a democratic society of freedom of choice and speech. What is more, it is an obstacle to the progress of technology and inno-

vation. It also gives rise to another danger: monopoly of the means of communication opens up the possibility of interference with the content of communication.

6. Prospects and Problems

Does the vision of electronic democracy engender any possible problems? A few can be articulated.

First, as long as access to the Internet remains restricted, it is not a fully democratic system of knowledge and information distribution. Second, the global reach of the Internet depends on information transcending state, national, and geographical barriers. In some circumstances such globalization may lead to itself to authoritarian and anarchic activity. Transnational corporations such as Microsoft can engender monopolistic, undemocratic software and network services and distribution as the price of globalization. Third, common access to network databases may create only an illusion of democratic decentralization; multi-access databases must be governed by centers that arbitrarily and undemocratically select and process data and information. This inevitably impinges upon such rights as privacy. Fourth, data and information protection rely on secrecy. This is a technological challenge and a social and moral issue as well. Consequently the question arises as to how to define the citizen's right to privacy within the communication network and how to protect it. If completely free access to information about individuals that has been collected by public agencies exists, this could violate those individuals' right to privacy. The introduction and spread of viruses presents another problem that must be solved if we are to have a viable electronic democracy.

NOTES

1. Ludwig von Bertalanffy, *General System Theory: Foundations, Development, Applications* (New York: George Braziller, 1968).
2. Norbert Wiener, *Cybernetics or Control and Communication in the Animal and the Machine* (Paris: Hermann and Cambridge, Mass: The Technology Press, 1948) p. 184.
3. Lewis Mumford, *The Myth of the Machine: Technics and Human Development* (New York: Harcourt, Brace & World, 1966), p. 190.
4. Alvin Toffler, *The Third Wave* (New York: Bantam Books, 1981).
5. John Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (New York: Warner Books, 1982).
6. Graeme Browning, *Electronic Democracy: Using the Internet to Influence American Politics* (Wilton, Conn.: Pemberton Press, 1996).
7. Naisbitt, *Megatrends*, p. 160.
8. Browning, *Electronic Democracy*, p. 12.