The Life and Times of The Information Society: A Critical Review

By

Professor Robin Mansell

Department of Media and Communications

London School of Economics and Political Science

Contact: r.e.mansell@lse.ac.uk

Paper prepared for the Fifth Anniversary Conference of the Department of Media and Communications, 'Media, Communication & Humanity', London School of Economics and Political Science, London, 21-23 September 2008.

The Life and Times of The Information Society: A Critical Review

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us …(Charles Dickens, *A Tale of Two Cities,* 1859: 1*)*

Knowledge has been at the heart of economic growth and the gradual rise in levels of social well-being since time immemorial. The ability to invent and innovate, that is to create new knowledge and new ideas that are then embodied in products, processes and organizations, has always served to fuel development. (David and Foray, 2003: 20)

1. Introduction

In this paper I use the label 'The Information Society' to designate a particular vision of developments arising from the growing use of information and communication technologies (ICTs) in the acquisition, storage and processing of information. The second quotation above from David and Foray is consistent with this vision insofar as innovative ideas are regarded as the 'fuel' for economic development. However, there are other rather different approaches to The Information Society that emphasise creativity and the tactics that enable the reappropriation of techniques of socio-cultural production and which may enable resistance to the dominant ethos of particular times and places. Many of these are highlighted in this paper.

In the early post-World War II period, a vision of what would come to be labelled The Information Society began to crystallize. Scientists, engineers and mathematicians at this time were very interested in information and communication control systems and new technologies that might help them to realize their hopes for the contributions of artificial intelligence and robotics. Innovations in ICTs provided technologists with new toys. If bigger and better versions could be built, they could be sold to the military-industrial-complex, the richest client for their wares. Economists were searching for a productivity strategy to stimulate growth, and information - although a problematic commodity - was expected to improve productivity in the manufacturing sector and to contribute to the growth of new information-related industries. This was the dominant ethos of that period.

Some hoped that the productivity gains reaped by mechanization could be replicated by automation as the dependency of the United States economy on services increased. Policy makers were trying to maintain full employment and growth, and information workers (such as librarians and software engineers) were attempting to increase access to knowledge by crafting better tools for accessing information. Many workers were finding themselves in front of keyboards instead of working with pens and paper. It was widely assumed that enormous benefits would be reaped by those best positioned to enter the information age. Social scientists working within various disciplines were trying to understand how all of these changes were likely to transform their societies. They continue to do so, raising many questions about whether we will become cogs in the machine or system or empowered savants. However, as I will outline in this paper, social scientists in different disciplines and fields of inquiry have responded to popular mantras

about The Information Society in many different ways. And, as I will argue, those who have been critical of these mantras have not been very persuasive in convincing policy makers and practitioners of the problematic nature of this concept. [1]

In the early 1950s, Harold Innis (1951) had warned against the 'ideology of information technology', indicating that the economic, social, cultural and political outcomes associated with a dependence on electronic information should not be straightforwardly associated with enhanced human well-being. As the scholarly community began to examine the concept of The Information Society from critical perspectives, issues of power and the situated nature of human experience as it is mediated by ICTs, claimed their attention, but the results of much of this work have not, with a few exceptions, filtered through to policy communities.

My aim in this paper is to offer an analytical synthesis of selected avenues of research that engage with the concept of The Information Society. Despite the claims that we make about interdisciplinarity in our approach to the field of media and communication, a critical assessment of work relevant to The Information Society suggests there is little cross-fertilisation between research in our field and those working in certain disciplines that are very influential in policy-making settings. This is not surprising given the nature of disciplinary enclaves, but it suggests that more could be done to build bridges in certain areas, not the least because those who criticise this vision from different disciplinary positions offer similar criticisms. For the most part, they find that developments in ICTs and in the social contexts in which they are being used offer us both the 'best and the worst of times'. Insofar as this is the case, the insights of research in the more critical traditions may make more forceful incursions into the mainstream policy debates on the implications of our increasing reliance on information if there is a renewed effort to build these bridges. I suggest some of the reasons for our lack of influence on these debates and set out some research areas where we might have greater opportunities for success.

