

Manuel Castells

Researching the Network Society

In the last four decades, closely associated to the rise of a new technological paradigm in micro-electronics based information and communication technologies, we have observed the development of new communicative practices. Since meaningful communication is a fundamental feature of human species, the transformation of communication affects everything in human life, maybe (just maybe) inducing changes in the rewiring of our brains over time. After all, in humans all depends on the evolution of their

neural networks in interaction with their genetic heritage and their natural and social environment. From the history of technology we know that people adopt, use, and modify new technologies in ways appropriate to fit them into their needs and desires, depending on their culture, social organization, institutional environment and personality system. But there is also a specific effect of technology. In order for technologies to be adopted, used, and diffused they must be available at the time and place when their need is directly felt by humans and their organizations. Thus, there is synergistic interaction between technological discovery and social evolution and in this particular instance between the diffusion of digital communication and the rise of the network society.

At the heart of the scientific project that has guided my research in the last three decades is the attempt to study empirically the interaction between the new technological paradigm emerging from microelectronics-based information and communication technologies, and the evolution of individual behavior and social organization on a global scale.

I conducted this research at several levels:

- The transformation of the social structure, with the formation of a new type of society that I conceptualized as the network society.
- The effects of new information and communication technologies, particularly the Internet and wireless communication networks on individual behavior and on the culture of society. I also examined the interaction between cultural change and the culture of innovation that shaped the Internet, as in this case the users of the technology were also the producers of the specific form in which Internet and mobile networks evolved.
- The transformation of some essential domains of social relationships by the new forms of communication technology, with an emphasis on power relationships, politics and social movements.
- I integrated these different threads of empirical analysis in a grounded theory of social organization and social change that replaced the old theories of post-industrialism with a theory of the network society that included an understanding of the process of contemporary globalization, conceived as a global network of networks that link the core activities in every domain of human organization on a planetary scale.

My research has used diverse methodologies depending on the nature of the social processes under study: meta-analysis of secondary data, historical analysis, case studies, original survey research, interviews of key social and economic actors, focus

groups, network analysis, statistical analysis, and ethnographic observation. My approach was interdisciplinary and cross-cultural. I conducted my research personally in California, Spain, Russia, China, Japan, Finland, Chile and South Africa. I also used global data bases provided by my collaborators, such as the comparative surveys of the World Internet Project of the University of Southern California, the surveys of the Oxford Internet Institute, the surveys of the Lisbon-based Observatory of the Information Society, the American Life and Internet Project of the Pew Institute, in addition to my own surveys conducted between 2002 and 2007 in Catalonia and Spain by the Internet Interdisciplinary Institute that I directed. I included in my theory the cultural and contextual variation of the interaction between network technologies and the network society.

I will summarize my main findings in these different areas of inquiry referring to the publications that present these findings and their theoretical elaboration.

The study of the formation of the network society as the new social structure of the Information Age (the socio-technical form of social organization that superseded the Industrial Age) was originally presented in my book *The Rise of the Network Society* (Blackwell, 1996, with new editions in 2000 and 2010), and was further elaborated in my edited volume *The Network Society: a Cross-cultural Perspective* (Edward Elgar, 2004). The concept of the network society emerged from my observation of different domains of activity and in different contexts, as I discovered that networks were the prevalent form of social organization, with superior performing capacity using the versatility of new digital networking technologies. While networks are as old as humankind, digital technologies increased exponentially the capacity of the networking form of organization in terms of speed, interactivity, complexity and volume of information exchange to the point that the core activities in any realm of social organization are now constructed by and around networks.

Thus, our economy is a networked economy, both in terms of the macro-processes and in the operation of business firms. New communication and transportation technologies have allowed the formation of global networks that connect finance, production, distribution and trade throughout the planet, including in the networks every activity that is valued while disconnecting from the value-making networks those activities, populations, and territories that are devalued.

Capital is organized in globally interdependent financial markets that work in real time and transform every asset in securities using unprecedented computational capacity and computer networks managing high complexity at lightning speed. A new form of business has emerged: the network enterprise, as large corporations are internally decentralized, small business are networked among themselves and to the larger corpo-

rations, and the resources of companies are organized around business projects that are enacted by evolving networks bringing together capital, labor, technology and marketing strategies. The networking form of organization has replaced the vertical bureaucracies of the self-contained large companies of the industrial age. And because networks have no boundaries, they connect across the firms and across the globe. The network is the unit, the firms are the nodes, and the project is the operating system. A similar form of organizational transformation driven by networking takes place in science and technology, the key productive forces of our economy and society.

