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Castells and Informationalism

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Castells and Informationalism

“I turned my attention, from my new vantage point in Berkeley, to a major structural transformation in the making: the emergence of a new social structure, identified by some as postindustrial, that I gradually conceptualized as a global network society.” (Castells, 2016, p. 5)

Abstract

Understanding how the social appropriation of information and communication technologies came to define the contemporary period is critical for researchers and practitioners of innovation, business and management. This chapter explores how the work of Manuel Castells as a social theorist provides the intellectual tools and the encompassing lenses to enable the study and navigate the process of structural transformation in which our lives have been engulfed from the 1970s onwards. Castells procedure of considering technology, social usages and structural history leads him to a key conceptual result: the introduction of the “Network Society” concept. His ideas have most notoriously been applied to the field of communications studies, which he analysed through the prism of power. However, these insights are not containable in one single discipline as the implications of informationalism stretch in a variety of directions, making other dimensions of society amenable to the network perspective. Organisational studies are one topic in which this line of enquiry may fruitfully be pursued.

Keywords: networks, technology, network society, power, social movements

Chapter objectives

This chapter takes to work of the Paris-trained, US-tenured, world-travelled, Catalan sociologist Manuel Castells to explore the major features of a social world empowered by / dependent on information and communication technologies to reveal how his concepts and insights can be of help in understanding and steering organisations.

The chapter discusses:

- The development of Manuel Castells’ thought, its influences and framings contexts;

- How a society increasingly intensive in information and communication technologies was deemed suitable for an autonomous theorising work;
- How the logic of networks became globally pervasive and the defining logic of our historical time;
- Cities and technopoles were early informational phenomenal in which the rise of the Network Society could be perceived;
- The dynamics of domination and rebellion in an Internet-based age are co-evolutionary forces of a networked nature and global reach.

Castells and Informationalism

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Introduction

Manuel Castells emerged and evolved as one of the leading social theorists of the defining character of our times and spaces. It is difficult to think of a sociologist who has engaged as earlier and thoroughly with the global transformation associated with the information and communication technologies (ICTs) as Castells did. Indeed, to discuss Castells' work makes one immediately congregate his hallmark concept, the "Network Society", which in 1996 was introduced in the first volume of its now famous trilogy (afterwords republished and re-edited) on the economic, societal and cultural aspects of *The Information Age*. But this idea is just a node in an expanding cluster of other issues that have characterised his work, such as urban-regional development, informational economy, social movements, and mass self-communication.

The writings of Manuel Castells display a number of features of that makes them an enduring source for inspiration and guidance. They came of age at a period of intense and intriguing change. They combine a desire to describe technology seriously as a point departure of an aspiration to make insights operative for understanding the ultimate guideposts of organised life in society. They synthesise a myriad of empirical observations over several decades (in the form of statistics, interviews, case studies, etc.) and a number of long-lasting research programs (from sociology, economics, communication studies, development studies, etc.). They reflect a mosaic of contemporary experiences while integrating an open and adaptive mode of enquiry. That, is Castells' work is itself multidimensional and multi-modal: it is the

end-product of many sources; it is an analysis of many kinds; it is the initial material from which many other intellectual outcomes are to be made of.

Castells in space and time

Manuel Castells was born in 1942 and grew up in and around Catalonia under the regime of Franco. As he took part in demonstrations and he polemised in writing, he was censored and had to interrupt his studies in Law and Economics at the Universitat de Barcelona to become an exile at the age of 20. He went on to enrol at the Université de Paris, where we would obtain a doctorate in sociology. He was teaching when the events of 1968 caught up with him. His activism got him expelled from France, but not for long thanks to the intervention of Alain Touraine, his thesis supervisor (Hoogvelt et al., 1999; Scott, 2007).

