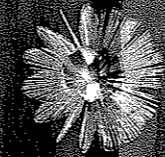


THE INFORMATION AGE:
ECONOMY, SOCIETY AND CULTURE

Volume 1

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Castells

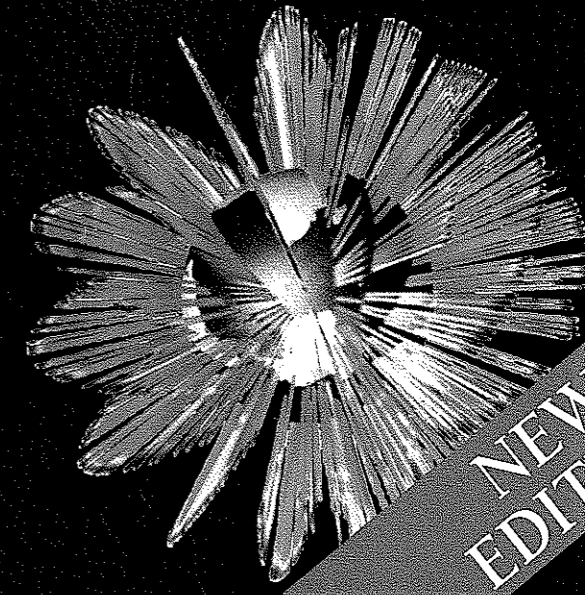


THE RISE OF THE
NETWORK SOCIETY



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Second Edition



NEW
EDITION

Manuel Castells



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Manuel Castells, born in Spain in 1942, is Professor of Sociology, and of City and Regional Planning, at the University of California, Berkeley, where he was appointed in 1979, after teaching for 12 years at the University of Paris. He has also taught and researched at the Universities of Madrid, Chile, Montreal, Campinas, Caracas, Mexico, Geneva, Copenhagen, Wisconsin, Boston, Southern California, Hong Kong, Singapore, Taiwan, Amsterdam, Moscow, Novosibirsk, Hitotsubashi, and Barcelona. He has published 20 books, including *The Informational City* (1989). He has been a Guggenheim Fellow, and a recipient of the C. Wright Mills Award, and of the Robert and Helen Lynd Award. He is a member of the European Academy. *The Information Age* is translated into 10 languages.

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Conclusion: the Network Society

Our exploration of emergent social structures across domains of human activity and experience leads to an over-arching conclusion: as an historical trend, dominant functions and processes in the Information Age are increasingly organized around networks. Networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture. While the networking form of social organization has existed in other times and spaces, the new information technology paradigm provides the material basis for its pervasive expansion throughout the entire social structure. Furthermore, I would argue that this networking logic induces a social determination of a higher level than that of the specific social interests expressed through the networks: the power of flows takes precedence over the flows of power. Presence or absence in the network and the dynamics of each network *vis-à-vis* others are critical sources of domination and change in our society: a society that, therefore, we may properly call the network society, characterized by the pre-eminence of social morphology over social action.

To clarify this statement, I shall try to link up the main lines of analysis presented in this volume with the broader theoretical perspective outlined in the Prologue. It should, however, be kept in mind that I cannot address the full range of theoretical questions introduced at the outset of this inquiry until after examining (in volumes II and III) fundamental issues such as gender relationships, the construction of identity, social movements, the transformation of political process, and the crisis of the state in the Information Age. It is only after treating these matters, and observing their actual expression in the macro-processes reshaping societies at this turn of the millennium, that I shall

try to propose some exploratory hypotheses to interpret the new society in the making. Nevertheless, enough information and ideas have been submitted to the reader's attention in this volume to be able to reach some provisional conclusions concerning the new structure of dominant functions and processes, a necessary starting-point to understand the overall dynamics of society.