Labor follows this transformation of work, and is becoming increasingly individualized and based on the ability of workers to reprogram themselves for constantly changing tasks that require storage of knowledge and capacity to recombine this knowledge for innovation, rather than specific skills that become rapidly obsolete.

Culture and information are being transformed by the revolution in media and communication. Mass media are organized in global multimedia business networks, and digital technologies allow the connection of different forms of communication, both customized and globalized, with a growing interaction between mass communication (messages from one to many with little interactivity) and mass self-communication (multimodal messages in chosen time from many to many with relentless interactivity, based on Internet increasingly organized in wireless platforms).

In this fast changing world, governments and public sector organizations lag behind technologically and culturally, and this gap between business, society, and institutions is at the source of new conflicts and contradictions between interest groups and between generational cohorts.

Sociability is profoundly transformed in the network society by ubiquitous, permanent wireless connectivity and the massive access to the Internet (in 2013 2.8 billion users, as well as 6.9 billion mobile phone subscribers on the planet). Our society is constructed around personal and organizational networks powered by digital networks and communicated by the Internet. This historically specific social structure resulted from the interaction between the emerging technological paradigm and some major socio-cultural changes. A primary dimension of these changes is what has been characterized as the process of individuation, implying the decline of community understood in terms of spatial proximity, work, family and ascription in general. This is not the end of community, and not the end of place-based interaction, but there is a shift towards the reconstruction of social relationships, including strong cultural and personal ties that could be considered a form of community, on the basis of individual interests, values and projects. The process of individuation is not just a matter of cultural evolution, it is materially produced by the new forms of organizing economic

activities, and social and political life as I described above. It is based on the transformation of space (megapolitan concentration and fragmentation), business and work (rise of the network enterprise), culture (shift from mass communication based on mass media to mass self-communication based on the Internet), crisis of the patriarchal family with increasing autonomy of its individual members, substitution of media politics for mass party politics, globalization as selective networking of places and processes throughout the planet. But individuation does not mean isolation. Sociability is reconstructed as networked individualism and community through a quest for like-minded individuals, in a process that combines on line interaction with off line interaction, cyberspace and the local space. Individuation is the key process in constituting subjects (individual or collective), networking is the organizational form constructed by these subjects, this is the network society, and the form of sociability is networked individualism. Network technologies are the medium for this new social structure and this new culture. This social structure is global; it is a global network society, as globalization is a network of networks, and as networks connect the space of places and the space of flows.

However, any new form of social organization and any process of major technological change generate their own mythology – in part because it comes into practice before scientists can assess their effects and implications, so there is always a time gap between social change and its understanding; in part also because the media tends to report bad news, and if possible, scary news. For instance, the use of the Internet would lead people to alienation, isolation, depression and withdrawal from society. In fact, my studies – and all the major surveys globally and nationally – show that the use of Internet increases sociability and decreases isolation and alienation, as face to face sociability and on-line sociability have a cumulative, positive effect on social interaction, friendship, family relationships, civic participation, citizen information and political engagement. So humans are not lonely; they are more connected than ever in a new form of sociability that sociologists have identified as networked individualism, since individuation is a major cultural attribute of our culture derived from the search for autonomy of humans vis-a-vis the institutions that constrain their desire for freedom.

This connection between the culture of the Internet and the search for autonomy was shown early on in my books *The Internet Galaxy* (Oxford University Press 2001) and *La Transición a la Sociedad Red* (Barcelona 2007) and later in my analysis of the transformation of communication in my book *Communication Power* (Oxford 2009) as well as in my address to the Royal Society meeting in London on the occasion of the 350th anniversary of the Society on 28 September 2010.

The major social trend I have identified in my research, as presented in these books, is the growing emphasis by humans in constructing their autonomy vis-a-vis the institutions and organizations of society. They do so by defining their specific personal projects in interaction, but without submission, with the institutions of society. This is the case for a minority of individuals, but because of their capacity to lead and mobilize, they introduce a new culture in every domain of social life: in the economy (entrepreneurship), in the media (the active audience), in Internet (the creative user), in the market (the informed and proactive consumer), in education (students as informed critical thinkers, e-learning and m-learning pedagogy), in health (the patient-centred health management system), in e-government (the informed, participatory citizen), in social movements (cultural change from the grassroots, the rise of networked social movements), in politics (the independent-minded citizen able to participate in self-generated political networks). There is increasing evidence of the direct relationship between Internet and the rise of social autonomy, as shown in my research on Catalonia, based on a survey on a sample of 3000 individuals representative of the population at large. I built a scale of autonomy in different dimensions of social behavior: professional development, communicative autonomy, entrepreneurship, autonomy of the body, personal autonomy and socio-political participation.

