# GLOBALIZATION AND INFORMATION SOCIETY—INCREASING COMPLEXITY AND POTENTIAL CHAOS

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## Contents



## Summary

It can be maintained that at the moment humanity lives in a period of remarkable transition. A transition from simple to complex, from fragmented, mechanistic, linear and sectoral Newtonian understanding to systemic, holistic, self-organizing, nonlinear and evolutionary "Prigoginean" understanding, from unsustainable to sustainable, from industrial technologies to information and biotechnologies, from material to immaterial, from hierarchies to networks, from majorities to minorities, and from industrial societies via information societies towards something new. It means that old values, ways of thinking, socioeconomic organizations, institutions, ways of working and acting, and power relationships are breaking down, in such a way that new dominating solutions are not yet born—and perhaps never will be either. The future is possibly a mosaic-like combination of different communities and societies, values, ways of living, religions, and cultures. Transition is a creative process, which can produce not only collapses and threats, but also many interesting and challenging solutions to live and act in the society of the future.

It is probable that during the next few decades we will see powerful trends and turbulent phenomena. Both "megatrends" and "wild cards" will have an impact upon our societal structures, and policies, upon the ways we comprehend the world around us and upon our values, and also upon the ways we understand the concepts of development and progress. Industrial growth was based on the exploitation of nature in humanity's attempt to create material growth, and this exploitation is approved by industrial economic units and for example by the traditional political parties. They have a common value system with respect to the general Western idea of progress, that is, that growth almost always equals progress. In the course of decline of the old industrial society the value system of these institutions is falling into problems, as are the institutions themselves. Instead of the old homogeneous idea saying that progress equals

growth we probably see many different ideas of progress in the future. During that course of development the complexity of our societies is increasing constantly.

Real development in culture and in society in general needs the special form of order called chaos. Chaos is actually like an energy bomb, often necessarily needed to establish something new. The collapse of the socialist bloc is perhaps the best contemporary example of a situation where gradual changes were not fruitful or even possible anymore. The socialist system had to be torn down and driven into chaos in order that a new and better one could be born. Those societies obviously did not have the potential to develop gradually.

## 1. The Globalization Process

One of the most essential change phenomena is globalization, accompanied by regionalization (the European, American, and Asian blocs) and fragmentation (nations' desire to be independent, like the nations of the former Soviet Union and Yugoslavia). By globalization is meant the process that is leading to the situation where most of the states in the world belong to a system having global interactions. Regional processes like the integration of Europe happen at the same time and they form an intermediate phase and a part of this process.

Globalization is actually a result of a logical process. The history of humankind shows that human systems have had the tendency to create new, higher technological, economic, and sociopolitical system levels during the course of development. Human systems have an onion-like structure: new, higher levels are like new layers on an onion, possessing, for example, longer geographical distances in their interactions. The development from self-sufficient village communities, to city-states, to nation-states, to regional systems (Europe, North America, Pacific-Rim, etc.) and finally to an embryonic global system is a "natural" course of systemic development; the same type of evolution can also be seen in nature.

It has been characteristic of this development that the birth of a new system level has meant an increase in the complexity of the whole system, and also, that the new, higher level has had the tendency to delimit the autonomy of the level below it. This is very much true, for example, concerning the relationships between the state and the municipalities in many countries. It seems to be true in the relationships between the European Community and its member countries—now and even more so in the future.

If the same logic continues in the future, it means that those social units that are parts of the globalization process have to some degree adapted their local and regional activities to the limits and rules of the global system. The issue is simply that, if you want to be in the game of the global economy as well as the political and societal system, you have to obey the rules of the game, at least in the long run. The other alternative is to stay away, a model that was earlier adopted by Albania.

Fragmentation, the strong desire to create new independent nation-states, which we have seen as a result of the collapse of the Soviet Union, is a part of the whole process of globalization and regionalization. Nations want to have their independent societal

systems, but most of them also want to be active members of the more general global community. For example, the slogan that is often heard in Barcelona tells us a lot about this process: “Independent Catalonia in Integrated Europe.”

Globalization is not only a technological or economic process. Its cultural implications can hardly be exaggerated. Cultural coherence, multiculturality, tolerance of difference will be ever more important issues to be learnt. Multiculturality in its different forms will increase in the future.

At best globalization processes offer us better possibilities to learn from different cultures, and to live peacefully in a global multicultural community. Conflicts between cultures are naturally possible, too. It seems reasonable that the more people have physical and immaterial interactions (as in using the Internet) the more they will reach mutual understanding and respect towards other cultures. A real society of citizenship is possible. This is clearly a learning process for all peoples and cultures.

## 2. Information Society Equals Even More Complexity

The societal development in several countries is leading to the information society, where the major driving forces are the development of ICT (information and communication technology) and the fast increasing use of new devices (see Chapter *Transformations of Information Society*). Some of the most advanced countries like the Nordic countries and the United States are very much “there” already.

The current phase in developed Western countries has been named, depending on the standpoint: information society, communication or interference society, service society, third wave, learning society. The third wave, information society, started according to Castells in 1970s with the technological turning point triggered by microchips. At the same time information and knowledge became to represent the most essential elements both in production factors and products. The major issue in ICT is not the role of information and knowledge, but their self-cumulative nature and their use in the creation of understanding and in the development of ICT. The core of the information society is formed by the technologies of information processing and communication: the logic of technology is the basis for the development of the information society.