In his university career Castells had an early stint in the North America when he spent the academic year of 1969-70 at the University of Montreal, Canada. He would move to the US later in the decade, 1979, where he was made Professor of City and Regional Planning at the University of California, Berkeley. In 2003 he integrated the University of Southern California, with a double appointment at the School of Communication and the School of International Relations. His North-American base made him able to accommodate a number of visiting fellowships and extended lectureships, including Japan, Hong Kong, Taiwan, Singapore, Russia, South Africa, Bolivia, Mexico, among other. He also become a member of a number of Academy of Sciences (Britain, Spain, Mexico, or the US) and won a number prizes, medals, and honorary degrees from academic institutions in many other geographies.

Castells has always been active policy-wise and as a public intellectual. The CV available in his personal website (www.manuelcastells.info, supported partially by Fundación Telefónica) lists a number of advisory roles to several governments (Chile, China, Brazil, Ecuador,

Finland, Portugal, among others) and consultancy experience at international organisations (the European Commission, OECD, UNESCO, UNDP, USAID, World Bank, among others). He has also maintained a weekly column at the *La Vanguardia* newspaper and is regularly interviewed by the mainstream media (including radio and television). His continued impact as a well-known figure can be grasped by a couple of quick illustrations as Castells is sometimes evoked as a symbol of the fields he contributed to reshape. He has been dubbed one of “the high priests of new media studies” and the inventor of “the idea of the network society” in the *Financial Times* (6 January 2006). When asked to enlighten topical social problem *The Economist* (26 February 2015) quoted on his views regarding how the fluidity of smartphone-based apps is changing the experience of time by teenagers – whereas elders would perceive events in a timeline dictated by proverbial mechanical clocks, teenagers’ lives play out in “timeless time” as activities and exchanges happen in parallel or criss-crossed ways. That is, Castells and his work talk beyond the borders to scholarly circles and carry their influence onto national and international policy arenas while spilling over to the public sphere via both local and global media.

The intellectual roots of Manuel Castells

In a recent interview, Manuel Castells looks back his time in the 1960s and 1970s: “Paris was the most creative intellectual and thinking place in the world, and exerted an enormous influence. The thinkers of that time are still the reference in today’s world.” (interview, *La Vanguardia*, 26 February 2018). For Castells, a leading light among these *maîtres à penser* was Alain Touraine. His doctoral supervisor had been one of the first to theorise (from a historicist angle) about the birth of a new society, the *post-industrial society* (1969). In this scenario the major cleavages ceased to be between capital and labour but rather between

those in conditions to influence the political-economic decision-making apparatus (the technocrats) and those unable to escape a dependent mode of participation.

This view was echoed in the Anglo-American world by the follow-up work of Daniel Bell (1973). Bell postulated the rise of a “scientific knowledge class” and a trend toward the “intellectualisation of technology” at the heart of the economy accompanied by “renewed communalism in politics” and growing acrimony at the cultural level. Manuel Castells thanks both these sociologists in his own major instalment on *The Rise of the Network Society* and emphasis that the post-manufacturing shift is accompanied by new types of inequality: both inside advanced economies (a consequence of the change in occupational structures) and between countries (given the uneven capacity of their economies to replace goods production with higher-margin information-processing activities and informational institutions) (see Castells, 2010, p. 14, p. 232).

In his own reflection regarding his thinking lineages, besides Touraine, whom he credits as “original mentor and intellectual father”, Castells (2016, pp. 15-6) recognises some distinct sources of intellectual debt. His structural Marxian heritage came from his friend and colleague Nicos Poulantzas, and became latent in his work spite (however methodological useless many times for his work). Thanks to his links to Latin America, and his exposure to thinkers such as Fernando Henrique Cardoso, Castells confesses to have learned to appreciate the unbalanced and unequal nature of globalisation especially through mechanism such as technology dependency and the political history of paths of development. Finally, Anthony Giddens provided crucial keys in terms of formulating social theory. Giddens’ answer to the structure-agency problem (a type of chicken-and-egg riddle in social theory) has influenced Castells own approach to networking social practices and communication power.

Learning from the streets and the territory

It seems fair, however, to list two other sources of inspiration: the *crowd* and the *ground*.