I shall first define the concept of network, since it plays such a central role in my characterization of society in the Information Age.¹ A network is a set of interconnected nodes. A node is the point at which a curve intersects itself. What a node is, concretely speaking, depends on the kind of concrete networks of which we speak. They are stock exchange markets, and their ancillary advanced services centers, in the network of global financial flows. They are national councils of ministers and European Commissioners in the political network that governs the European Union. They are coca fields and poppy fields, clandestine laboratories, secret landing strips, street gangs, and money-laundering financial institutions in the network of drug traffic that penetrates economies, societies, and states throughout the world. They are television systems, entertainment studios, computer graphics milieux, news teams, and mobile devices generating, transmitting, and receiving signals in the global network of the new media at the roots of cultural expression and public opinion in the Information Age. The topology defined by networks determines that the distance (or intensity and frequency of interaction) between two points (or social positions) is shorter (or more frequent, or more intense) if both points are nodes in a network than if they do not belong to the same network. On the other hand, within a given network, flows have no distance, or the same distance, between nodes. Thus, distance (physical, social, economic, political, cultural) for a given point or position varies between zero (for any node in the same network) and infinite (for any point external to the network). The inclusion/exclusion in networks, and the architecture of relationships between networks, enacted by light-speed-operating information technologies, configure dominant processes and functions in our societies.

Networks are open structures, able to expand without limits, integrating new nodes as long as they are able to communicate within the network, namely as long as they share the same communication codes (for example, values or performance goals). A network-based social structure is a highly dynamic, open system, susceptible to innovating

¹ I am indebted for my conceptualization of networks to my continuing intellectual dialogue with François Bar. For further theoretical elaboration on networks, and on the network society, see Castells (2000).

without threatening its balance. Networks are appropriate instruments for a capitalist economy based on innovation, globalization, and decentralized concentration; for work, workers, and firms based on flexibility and adaptability; for a culture of endless deconstruction and reconstruction; for a polity geared toward the instant processing of new values and public moods; and for a social organization aiming at the supersession of space and the annihilation of time. Yet the network morphology is also a source of dramatic reorganization of power relationships. Switches connecting the networks (for example, financial flows taking control of media empires that influence political processes) are the privileged instruments of power. Thus, the switchers are the power-holders. Since networks are multiple, the inter-operating codes and switches between networks become the fundamental sources in shaping, guiding, and misguiding societies. The convergence of social evolution and information technologies has created a new material basis for the performance of activities throughout the social structure. This material basis, built in networks, earmarks dominant social processes, thus shaping social structure itself.

So observations and analyses presented in this volume seem to indicate that the new economy is organized around global networks of capital, management, and information, whose access to technological know-how is at the roots of productivity and competitiveness. Business firms and, increasingly, organizations and institutions are organized in networks of variable geometry whose intertwining supersedes the traditional distinction between corporations and small business, cutting across sectors, and spreading along different geographical clusters of economic units. Accordingly, the work process is increasingly individualized, labor is disaggregated in its performance, and reintegrated in its outcome through a multiplicity of interconnected tasks in different sites, ushering in a new division of labor based on the attributes/capacities of each worker rather than on the organization of the task.

However, this evolution toward networking forms of management and production does not imply the demise of capitalism. The network society, in its various institutional expressions, is, for the time being, a capitalist society. Furthermore, for the first time in history, the capitalist mode of production shapes social relationships over the entire planet. But this brand of capitalism is profoundly different from its historical predecessors. It has two fundamental distinctive features: it is global, and it is structured to a large extent around a network of financial flows. Capital works globally as a unit in real time; and it is realized, invested, and accumulated mainly in the sphere of circulation, that is as finance capital. While finance capital has generally been