In the first main section of this paper (s. 2), I provide an overview of the origins of the mainstream vision and highlight some of the work of those who have been critical of The Information Society vision. In Section 3, the perspective of the economics discipline, both mainstream and critical, is summarised. Section 4 offers a consideration of several strands of research more closely aligned with sociology or the media and communications field, mainly at the critical end of the spectrum of research. In Section 5, I consider why relatively few critical insights have found their way into policy making forums, especially at the international level, and I suggest several priority areas for future research. In the conclusion, I assess the likelihood of any change in the capacity of those who are critical of The Information Society vision to ensure that their voices are heard.

2. The History of a Vision

The origins of an emphasis on information and communication control systems, typical of much of literature on The Information Society, can be traced to a programme of scientific research, engineering and mathematics in the post World War II period and the publication in 1948 of Norbert Weiner's *Cybernetics: Or Control and Communication in the Animal and Machine.* As Professor of Mathematics at the Massachusetts Institute of Technology (MIT), he was interested in neurological systems and information processing and feedback systems. He was later to suggest that 'to live effectively is to live with adequate information. Thus, communication and control belong to the essence of man's

inner life, even as they belong to his life in society' (Wiener, 1956: 17-18). A year later, Claude Shannon, an electrical engineer and mathematician, also at MIT, and Warren Weaver, a scientist and Director of Natural Sciences at the Rockefeller Institute, published *A Mathematical Theory of Communication* (Shannon and Weaver, 1949). These men were interested in developing new approaches to automation and computerization as a means of providing new control systems for both military and non-military applications. Weiner, especially, was concerned with the philosophical implications of their work. He observed that 'society can only be understood through a study of the messages and the communication facilities that belong to it' (Wiener, 1956: 16). Notwithstanding his interest in society, at this time there were few interdisciplinary collaborations with social scientists working on the implications of the insights arising from science and engineering.[2]

Within the social sciences, economists such as Machlup (1962, 1980-84) and Porat and Rubin (1977), undertook empirical work aimed at measuring the intensity of information activities and the growth in information-related occupations in the United States economy. This was to give rise to comparative research aimed at mapping and measuring The Information Society, initially focusing on industrialized countries. In the 1970s research in Japan by Masuda (1980b) was developing a vision of The Information Society as well. The Information Society was designated a 'computopia' (Masuda, 1980a: 147), a society that would 'function around the axis of information values rather than material values' and rather idealistically, as one that would be 'chosen, not given'.

Bell's (1973) *The Coming of the Post-Industrial Society: A Venture in Social Forecasting* brought the information age to the attention of a broader group of social scientists in the United States and Europe. For Bell (1980: 501), 'the axial principle of the postindustrial society … is the centrality of theoretical knowledge and its new role, when codified, as the director of social change'. He said that the variables it was crucial to study were information and knowledge,[3] and that it was now necessary to focus on business and management issues as well as broader societal concerns. For Bell, Drucker (1969) and others, the task at hand was to forge a strong commitment to technological innovation as the mobilizer of economic and social progress.

In the field of communication studies in the United States, there was generally a strong emphasis on the potentially transformative character of ICTs, although Lasswell (1948, 1972) and Lazarsfeld and Merton (1948) concentrated on the interactions between mass communication and social action, as did Wilbur Schramm (1955). Their focus was mainly on a search for media effects, with its problematic pursuit of a stable set of effects. McLuhan (1962) popularized the term 'global village'[4] in his *Gutenberg Galaxy: The Making of Typographic Man,* extending the work of Innis (1950, 1951), and emphasizing features of communication in the written and oral traditions. McLuhan (1960: 567) suggested that 'the advent of a new medium often reveals the lineaments and assumptions, as it were, of an old medium', sparking a vociferous debate – which continues - about whether specific ICTs are causally related to certain societal configurations. de Sola Pool (1974) was one of several scholars in this period who put ICTs at the centre of the case for an Information Society policy. Such policy discussions offered a normative prescription for the optimal way of capitalizing on the benefits of the production and use of ICTs. Information Society as injunction and prescription, rather than as description, a programme consistent with the dominant values in the wealthy western countries of the world, was well on its way to being developed.