First, Manuel Castells refers often a particular year, 1968, as providing “particularly formative experience.” (Hoogvelt et al., 1999, p. 382) For Castells, in spite of all the radical left-wing jargon, the crowd on the streets were more engaged in anarchical practices than in a Marxist-led power-clutch. These were *proactive* (rather than *reactive*) social movements animated by different values than those derived from industrial society: environmental and women’s liberation issues were much different from proletarian calls to arms. With the benefit of hindsight, for Castells, these movements were in fact precursors of the nascent networked society and they were all the rage (in terms of entrepreneurialism as well as counterculture) when he came California ten years later. Castells participated throughout in his own way. He has been consciously and critically embedded in society; and, as such, Castells has been less interested in producing pure social theory than in advancing genuine empirical research while putting urges of social reform into perspective.

Second, Castells seeks to provide a bridge between old-style *grand* theorising and *grounded* theorising. This deliberate methodological choice meant that he would always start from a few theoretical constructs only to use them in the midst of live empirical materials as *unfinished re-search* tools that could be modified as long as they would be useful to explore an evolving, diverse and multi-dimensional reality (Castells, 2016, p. 3). True theory is actually repositioned as open theorising. That is to say, analytical tools only earn their epistemological legitimacy while asserting their discovery power on the social terrain. The critique of “*technological* determinism” and the critique of “*theoretical* determinism” go hand-in-hand in Castells. For instance, an awareness of both business models and social movements is fundamental to make sense of the Network Society as whole. Thus, “interthematicity” is the ability to orchestrate different specialist themes (like technology and organisation), which one

with its own specialist knowledge (such as engineering and philosophy), to explain socio-technical complexity (Rantanen, 2005, p. 139).

By the time Castells emigrated to Berkeley he was committed to be as pragmatic about interpretation as he was hands-on about evidence. Substantive detail matters, while theory is disposable (Scott, 2007). As he put it in an interview:

“I was no longer interested in correct answers but in relevant questions. I became more political when I left Marxism. I left the Parisian salons with wonderful categories that had nothing to do with reality and started relying on my own observations.” (Rantanen, 2005, p. 137)

From the city to the globe

For a sociologist like Manuel Castells interested in the generation of new social forms and norms, the city presented itself as a lively laboratory, a locus of experimentation. Creative urban processes, such as those driven by social movements, overturn given models of interaction and constitute innovative pattern-breakers of the established order. Social movements are, indeed, new relationships in the making. And what happens in cities, does *not* stay in cities: it diffuses fast and wide.

Initially, Castells focused on urban sociology. His work helped to bring the Marxist approach closer to the phenomenon of urbanisation (see Castells 1977, 1978). Civic activism played a key role in the bringing about “urban spaces” (as his commentator Howard, 2011, p. 12, emphasis). Local and trans-local resources, like transportation systems, housing, and libraries, were the product of social struggle. These special sites, in turn, shaped social processes since they brought together people from a variety of backgrounds and became the basis for new shared experiences in large modern agglomerations. The development of large cities was the outcome of the interplay between the production and the collective consumption of public goods, activities that happen to mediated by the state and local governments. But cities, the prime geographical points of accumulation of capitalism vis-à-

vis the rural world, were also a place of integration of emigrants and of patterning of new shared cultures.

Hence, the urban context is eventful by definition, and perpetually ambiguous in reality. It did not conform easily to neat and static regional divisions of labour. Moreover, change was not simply originating from a class struggle that could be resolved once the housing question was settled. There was conflict and protest. There was also culture and creation. Cities became the wellspring of social change, not just the non-countryside. And fast-changing cities were no simple targets for social-engineering. In this way, the city changed from within and carried the whole society with it. The notion of class failed to account for this wellspring of novelty. This dynamic and many-splintered nature of cities only became more visible with the student revolts in Paris in the late 1960s or the gay liberation campaign in San Francisco Bay in the late 1970s (Castells, 1983). The same goes for the identity differences that erupted in many places in 1980s and 1990s, like those involved in nationalities and languages. Place mattered; place was people on the move.