These six types of autonomous practices are statistically independent among themselves, but they all correlate with the frequency and intensity of the uses of the Internet (Castells et al., *Transición a la Sociedad Red*, Barcelona 2007). These findings are in cognitive coherence with the studies conducted by Michael Willmott at the British Computer Institute in 2010 showing, for 35,000 people across the globe, the positive relationship between Internet use and indexes of happiness. The study showed that Internet uses empower people, increasing their feelings of security, personal freedom and influence, which in turn have a positive effect on personal well-being. Available evidence from many sources also shows that the use of Internet increases sociability. Since sociability and empowerment are key factors in fostering individual happiness, the findings of Willmott and my own findings provide strong evidence in support of the social benefits of Internet use in the context of a culture in which the search for autonomy is paramount – a culture of autonomy that was the source of the technological design of the Internet by its pioneers in the 1970s.

In the 2000s, new forms of networked interaction emerged in the Internet, with the rise of social networking sites such as Friendster (the first one), Facebook, Baidu, Twitter, LinkedIn, Twenty, Whatsapp, etc., whose viral diffusion has changed the landscape of human communication in all realms of activity, and particularly in sociability. In my book *Communication Power* (Oxford 2009), I analysed this transfor-

mation of communication. I showed that digital social networks are constructed by users themselves building both on specific criteria of grouping (entrepreneurship in creating sites, then people's choice) and on broader friendship networks, tailored by people themselves with different levels of profiling and privacy. The key to success is not anonymity, but on the contrary, self-presentation of a real person connecting to real persons. So, it is a self-constructed society by networking that connects to other networks. But this is not a virtual society. There is a close connection between virtual networks and networks in life at large. This hybrid world is a real world, not a virtual world or a segregated world. People build networks to be with others, and to be with others they want to be with on the basis of criteria, which includes those people whom they already know (but a selected sub-segment). If we needed an answer to what happened to sociability in the web world, here it is: there is a dramatic increase in sociability, but on a different kind of sociability, facilitated and dynamized by permanent connectivity and social networking on the basis of mobile communication networks. In the book I published with my collaborators, *Mobile Communication and Society* (MIT 2006), we showed that permanent, ubiquitous connectivity creates an infrastructure of communication that overlays everything we do in every domain and in every country, as we approach 7 billion mobile phone subscribers in the world. Social networking sites, usually accessed from wireless platforms, are living spaces connecting all dimensions of people's experience. This transforms culture because people share, usually with a low emotional cost, saving energy and effort. They transcend time and space, yet they produce content, set up links, and connect practices. It is a constantly networked world in every dimension of human experience. They co-evolve in permanent, multiple interactions. But they choose the terms of their co-evolution.

Thus, people live their physical lives but increasingly connect on multiple dimensions in SNS. Paradoxically, the virtual life is more social than the physical life, individualized by the organization of work and urban living. But people do not live a virtual reality; indeed, it is a real virtuality, since social practices, sharing, mixing, living in society is facilitated in the virtuality, in what I called time ago the space of flows. Because people are increasingly at ease in the multi-textuality and multi-dimensionality of the Internet, marketers, work organizations, service agencies, government and civil society are migrating massively to the Internet, less and less setting up alternative sites, more and more being present in the networks that people construct by themselves and for themselves, with the help of Internet social networking entrepreneurs, some of whom become billionaires in the process, actually selling freedom and the possibility of autonomous construction of lives. This is the liberating potential

of the Internet made material practice. The largest of these social networking sites are usually bounded social spaces managed by a company. However, if the company tries to impede free communication it may lose many of its users, because the entry barriers in this industry are very low. A couple of technologically savvy students with little capital can set up a site in the Internet and attract escapees from a more restricted Internet space, as happened to AOL and other networking sites of the first generation, and as could happen to other social networking sites if they were tempted to tinker with the rules of openness. So, SNS are often a business, but they are in the business of selling freedom, free expression, chosen sociability. When they tinker with this promise, they risk their hollowing by net citizens migrating with their friends to more friendly virtual lands.