The information society includes both agricultural and industrial societies and also many new features such as the increase of information, know-how and interlinkages as well as the movement towards nonmaterial issues. The information society is more complex than earlier societies, because of emerging new issues. This can be seen not only as an increase in complexity, but also through the emergence of new activity levels; first of all international cooperation is moving towards global operations. There are clearly both quantitative and qualitative aspects of emergent processes.

According to Manuel Castells the first technological turning point was grounded on the invention of the steam engine and tools replacing manual work. From the viewpoint of, for example, transport a very great change came with railways using steam engines in locomotives. In communication technology a major impact came through the telegraph. The second technological turning point a hundred years later, was started through

development in electrical technology, combustion engines, chemicals, and iron technology. In transport the major effect was obtained through the introduction of cars, lorries, and buses. In the communication sector some very influential inventions—telephone and radio—appeared. During these two phases new transport systems had a big impact on the development of the new industrial society including the creation of wealth and changes in ways of living.

The third technological turning point is based on the development of ICT triggered by the use of microchips. Now changes in the way of living and business will be determined by ICT. Of course the old structures from the old industrial age will still be used and some of them are necessary also for the information age, but they are no longer the driving forces of development.

It seems plausible that ICT devices are still both developing and coming into widespread use. After the success story of telecopying (telefax) at the end of 1980s, people are now using mobile phones and personal computers with e-mail and Internet connection. Technological development will improve devices so that the speed of data transfer as well as memory capacity increases, but the size of devices decreases. At the same time multimedia capabilities—integration of different signals—will be improved so that one device will replace computer, telephone, television, and radio.

The driving force in the information society has been technology. The technological efficiency of computers has been improved, the size of mobile phones has decreased, and network connections have improved. The development of content has been coming afterwards. Many experts now think that the production of content will soon be the major driving force. The future will be stamped by the applications. It can be noticed already, for example in the US and the Nordic countries, that the applications are driving forces in the development of technology. People are expecting that technology satisfies their needs and provides them with services. Consumers are not satisfied with buying only a mobile phone. They make buying decisions based on the services provided; technology is then the issue of second order.

Personal communication systems, Internet, and the integration of public communication systems such as telephone, cables, and satellites are promising an interactive world, where every home and office are linked to each other. The number of Internet users is continually increasing. The fusion of telecommunication and information technology will be finalized and a new vocabulary will probably appear in communication: people will be televoting, teleshopping, teleworking, and in general telemaking everything. Sophisticated information services are being developed all the time and they should provide better and more cost-efficient possibilities for learning, working, and shopping which earlier were not possible without traveling. Some people already work part-time from their homes and teleshopping is increasing. Universities have started distant education systems and virtual universities, which are greatly expanding.

When trying to pick such developments from fast developing information technology, which could have long-lasting consequences, a megatrend of maximum mobility can be noticed. People want to move freely but at the same time carry a lot of options with them. In this way they know as much as possible about their surroundings (where is the

nearest taxi or a Chinese restaurant) and they are able to communicate in different ways wherever they are. This makes it flexible and easy to take care of business matters, run errands, take care of ones own family, have free time and in general live one's own life.

The development of a global super network—based on broadband (ISDN, ATM) and fiberoptics—possibly already in ten years will improve different virtual interactivities like teleservices and teleshopping. In developed countries this will cover probably most people but also in developing countries upper and middle classes will be incorporated into this development in the following decade.

Universal connectivity is the major megatrend in information technology, which will be realized with high certainty. There exist both the demand for it and also a will to provide it. At the same time as people want to increase their freedom with maximum mobility, they want to be connected into everybody and everything. With the aid of new ICT it will possible in the not too distant future to stay at home all the time (virtual travelling, teleshopping). In other words, people will be free to travel or to stay at home and in both cases it will possible for them to be connected to everything. It is up to you, whether you live a life of Indiana Jones or Homer Simpson.

And, the next phase is already in its embryonic state. Biosciences, biotechnology, gene therapy, are gaining more and more influence in research, technology, everyday life, and societal development. Within a few decades it will probably make sense to speak of biosocieties instead of information or knowledge societies.

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**Biographical Sketch**

**Mika Mannermaa**, born in Turku, Finland, in 1957, is Doctor of Science (economics, managerial mathematics and statistics) from Turku School of Economics (1991). He has held several positions as a researcher, mainly in the Academy of Finland, and also acted as a futures consultant in several companies, municipalities, and ministries and for the government and the Parliament of Finland. His research areas include theory and methodology of futures research, paradigms in futures research, futures barometers, the relations between humanity and nature, the future of highly developed countries (knowledge-intensive society), and the role of citizens' movements in shaping the future. Mannermaa is the author or coauthor of 200 reports, books, and articles in the fields mentioned above. He has also been a regular columnist in *Helsingin Sanomat* (leading daily newspaper in Finland). Mannermaa has participated in about 500 future-oriented conferences, seminars, and other meetings (more than 50 of them have been international), and given more than 400 presentations concerning futures studies. He has

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