Framework, know thyself

The first time Castells seems to have adopted the term “informational” was as a qualifier for city. In his book *The Informational City* (1989) the major themes of technology and organisation are fleshed out and clearly at play. Here, Castells sets out to understand the process of transformation and the global reach of those post-industrial cities in which science and technology coalesced with new behaviours and norms (“social innovations”). Moreover, as demonstrated by the experiences of city-states (like Hong and Singapore) and urban-regions (like Silicon Valley): developmental policy was possible. Not only that: re-structuring places could re-structure the whole world economy. And all this in a plethora of institutional variations: no cultural determinism either.

The book's opening reverberates with the later Castells (1989, p. 1): "A technological revolution of historical proportions is transforming the fundamental dimensions of human life: time and space." It went on to state that social organisation was what made the difference between the potential and the actuality of technologies, that firms were freed in their operation by new information systems, and that families could be open to interactive communication flows and still be quietly at home. It referred to an "information age" that came out as non-linear response to the twin events of structural crises and the electronic inventions of the previous decade. This restructuring of socio-technical organisation could now be recognised as the "informational mode of development". Importantly, given the date of writing, the new historical interaction between social changes and technological changes was represented as taking place within (not replacing) the capitalist system.

Technologies such as micro-electronics, computer-aided design, optical fibres enabled the augmentation of capacity to generate, process, exchange and store information. ICTs dramatically impacted industry (flexible manufacturing) and services (office automation). Moreover, by facilitating the reprogramming of information embodied in materials (ceramics, alloys) and living organisms (genetic engineering), these innovations paved the way to a new general pattern of changes in production and in management. These changes converged into a new (techno-economic) "paradigm" (Castells, 1989, pp. 12-13).

As one can read in the book's notes, this representation was heavily influenced by number of economic theorists and historians. Indeed, mention is made of Schumpeter's "creative destruction", whereas the broad notion of *paradigm* is harvested from neo-Schumpeterian though (namely Pérez, 1983, but also from the closely related, but institutionalist in bent, the "régulation" school, e.g. Boyer and Coriat, 1986). The influence of history-friendly, comparison-sensitive, organisation-inspired American economists is also notable (Nathan Rosenberg and David Mowery, being in the bibliography). Years late, this economic

undercurrent would become even more explicit: in Castells' *The Rise of the Network Society*, the celebrated 1st volume of his *Information Age*, Christopher Freeman and Richard Nelson even came to figure directly in the acknowledgments.

In line with these authors' own macro perspective, Castells' research on the "informational city" as important new phenomenon would soon be scaled up to level of the entire economy:

"Thus, with the revolution in information technology as the material basis of the emerging system, the various features of structural economic transformation that we have identified relate closely to each other. In fact, they join together to form a new type of economy that I, along with a growing number of economists and sociologists propose to call the '*informational economy*' because, at its core, the fundamental source of wealth generation lies in an ability to create new knowledge and apply it to every realm of human activity by means of enhanced technological and organizational procedures of information processing. The informational economy tends to be, in its essence, a global economy; and its structure and logic define, within the emerging world order, a new international division of labor." (Castells, 1993, p. 20, emphasis added)

As it was already abundantly clear, countries and territories were already positioning themselves in a global chessboard in which science and intangibles were the key strategic bets. Locked into inter-regional competition in a world in which the borders of the nation-state were increasingly fluid, some degree of intra-regional cooperation complemented with flexible planning was involved. This dynamic mixed economy outlook steered urban areas vying for prosperity in an uncertain world on the back of the innovation ticket. The most interesting of these emerging "spaces of flows" (such as "technopoles", "science parks", etc.) were, thus, instances of collective agency. They were observed to contain combinations of public and private sectors involved in partnership schemes, the geometry of which varying in time and space, often in association with anchoring institutions (like universities) and other actors linked to trans-border knowledge networks (like flagship firms in global value chains). In these technology-seeking complexes the basic resources of the "informational economy"

of the 21st century endogenously come to existence (Castells and Hall, 1994, see also Saxenian, 1994, Bresnahan and Gambardella, 2004).