I extended the study of the interaction between the Internet, mobile communication and the culture of autonomy to the realm of contemporary social movements. In my book *Communication Power*, published in 2009, I emphasized the rise of new forms of autonomous social mobilization in different countries, including Korea, Spain, Iran and the United States, by using the power of the Internet and mobile phone networks to bypass the control of political institutions and traditional political organizations. I proposed the hypothesis that these were embryos of the new social movements resulting from the characteristics of the network society. Then, in 2010-2013, these networked social movements materialized on a global scale, particularly in the Arab revolutions, in Iceland, in Spain, in the United States, in Brazil, in Turkey, and with lesser intensity, in thousands of cities of over one hundred countries. I conducted a first empirical study of the most salient of these movements, and I found a common pattern in spite of the diversity of cultural, economic and institutional contexts. I presented my findings and my elaboration of these findings in my book *Networks of Outrage and Hope. Social Movements in the Internet Age*, written and published in 2012 (Cambridge, Polity Press).

Summing up on my research on the network society, I showed that while the Internet, as all technologies, does not produce effects by itself, it has specific effects – powerful effects – in enhancing the capacity of the communication system to be organized around flows that are interactive, multimodal, asynchronous or synchronous, global or local, and from many to many, from people to people, from people to object, and from objects to objects, increasingly relying on the semantic web. How these characteristics affect specific systems of social relationships has to be established by scholarly research, and this is what my research, alongside the research by colleagues working in the new field of Internet studies, has tried to investigate for many years, following the Internet in its social and technological evolution. What is already clear

is that without the Internet, we would not see the large scale development of networking as the fundamental mechanism of social structuring and social change in every domain of social life. Internet, the World Wide Web and a variety of networks based on wireless platforms constitute the technological infrastructure of the network society as the electrical grid and the electrical engine were the support system for the form of social organization that we conceptualized as the industrial society. Thus, as all social constructions, the network society is an open-ended form of social organization that conveys the best and the worse in humankind. Yet, the global network society is our society, and the understanding of its logic on the basis of the interaction between culture, organization and technology in the formation and development of social and technological networks is a key field of research in the 21st century.

Beyond my specific contribution to the empirical and theoretical study of the network society, my research and teaching have developed for about five decades, and have investigated other themes. My first interest was in urban studies, first at the University of Paris, where as a young assistant professor I researched and wrote my first book *La Question Urbaine*, proposing a new theory of urbanization and spatial transformation; and at the University of California, Berkeley, where I wrote and published the field work research on urban social movements that I conducted for twelve years in the book *The City and the Grassroots* (Berkeley, 1983), which received the C. Wright Mills Award. Then I studied the interaction between technological change, economic restructuring and urban/regional development in the book *The Informational City* (Blackwell, 1989), which represents my transition from the study of urban processes to the study of the network society.

A second stream of research, still current, has been my interest in understanding socio-economic development, both in national contexts, and on the global scale. This includes my co-authored study with Pekka Himanen on Finland, focused on the interaction between the information society and the welfare state (Oxford, 2002); my study on the Chilean Model of Development (Santiago, 2005); the study I directed on the effects of mobile communication on development in Latin America (Barcelona, 2008); and my recent project on global development, co-directed with Pekka Himanen, to be published by Oxford in 2014 under the title *Reconceptualizing Development in the Global Information Age*.

A final theme, always present in my research, is the social analysis of economic crises. I published in 1980 my book *The Economic Crisis and the American Society* (Princeton 1980) on the economic crisis of the 1970s in the US; and I directed a project on the European/American economic crisis of 2008, published by Oxford in 2012 with the title *Aftermath: The Cultures of the Economic Crisis*.

I have also been active throughout my life in contributing to the creation of innovative science and research institutions. In particular, I have participated in the two major institutional initiatives launched by the European Commission in recent years in science and technology. I was a founding board member of the European Research Council (ERC) in 2005-2008, and a founding board member of the European Institute of Innovation and Technology (EIT) in 2008-2012. I was also a member of the Advisory Council on Information Technology and Development of the United Nations Secretary General, with Kofi Annan. I currently serve in the Scholars Council of the US Library of Congress, where I have been advising on the role of the Library in the context of Internet-based information processing.