Among those who criticized this normative vision of The Information Society, some challenged the idea of a progression through stages of social and economic organization to achieve The Information Society. Others criticized the statistical evidence, arguing that the definitions used to collect data have been questionable (Menou and Taylor 2006). Still others were concerned about a strong focus on technology.

Miles and Gershuny (1986) and Miles (2005) examined the empirical evidence suggesting the growing economic significance of information in the economy, concluding that movement toward The Information Society was associated with very diverse tertiary (services) sectors of the economy and, therefore, analysis must be equally diverse. They advocated debate on the distributional implications of information resources and on the design of new ICTs, commenting that questions 'need to be asked *before* the systems are developed and installed'. This view was echoed by Freeman and Soete (1990b) who called for debate and a resolution of conflicting interests, as institutions and ways of living were being re-shaped in parallel with technological innovations.

Golding and Murdock (1978: 347) maintained that a priority for research should be to develop a theory of society with a focus on the implications of media and communication industry developments for social inequality. As they put it: 'determinism, in its arbitrary allocation of an unwarranted and unsupportable significance to the subject matter at hand, distorts beyond reprieve a balanced view of social structure and process' and leads to a neglect of 'sources of social dissent and political struggle'. Beniger's (1986) book *The Control Revolution: Technological and Economic Origins of the Information Society* underlined the importance of technological convergence. In contrast to those who contended that The Information Society was being driven by technological advances in tools, Beniger also highlighted the way that organizational systems were contributing to the emergence of 'a single infrastructure of control', an infrastructure that drew upon, rather than being determined by, the information machinery and which emerged as The Information Society vision.

During the time since the 1960s, there has been scepticism about the likelihood that fundamental relationships in societies would be altered as a result of innovations in technologies.[5] For example, Lyon (1986: 586) suggested that it was unlikely that the dynamics of industrial capitalism would be altered substantially by the spread of digital technologies. In his development of a tradition of research on the political economy of media and communication, Smythe (1977, 1981) had also challenged the premise that The Information Society would radically alter relations of political and economic dependency. And, similarly, Schiller (1981, 1984) examined concentrations of corporate ownership, which, he argued, were enabling the interests of capitalists to prevail in The Information Society. Together with Miège (1990), he argued that there was 'more menace than promise' in information technologies. What mattered, he insisted, was the 'the structural character of the world community and the quality of life and social existence it offers to *all* people' (Schiller, 1980: 313).

By the beginning of the new century, Garnham (2000) had concluded that the concept of The Information Society had failed to achieve much analytical purchase. This, he suggested, was because it is internally incoherent and the use of the terminology simply advances specific interests in the capitalist system. Robins and Webster (1987: 87), had also found fault with the analytical traditions in cultural studies and political economy, maintaining that 'only when it becomes possible to confront the integral cultural and economic dynamic of contemporary transformations, will it be possible to assess the

space for liberatory intervention as against the logic of domination and control in post-modern cultural forms'.

Murdock (1993: 537) stressed that rather than concluding that everything is transformed into a post-modern age as a result of innovations in technologies, the modern era should be seen as 'a complex articulation of formations, operating in different domains and at different levels'. Winston (1998: 2) found continuity between historical and modern social formations in his research on the period framed by the telegraph and the Internet. In general, in contrast to those who had focused primarily on the disruptive character of innovations in ICTs, many of these scholars acknowledged the opportunities associated with the innovations, but found them to be implemented in ways that replicated the sources of inequality in society.[6]

The work of Castells (1996, 1997, 1998) highlighted the cultural and institutional manifestations of network societies and the importance – or logic – of emergent social formations. Although, Castells' work has been criticized by scholars such as Stehr (2000) and van Dijk (1999: 129) for its 'modern version of "technological determinism"', his work has been very important for understanding the enabling as well as the disabling characteristics of the possibilities offered by the Internet, including an ever-growing number of social networking sites and greater access to mobile communication.