The fully-fledged “network society” concept

It is easy to realise that very rise of the *Network Society*, both the idea and the phenomenon, is a network story.

Castells’ framework is the product of a networked intellectual (see Howard, 2011, p. 16). His account was gradually built from first-hand inputs (including extensive travelling and extended stays in and out from his base in the Bay Area, California), from big ideas in the secondary literature (from Freud to Foucault), and from several long-standing descriptive-analytic traditions (from political economy to evolutionary economics) (see Castells, 2010, p. 25). Books and theories, as “intellectual products are, to a large extent, collective enterprises synthesized in the solitude of authoring.” (Castells, 1989, p. vii)

The emergence of computer-powered and Internet-based networks was itself also a triumph of geographically-based social networking. Both in terms of hardware and software, the success of the micro-electronics technological wave rested on the hands of US west coast youngsters (like Bill Gates and Steve Jobs) who were famously described as making millions, battling global competition while still unable to get a date (Stephens, 1996). This was a densely connected world, in which entrepreneurs and engineers accepted that they could learn from others and then trial out their own technological solutions to economically valuable problems. This being a a process that von Hippel (1988) described as “informal know-how trading” and “knowledge-bartering”. Groups of “hackers, geniuses, and geeks” were instrumental in advancing the ICTs that transformed, and keep transforming, the world economy. These were the:

“social and cultural forces that provide the atmosphere for innovation. For the birth of the digital age, this included a research ecosystem that was nurtured by government spending and managed by a military-industrial-academic collaboration. Intersecting with that was a loose alliance of community organizers, communal-minded hippies, do-it-yourself hobbyists, and homebrew hackers, most of whom were suspicious of centralized authority.” (Isaacson, 2014, p. 2)

The momentous change unleashed by the widespread deployment of the new technologies and correlated governance models has been characterised as the *Third Industrial Revolution* (Freeman and Louçã, 2001), a process leading to the unfolding of the *ICT paradigm* (Freeman, 2007). It is the kind of society which has generated and co-evolved with this new techno-economic template that has been best captured by Manuel Castells. This is the achievement that makes notorious among other social theorists.

The basic unit of economic organisation is no longer the 19th century *entrepreneur* (the atomistic agent of the First Industrial Revolution) nor the *corporation* (the bureaucratic agent of the Second Industrial Revolution), but the *network* (a distributed type of agent of change itself composed of a variety of agents). This network model of organisation is the engine of the new economic order and is itself held-together by a cultural code “informing and enforcing economic decisions at every moment in the life of the network”. This code is:

“The ‘spirit of informationalism’ is the culture of ‘creative destruction’ accelerated to the speed of the opto-electronic circuits that process its signals. Schumpeter meets Weber in the cyberspace of the network enterprise.” (Castells, 2010, p. 382)

Castells prefers the term “Network Society” to “Post-industrial Society”, since it gives a substantial answer to what comes next (an informational social structure in a globalising economy powered by ICTs) (Castells, 2010, p. 219). It also takes issue with the terms “information society” and “knowledge economy” because what is new and specific to our age is not just more information or better knowledge (they have been found to be central and

growing in all historically known societies): “What is new is the microelectronics-based, networking technologies that provide new capabilities to an old form of social organization: networks.” (Castells, 2005, p. 4). In a nutshell, Castells (2016, p. 8) came to recognise that “the new society in the making was, in all dimensions, made up of networks.” This what the new social structure is all about: social, organisation, institutional, technological networks.

Communication, media, and all that power

It is with of *The Rise of the Network Society* the Castells’ perspectives come to bear on the media system. (Howard, 2011, p. 14). Access to and capabilities to navigate the net are a prerequisite to participate in the contemporary life thereby determining exclusion of the self (see Scott, 2007) and the nature of inequality in the informational age (Mendonça et al., 2015). The ability to create and to govern networks is mostly expensive in terms of communication skills. This is why Castells has devoted so much attention to media and new media:

“I came to the hypothesis that processes of construction of meaning around the realm of communication were central to the formation of power and counterpower, and that communication was undergoing a major process of transformation in the age of digital technologies and the organizational restructuring of business and government.” (Castells, 2016, p. 8)