among the dominant fractions of capital, we are witnessing the emergence of something different: capital accumulation proceeds, and its value-making is generated, increasingly, in the global financial markets enacted by information networks in the timeless space of financial flows. From these networks, capital is invested, globally, in all sectors of activity: information industries, media business, advanced services, agricultural production, health, education, technology, old and new manufacturing, transportation, trade, tourism, culture, environmental management, real estate, war-making and peace-selling, religion, entertainment, and sports. Some activities are more profitable than others, as they go through cycles, market upswings and downturns, and segmented global competition. Yet whatever is extracted as profit (from producers, consumers, technology, nature, and institutions) is reverted to the meta-network of financial flows, where all capital is equalized in the commodified democracy of profit-making. In this electronically operated global casino specific capitals boom or bust, settling the fate of corporations, household savings, national currencies, and regional economies. The net result sums to zero: the losers pay for the winners. But who are the winners and the losers changes by the year, the month, the day, the second, and permeates down to the world of firms, jobs, salaries, taxes, and public services – to the world of what is sometimes called “the real economy,” and of what I would be tempted to call the “unreal economy,” since in the age of networked capitalism the fundamental reality, where money is made and lost, invested or saved, is in the financial sphere. All other activities (except those of the dwindling public sector) are primarily the basis to generate the necessary surplus to invest in global flows, or the result of investment originated in these financial networks.

Financial capital needs, however, to rely for its operation and competition on knowledge and information generated and enhanced by information technology. This is the concrete meaning of the articulation between the capitalist mode of production and the informational mode of development. Thus, capital that would remain purely speculative is submitted to excessive risk, and ultimately washed out by simple statistical probability in the random movements of the financial markets. It is in the interaction between investment in profitable firms and using accumulated profits to make them fructify in the global financial networks that the process of accumulation lies. So it depends on productivity, on competitiveness, and on adequate information on investment and long-term planning in every sector. High-technology firms depend on financial resources to go on with their endless drive toward innovation, productivity, and competitiveness. Financial capital, acting directly through financial institutions or

indirectly through the dynamics of stock exchange markets, conditions the fate of high-technology industries. On the other hand, technology and information are decisive tools in generating profits and in appropriating market shares. Thus, financial capital and high-technology, industrial capital are increasingly interdependent, even if their modes of operation are specific to each industry. Hilferding and Schumpeter were both right, but their historical coupling had to wait until it was dreamed of in Palo Alto and consummated in Ginza.

Thus, capital is either global or becomes global to enter the accumulation process in the electronically networked economy. Firms, as I have tried to show in chapter 3, are increasingly organized in networks, both internally and in their relationship. So capital flows, and their induced production/management/distribution activities are spread in interconnected networks of variable geometry. Under these new technological, organizational, and economic conditions, who are the capitalists? They are certainly not the legal owners of the means of production, who range from your/my pension fund to a passer-by at a Singapore ATM suddenly deciding to buy stock in Buenos Aires' emergent market. But this has been to some extent true since the 1930s, as shown by Berle and Means's classic study on control and ownership in United States corporations. Yet nor are the corporate managers, as suggested in their study, and, thereafter, by other analysts. For managers control specific corporations, and specific segments of the global economy, but do not control, and do not even know about, the actual, systemic movements of capital in the networks of financial flows, of knowledge in the information networks, of strategies in the multifaceted set of network enterprises. Some actors at the top of this global capitalist system are indeed managers, as in the case of Japanese corporations. Others could still be identified under the traditional category of bourgeoisie, as in the overseas Chinese business networks, who are culturally bonded, often family or personally related, share values and, sometimes, political connections. In the United States, a mixture of historical layers provides to the capitalist characters a colorful array of traditional bankers, *nouveau-riche* speculators, self-made geniuses-turned-entrepreneurs, global tycoons, and multinational managers. In other cases, public corporations (as in French banking or electronics firms) are the capitalist actors. In Russia, survivors of communist *nomenklatura* compete with wild young capitalists in recycling state property in the constitution of the newest capitalist province. And all over the world, money-laundering from miscellaneous criminal businesses flows toward this mother of all accumulations that is the global financial network.