My future research projects focus on the social dimensions of the current economic crisis in Europe and the US, the theme of the research that young researchers will conduct under my guidance using the generous Balzan Prize funding. My own new project, in 2014-2016, focuses on the multidimensional crisis of the European Union, examining the interaction between the financial crisis, the social crisis, the political crisis and the institutional crisis in the EU at large. It will be conducted from my chair at the Collège d'Études Mondiales, Maison des Sciences de l'Homme, Paris, in cooperation with the Gulbenkian Foundation and the University of Cambridge. And I will continue teaching full time at the Annenberg School of Communication, University of Southern California, in Los Angeles, and part time at the Department of Sociology, University of Cambridge – because my students have always been my source of learning, inspiration and joy, and I will continue to work with them as long as I can be helpful to their blossoming as autonomous thinkers.

Questions and Comments

Heinz Gutscher

Thank you very much for a very fascinating presentation. As a social scientist, I would have many questions, but I think that from the audience, too, there will be questions.

Alberto Quadrio Curzio

You said that you have done quite a lot of groundwork research, and you have brought to our attention the situation of Northern Italy, where there are these networks of small firms, and you said that firms are legal entities, while a network is not a legal entity. Now, in Italy there is a law of 2009 which allows networks or firms to be legal

entities, and the number of network firms as legal entities is continuously increasing. I think that this might be useful information for you.

Talking about Italy, we have an interesting situation now, or an “experiment”, on which I would like to hear your opinion. As you know, we have a political movement called the Grillo Movement, Cinque Stelle, which is run by Internet. Orders are given by Internet to people who are in the Parliament, and they have to execute these orders. What do you think about this kind of new political organization which doesn’t seem to increase democracy, because the people who give the orders are just two. And those who execute the orders are members of Parliament. What kind of new democracy is that?

And finally, I think that from an economic point of view, the network innovation has been less important than from the point of view of promotion processes. In fact, when you think about real economic systems or systems of production they are always rooted somewhere. When you have to produce something, you might connect production in very different places, but in the end you have to put all the pieces of production together, so the real economy is always grounded somewhere.

Manuel Castells

Thank you. Well, first of all, as a social scientist, it’s very important – at least for me – not to have normative judgments. I can do it as a citizen, I can do it as a person, but not in an academic environment. I never do it; I never do it in my classes. So what one can say about the Cinque Stelle movement is – in terms of what you say – two things.

First, it has been very effective as a form of organization, coming from nowhere to obtain – in the 2013 Parliamentary election – 26.1% of the Italian vote. And actually, in terms of direct voting expression, becoming the first party of Italy from nowhere, in terms, one can say, of political effectiveness, it’s very effective, even if later on in the municipal elections, it fell quite substantially. But it still plays a major role in Italian politics, coming literally from nowhere.

Second, about what you said in terms of the leadership of Beppe Grillo and his associates in the advertising industry, they are really a contradiction, because these new social movements based on the Internet are characterized fundamentally by horizontal networking and by the absence of designed leaders – in general, on the whole. And in fact, that’s part of their ideology. The ideology is that we don’t want the institutions; we don’t want a political party; we don’t want union; we just want people to network among themselves according to the model of network individualism that I mentioned before.

Well, in that particular case of Italy, there is – you’re absolutely right – a horizontal networking, but then two people on the top of the network, who issue unilateral

instructions to the network. That's a fundamental contradiction, and in terms of the analysis of the point of view of the social sciences – we can think that contradiction will probably make it impossible for that movement to stabilize either as a political movement, as a social movement or as a political party. At one point, it will probably become a political party, and at that moment, it will lose some of its specific appeal.

Now in terms of the economy, there I am not so sure. Look, a central part of the economy – absolutely central – is capital markets. That's central, and that's not the real economy, the rest is not the real economy, the more real economy is the financial economy. Quite fundamentally, even if we cannot touch it, the real economy is where capital is invested, is where all our money is, where all our savings are. Banks don't have our money. The money is in the global network of financial markets and constantly changing in terms of value. So the notion that the economy is purely the material production of the economy, I challenge that, and in that sense, the most important assessment of our globalized economy is the financial markets, which are pure networks. But I would go even farther. I would say that even material production – it's also extremely important – is also made of networks. I was the first to analyze the map of the electronics industry, starting in California, and in fact, Silicon Valley cannot be understood without Hsinchu in Taiwan, cannot be understood without the connections with Munich. So ultimately, you have to assemble something here, but this assemblage takes place in different sites in the world, depending on the location or on the advantage of one or another place. So we are, even in material production, in a completely networked economy – multi-location, you're right, you need to locate someone – but the location is multiple, and the unit of all this processing is the network, not the location.

Heinz Gutschner

Thank you, Professor Castells, I will give the floor now to Karlheinz Stierle, member of the Balzan General Prize Committee, who will present prizewinner André Vauchez.