Given that no longer either the church or the state have a monopoly over information, cultural power is perceived to have moved to communication systems (Howard, 2011, p. 23). But, the media itself underwent structural transformation: the classical broadcasting set-ups of radio, newspaper and television (a one-to-many architecture) have been complemented, supplemented and substituted by mass self-communication trend (Castells, 2009). Technical convergence between information technologies and communication technologies implied an ever rising tide of “common digital bitstream representing all forms of digital media” (Mansell and Steinmueller, 2000, p. 335). Indeed, the technical possibilities

for varying interpersonal communication configurations have been expanding by each successive generations of ever more personal and mobile devices and accumulating layers of operative systems, software programs, and cloud-based apps (see Cardoso, 2008). The Internet is no level playing-field; rather it is a rugged and shifting terrain, There is, in fact, no escape from mediation (Slevin, 2000); and there is no escape from risk, like the loss of privacy (Mansell and Steinmueller, 2000).

The change in the mode of production and reproduction of news is an apt illustration of the consequences of the *Internet Galaxy* (Castells apt book title, re-using McLuhan's own *Gutenberg Galaxy*). Here, Manuel Castells (2002) noted the accelerated migration to a many-to-many form of communication and the coming into existence of "networked individualism". The intensification of this pattern led, for instance, led to extensions of Castells' ideas, like "networked journalism": the merger between users and producers of news content that create a seamless continuum of data and noise (van der Haak et al., 2012).

The internet has in itself interactional qualities, such as its specific instantiations have specific qualities the management of which is non-trivial (emails, blogs, vlogs, wikis, podcasts, chats, instant messaging, massively multiplayer online Gaming, etc.) (Castells, 2010, p. xxviii). What is more, the interplay between online and offline activities compounds the complexity of the implications of the digital communication channels and environments (Mansell et al., 2007, p. 5). The use of any medium involves asymmetries of power and communicative acts are "skilled performances", the efficacy of which crucially depend on the creativity in using the medium (Slevin, 2000, pp. 63-80). In the context of much work going on the political nature of ICT-augmented symbolic interaction Manuel Castells came of late to propose his own "network theory of power".

According to Castells (2009) in a network society the balance between the elementary forms coercive (exercising control over others through violence or the threat of violence) and persuasive (through induced submission to hegemonic interests and values) types of power is shifting toward the latter. The discursive production of power become dominant: and this happened through communication. Both those holding power and those trying to mobilise counter-vailing power play a network game. Network forms of organisation either in the media business or in the political business (these realms themselves converging) are becoming the most efficient ways to leverage resources and solve problems of collective action (Howard, 2011, pp. 23-23). As Castells (2016, p. 12), articulates it:

“In a world of networks, the capacity for social actors to exercise control over others depends on two basic mechanisms: (a) the ability to constitute network(s) and to program/reprogram the network(s) in terms of the goals assigned to the network, and (b) the ability to connect and ensure the cooperation of different networks by sharing common goals and combining resources while fending off competition from other networks by setting up strategic cooperation. I call holders of the first power position *programmers*; holders of the second power position are *switchers*.”

In an open democracy settings the social mobilisation *through* networks or *of* networks create turbulence (Castells, 2012). The Internet cannot be overvalued in terms of elevate the quality and transparency of a genuinely participatory political process (Sey and Castells, 2004), whereas wireless platforms such as Facebook and Twitter may produce decisive and irreversible effects by combining virality with an exponentially enhanced power to fragment debate and algorithmically manipulate information (see Castells 2012, p. 229; see also Castells’ interview, *Encore*, 26 January 2018).

Extensions, concerns, further potential

Over the years Manuel Castells has made efforts to update the application of his views, either as single author either in the company of colleagues. In the 2010 edition of his *Rise of The Network Society* (the first volume of the *Information Age*), Castells referred to a number of

topical events and structural developments. A few major themes are worthy of review: in what concerned the global financial crisis that unfolded since 2008 he analysed it as the result of a global automated business powered by electronic network infrastructures; work restructuring was also seen and a major force behind income polarisation; the arrival of China to informationalism.