During the 1990s, some scholars such as Beniger (1990) began to call for the development of a general theory of information, communication, decision and control. This approach was taken up by systems theorists such as Luhmann (1996) and De Landa (1991) as well as Malik (2005). And Lash (2002), for example, maintained that in the information age 'the centrality of the means of production are displaced by the means of communication', that non-linear socio-technical assemblages replace the institutions of earlier societies, and, therefore, that a critique of information must emerge from information feedback loops within the communication system itself. Following Luhmann's (1996) systems theory, he argued that we can no longer stand outside the system and critique it from some transcendent ideological position.

With little if any overlap among them in terms of collaboration or, indeed, in terms of cross-citation, economists were developing quite different lines of inquiry into the Information Society vision. Some of these are summarized in the next section.

3. Knowledge and The Information Society Vision

Economists have concluded that knowledge creation is an important driver of the economy, typically, making little distinction between information and knowledge. From this perspective, for economists it is a very short step from The Information Society to The Knowledge Society. Of course, ideas about knowledge are not the exclusive preserve of economic analysis and there have been efforts in the policy arena to identify the implications of the labels 'knowledge society' and 'knowledge economy'. For example, UNESCO's (2005: 5) definition emphasizes capabilities and the variety, and especially, the plurality, of societies: 'knowledge societies are about capabilities to identify, produce, transform, disseminate and use information to build and apply knowledge for human development'.

This contrasts with OECD's (1996) definition of a knowledge-based economy as one that is very strongly dependent on the production, distribution and use of knowledge as embodied in human beings and in *technology*. The economist's emphasis on the knowledge-based economy reflects an interest in intangible sources of economic value. As David and Foray (2003: 20, 27) indicate:

> The crux of the issue lies in the accelerating (and unprecedented) speed at which knowledge is created, accumulated and, most probably, depreciates in terms of economic relevance and value. This trend has reflected, *inter alia*, an intensified pace of scientific and technological progress. … Knowledge-based activities emerge when people, supported by information and communication technologies, interact in concerted efforts to co-produce (i.e. create and exchange) new knowledge.

Developments in information societies have created many challenges for market analysis. This is because, from an economic vantage point, information has peculiar characteristics compared to tangible goods. Information is intangible, non-rivalrous (one can give it to someone else and still possess it) and non-excludable (it cannot be taken back once it has been given and receivers can pass it on without giving it up). It is difficult, therefore, to analyse market dynamics where information plays a significant role because conventional economic models are not designed to take account of these features of information. In particular, once information is produced it requires considerable effort to prevent its being passed on to others, while ICTs make the costs of information reproduction negligible, creating a paradox over how to finance its initial (first copy) production costs.

Stigler (1961: 213) was quick to realize this. He said that 'one should hardly have to tell academicians that information is a valuable resource: Knowledge *is* power. And yet it occupies a slum dwelling in the town of economics'. Stigler was mainly concerned with information and the determination of prices in markets. However, as the Internet has become the site of growing volumes of commercial activity, the argument that information is an 'experience good', that is, that the ability to make choices about information depends on the experience of the person choosing, has been popularized in the economics and management literatures, notably by Shapiro and Varian (1999) in their book *Information Rules*.