So all these are capitalists, presiding over all sorts of economies, and

people's lives. But a capitalist class? There is not, sociologically and economically, such a thing as a global capitalist class. But there is an integrated, global capital network, whose movements and variable logic ultimately determine economies and influence societies. Thus, above a diversity of human-flesh capitalists and capitalist groups there is a faceless collective capitalist, made up of financial flows operated by electronic networks. This is not simply the expression of the abstract logic of the market because it does not truly follow the law of supply and demand: it responds to the turbulences, and unpredictable movements, of non-calculable anticipations, induced by psychology and society, as much as by economic processes. This network of networks of capital both unifies and commands specific centers of capitalist accumulation, structuring the behavior of capitalists around their submission to the global network. They play their competing, or converging, strategies by and through the circuits of this global network, and so they are ultimately dependent upon the non-human capitalist logic of an electronically operated, random processing of information. It is indeed capitalism in its pure expression of the endless search for money by money through the production of commodities by commodities. But money has become almost entirely independent from production, including the production of services, by escaping into the networks of higher-order electronic interactions barely understood by its managers. While capitalism still rules, capitalists are randomly incarnated, and the capitalist classes are restricted to specific areas of the world where they prosper as appendixes to a mighty whirlwind which manifests its will by spread points and futures options ratings in the global flashes of computer screens.

What happens to labor, and to the social relationships of production, in this brave new world of informational, global capitalism? Workers do not disappear in the space of flows, and, down to earth, work is plentiful. Indeed, belying apocalyptic prophecies of simplistic analyses, there are more jobs and a higher proportion of working-age people employed than at any time in history. This is mainly because of the massive incorporation of women into paid work in all industrialized societies, an incorporation that has generally been absorbed, and to a large extent induced, by the labor market without major disruptions. So the diffusion of information technologies, while certainly displacing workers and eliminating some jobs, has not resulted, and it does not seem that it will result in the foreseeable future, in mass unemployment. This in spite of the rise of unemployment in European economies, a trend that is related to social institutions rather than to the new production system. But, if work, workers, and working classes exist, and even expand, around the world, the social relationships

between capital and labor are profoundly transformed. At its core, capital is global. As a rule, labor is local. Informationalism, in its historical reality, leads to the concentration and globalization of capital, precisely by using the decentralizing power of networks. Labor is disaggregated in its performance, fragmented in its organization, diversified in its existence, divided in its collective action. Networks converge toward a meta-network of capital that integrates capitalist interests at the global level and across sectors and realms of activity: not without conflict, but under the same over-arching logic. Labor loses its collective identity, becomes increasingly individualized in its capacities, in its working conditions, and in its interests and projects. Who are the owners, who the producers, who the managers, and who the servants becomes increasingly blurred in a production system of variable geometry, of teamwork, of networking, outsourcing, and subcontracting. Can we say that the producers of value are the computer nerds who invent new financial instruments to be dispossessed from their work by corporate brokers? Who is contributing to value creation in the electronics industry: the Silicon Valley chip designer, or the young woman on the assembly line of a South-East Asian factory? Certainly both, albeit in quite substantially different proportions. Thus, are they jointly the new working class? Why not include in it the Bombay computer consultant subcontracted to program this particular design? Or the flying manager who commutes or telecommutes between California and Singapore customizing chip production and electronics consumption? There is unity of the work process throughout the complex, global networks of interaction. But there is at the same time differentiation of work, segmentation of workers, and disaggregation of labor on a global scale. So while capitalist relationships of production still persist (indeed, in many economies the dominant logic is more strictly capitalist than ever before), capital and labor increasingly tend to exist in different spaces and times: the space of flows and the space of places, instant time of computerized networks versus clock time of everyday life. Thus, they live by each other, but do not relate to each other, as the life of global capital depends less and less on specific labor, and more and more on accumulated, generic labor, operated by a small brains trust inhabiting the virtual palaces of global networks. Beyond this fundamental dichotomy a great deal of social diversity still exists, made up of investors' bids, workers' efforts, human ingenuity, human suffering, hirings and lay-offs, promotions and demotions, conflicts and negotiations, competition and alliances: working life goes on. Yet, at a deeper level of the new social reality, social relationships of production have been disconnected in their actual existence. Capital tends to escape in its hyperspace of pure

circulation, while labor dissolves its collective entity into an infinite variation of individual existences. Under the conditions of the network society, capital is globally coordinated, labor is individualized. The struggle between diverse capitalists and miscellaneous working classes is subsumed into the more fundamental opposition between the bare logic of capital flows and the cultural values of human experience.