The work of Castells is not, nonetheless, without its critics. In a number of passages in many books, Castells (2012, p. 6) contends that “technology does not determine society: it embodies it. But neither does society determine technological innovation: it uses it.” Many critics, however, have remained unconvinced and contains too much of technology euphoria. Fuchs (2012) for instance, insists that Castells’ reasoning is far too simplistic: the Internet mediates, but the intricate set of struggles and protests have greater bearing on transformation than techno-discontinuities. Goodwin (2018), in fact, questions Castells about the overly “Americanness” of the Network Society notion and its actual usefulness for other audiences (such as, one might think, in small countries in “old” Europe, in laggard peripheral territories in the global south, or large non-Western fast-insurgent countries like China that have vast tangible resources and their own reserves of civilisation identity).

And how has Castells’ work been received (and used) in the realm of business research, managerial practice, organisational studies, or economic theorising? A search in a bibliometric database like Scopus for articles and reviews displaying the term “network society” in the title, abstract and keywords finds 201 published papers between 1998 and 2017. Among the first paper to take up the notion were contributions to journals *Organization*, *World of Work*, *Geoforum* and the *Journal of Intellectual Capital* (for the sake of illustration these were the journals in which such papers were published in the year 2000 alone). Perhaps surprisingly, no less than 26% were papers that had something to do with management (a proportion rising to 30.9% in economics is included) whereas only 22.5% in

the so-called social sciences (data compiled using the journal classification system of Scopus). It seems as though the study of organisational and economic dynamics was really impacted by the kernel of Castells' work. The field of strategy has also developed in ways compatible with the network perspective: it is now less exotic to talk about "complementary forces" (Rugman and d'Cruz, 2003), "collaborative advantage" (Dyer, 2000), "relational capabilities" (Dyer and Singh, 1998), or the "community view" of the firm (Lawson, 2015). More sense-making and negotiation with existing organisational approaches and economic theories are to occur as Castells' work percolates. Where are the multiple crucial adaptations, synergies, and challenges to be expected? There are relevant aspects that Castells does not cover. An exhaustible list is impossible to produce, but one could run through the themes of interest on another key communication scholar to provide a yardstick. Robin Mansell (2012), in her own recent synthesis work underscored the importance of regulatory policy, intellectual appropriability mechanisms, the political economic of interfaces in mediated environments, the inclusion and re-skilling of informational stakeholders, the perils of proprietary platforms, the understanding of social imaginaries, etc. These could be areas for fruitful engagement for researchers and decision-makers.

A final word of encouragement for students and practitioners of change can perhaps be collected in an edited book by Castells and one his many network of colleagues. In this collective work on the constraints and opportunities arising from the crisis of "triumphant global informational capitalism", Castells et al. (2012, p. 13) present the *economy as culture*: that is, a complex system forever in transition that can "witness the rise of new cultures based on the use value of life as a superior form of human organization."

Concluding comments

The discussion here is a selective and stylised summary of Castells' rich set of contributions to dynamic social theory and to the often confusing and contradictory pathways of contemporary structural transformation. His strong insights on the importance of innovation and communication were retained, contextualised, and packaged with a view to further use and future creative re-usage. Relating one's own work to Castells' should be fascinating (networking) enterprise; this is because his theorising is open to evolution and unexpected re-combinations.

End-of-chapter exercises

1. In what sense does the "Network Society" concept help in making sense of the contemporary world? Reconstitute the ways by which Manuel Castells came to develop it?
2. The "informational economy" was a concept Castells articulated in the early 1990s as the Soviet Union collapsed and the capitalist system became recognisably more reliant on intangible inputs. Consider how this underpins Castells' broader social theory.
3. Is Castells a "technological determinist"? Discuss this label in relation to Castells' rejection of the "information society" and the "knowledge economy" terminology.
4. Power is a multidimensional phenomenon? In what ways does power take form in a world in which networks are the key mode of operation?
5. Drawing on Castells' views on "communication power" to discuss how an "informational democracy" is not the same as an "informed democracy"? In what sense can an Internet-augmented democracy be a dystopia?

Glossary

Communication – The process of sharing meaning through the exchange of information. Source: Castells, 2012, p. 6.

Globalisation – Globalisation is a manifestation of, and another way to refer to, the network society. This transformation that takes place as global networks become the operating unit of many geographies and spheres of human activity, starting with the economy. The network society spreads to the entire world, but unevenly so. Inclusion is notwithstanding imperfect, although the entire humanity increasingly influenced by its logic. Forces both promoting (e.g. financial markets) and opposing (social movements) globalisation deploy the new, flexible, and pervasive information and communication technologies. Source: Castells, 2016.

Informationalism – The paradigm that constitutes the material basis of early 21st century societies. Informationalism is the result of the complex interaction of technology and society that took shape from the 1970s. It refers to the broad template of patterns and dynamics that defines the current historical time (the Information Age), in much same way that the diffusion and uses of motorisation and electrification defined modern industrial times. At its core lies the augmentation of the human capacity of information processing and communication that was made possible by microelectronics, computing, software, Internet and other revolutionary technologies. Source: Castells, 1989; Castells, 2004, p. 8; Castells, 2016, p.8.

Mass self-communication – The usage by individuals of the tools provided by telecommunications providers and over-the-top platforms, often through accessible mobile devices but at the sacrifice of personal privacy. This digital capacity to autonomously produce and reproduce content through the Internet becomes a distinctive source of power in the Information Age. The overlapping and interactive networks of self-directed mass communication become a “new media” system. Source: Castells, 2009.

Networks – In formal terms a network is a set of interconnected nodes. A node is the point where the curve intersects itself. A network has no centre, just nodes. Nodes may be of varying relevance for the network. Nodes increase their importance for the network by absorbing more relevant information, processing it more efficiently, and accumulating knowledge. Networks are open structures that change and grow by adding or removing nodes and links. The digital-based technologies of informational processing and decentralised communication empower this old organisation form making it transcend the domain of private life and assume new coordination roles in the world of production, power and culture. Networks become the operating unit of an increasing number of dimensions of human activity. Source: Castells, 2004, 2016.

Network Society - The “network society” is the social structure that results from the interaction of new technological infrastructure and social organisation. This emerging, expanding and consolidating social structure is one made of networks powered by digital and decentralised information and communication systems. The logic of interconnectivity is its multidimensionality as linkages are built across technologies and individuals, communities, companies, industries, states, and all objects and actors that become alive in digital environments. Sources: Castells, 2004; van den Bulck, et al., 2018, p. 12.

Networked individualism – This is the dominant form of sociability provided by the evolving informational platforms and systems. The Internet is a space where individuals can

interact and build their networks, online and offline, on the basis of their interests, values, affinities, and projects. Source: Castells, 2002: 130-31; Sey and Castells, 2004.

Networked social movements – A new species of social movements in the digital age based on multimodal, digital networks of horizontal communication that are faster and more autonomous, interactive and decentralised, reprogrammable and less hierarchical. Source: Castells, 2012, p. 15.

Power – Power relations are the most fundamental of social relationships, as they define the institutions that regulate social life. There are two main forms of power: coercion (e.g. law) and persuasion (e.g. values). Power over bodies (coercion) is a weak form of exercising power, whereas power over minds (persuasion) is more lasting. To understand the discursive production of power in the “Information Age” it is important to understand the organisational and technological transformation of communication systems. Source: Castells, 2009, 2016.

Social movements – Social movements are the producers of new meanings and goals around which the institutions of society emerge or are transformed to represent these values by introducing new norms to organise social life. Social movements arise as counterpower by constructing themselves through a process of autonomous communication, free from the control of the incumbents and institutionalises forms of power. Source: Castells, 2012: 9.

Technology – Technology is material culture. Technological change is socially embedded. Technology *is* society. Source: Castells, 2005, p. 3, 2010, p. 5.

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