Processes of social transformation summarized under the ideal type of the network society go beyond the sphere of social and technical relationships of production: they deeply affect culture and power as well. Cultural expressions are abstracted from history and geography, and become predominantly mediated by electronic communication networks that interact with the audience and by the audience in a diversity of codes and values, ultimately subsumed in a digitized, audiovisual hypertext. Because information and communication circulate primarily through the diversified, yet comprehensive media system, politics becomes increasingly played out in the space of media. Leadership is personalized, and image-making is power-making. Not that all politics can be reduced to media effects, or that values and interests are indifferent to political outcomes. But whoever the political actors and whatever their orientations, they exist in the power game through and by the media, in the whole variety of an increasingly diverse media system, which includes computer-mediated communication networks. The fact that politics has to be framed in the language of electronically based media has profound consequences for the characteristics, organization, and goals of political processes, political actors, and political institutions. Ultimately, the powers that are in the media networks take second place to the power of flows embodied in the structure and language of these networks.

At a deeper level, the material foundations of society, space, and time are being transformed, organized around the space of flows and timeless time. Beyond the metaphorical value of these expressions, supported by a number of analyses and illustrations in preceding chapters, a major hypothesis is put forward: dominant functions are organized in networks pertaining to a space of flows that links them up around the world, while fragmenting subordinate functions, and people, in the multiple space of places, made of locales increasingly segregated and disconnected from each other. Timeless time appears to be the result of the negation of time, past and future, in the networks of the space of flows. Meanwhile clock time, measured and valued differentially for each process according to its position in the network, continues to characterize subordinate functions and specific locales. The end of history, enacted in the circularity of computerized

financial flows or in the instantaneity of surgical wars, overpowers the biological time of poverty or the mechanical time of industrial work. The social construction of new dominant forms of space and time develops a meta-network that switches off non-essential functions, subordinate social groups, and devalued territories. By so doing, infinite social distance is created between this meta-network and most individuals, activities, and locales around the world. Not that people, locales, or activities disappear. But their structural meaning does, subsumed in the unseen logic of the meta-network where value is produced, cultural codes are created, and power is decided. The new social order, the network society, increasingly appears to most people as a meta-social disorder. Namely, as an automated, random sequence of events, derived from the uncontrollable logic of markets, technology, geopolitical order, or biological determination.

In a broader historical perspective, the network society represents a qualitative change in the human experience. If we refer to an old sociological tradition according to which social action at the most fundamental level can be understood as the changing pattern of relationships between nature and culture, we are indeed in a new era. The first model of relationship between these two fundamental poles of human existence was characterized for millennia by the domination of nature over culture. The codes of social organization almost directly expressed the struggle for survival under the uncontrolled harshness of nature, as anthropology taught us by tracing the codes of social life back to the roots of our biological entity. The second pattern of the relationship established at the origins of the modern age, and associated with the industrial revolution and with the triumph of reason, saw the domination of nature by culture, making society out of the process of work by which humankind found both its liberation from natural forces and its submission to its own abysses of oppression and exploitation.

We are just entering a new stage in which culture refers to culture, having superseded nature to the point that nature is artificially revived ("preserved") as a cultural form: this is in fact the meaning of the environmental movement, to reconstruct nature as an ideal cultural form. Because of the convergence of historical evolution and technological change we have entered a purely cultural pattern of social interaction and social organization. This is why information is the key ingredient of our social organization and why flows of messages and images between networks constitute the basic thread of our social structure. This is not to say that history has ended in a happy reconciliation of humankind with itself. It is in fact quite the opposite: history is just beginning, if by history we understand the moment when, after mil-

lenniums of a prehistoric battle with nature, first to survive, then to conquer it, our species has reached the level of knowledge and social organization that will allow us to live in a predominantly social world. It is the beginning of a new existence, and indeed the beginning of a new age, the Information Age, marked by the autonomy of culture *vis-à-vis* the material bases of our existence. But this is not necessarily an exhilarating moment. Because, alone at last in our human world, we shall have to look at ourselves in the mirror of historical reality. And we may not like the vision.

To be continued.