Economists seek to understand what factors lead to increases in productivity, that is, the possibility of producing more with constant capital and labour inputs. Increasing productivity is sufficient for economic growth, a central goal (or bias) of capitalist societies. Together with those offering optimistic views of the Information Society, economists have sought to attribute increasing productivity to technological innovation, especially in ICTs. Because these technologies can be employed in many different contexts to improve productivity, Bresnahan and Trajtenberg (1995: 84) coined the term General Purpose Technologies (GPT) which has been taken up by others (e.g. Helpman, 1998; Lipsey et al., 2005) to explore processes of growth and development. Bresnahan and Trajtenberg (1995: 84) argued that, 'most GPTs play the role of "enabling technologies", opening up new opportunities rather than offering complete, final solutions'. Other economists have extended the use of the GPT terminology to identify earlier technologies with a pervasive effect such as the steam engine and electricity. David (1990), for example, suggested that there might be similarities in productivity growth between the eras of electrification and computerization.

The implications for firms, industries, national economies and the global economy of the convergence of digital ICTs and their application to create global networks and new means of economic and social interaction, are still being worked out. Pronounced differences in the economic performance of different countries cannot be explained fully by their levels of investment in new digital technologies. For example, the implications of investment in these technologies for changes in productivity are not straightforward. Solow (1987: 36) challenged his colleagues by declaring 'you can see the computer age everywhere but in the productivity statistics', prompting contributions from economists such as Abramovitz and David (1996), Gordon (2004), Jorgenson and Stiroh (2000) on the sources of productivity improvement. Other economists, such as Brynjolfsson and Hitt (2003) in the United States and Bloom and Van Reenen (2007) in Britain, are conducting enterprise-level studies of productivity to account for aggregate patterns of productivity change and to identify the contribution of specific business processes to performance. The outcome of this work is still subject to considerable debate and uncertainty as to whether explanations for variable performances between countries and at the firm level, between firms, are robust.

Although much of this research is quantitative, there is a strand of research in the economics literature that adopts a multi-method approach and is somewhat more critical of the dominant vision. This is represented, for example, by the work of Freeman (1982, 1988) and others, including Freeman and Soete (1990a,b, 1997) and Perez (1985) which has been influential in debates about knowledge economies and the way technological innovations lead to shifts in technological 'style' or in 'techno-economic paradigm'. The work of these authors has sought to explain how changes in micro-electronics technologies have destabilizing effects on the economy and has contributed to research on how technological change influences productivity and economic growth. However, they also argue that as a new technology spreads, a new 'common sense' takes hold which begins to pervade all aspects of individual and institutional endeavour. Change is disruptive, resulting in the obsolescence of skills and qualifications, the dislocation of people, and wealth creation for some and not for others. Therefore, this needs a policy response. Despite their call for an understanding of 'common sense' dynamics and their suggestions that bridges be built into other disciplines, there have been virtually no links between this research and work in the media and communications field, the present author being an exception.

Economists such as Antonelli et al. (2000) have provided accounts of the relationship between knowledge production and ICT, signalling the importance of the co-production of knowledge and its need for sophisticated human capabilities. They argue that information cannot be transformed into useful knowledge without a process of learning. In the economics literature there is debate about whether the possibility of codifying knowledge using advanced digital technologies means that learning can now occur more easily, assuming the learner has the appropriate literacy and access to knowledge repositories. Some of those working in this field of economics argue that tacitness (knowing more than one can say) continues to matter and that a rapid expansion, on a global basis, of the opportunities for learning will not occur simply as a result of innovations in ICTs, at least not in a way that generally enhances opportunities for the poor. The issue here is whether digital technologies can be used to represent knowledge as information, that is, to store and reproduce information in a way that will enable more people to gain knowledge without the benefit of interaction with others who are already deemed to be knowledgeable. This issue has been examined by Steinmueller (2000) and by Cowan et al. (2000), who argue that methods for such 'knowledge codification' exist

and can be extended, while Johnson et al. (2002) are more sceptical that digital codification of information will make a substantial difference to learning and, ultimately, to knowledge creation and wealth creating opportunities for the poor.

A much more cautious and limited set of expectations about the implications of The Information Society is evident in Murdock and Golding's (1989) work. They pointed out that more market-oriented communication and information systems are being developed, with the promise to the public that this will enlarge the space for people to make choices about their lives and to exercise control in ways that would be both liberating and empowering. They suggested that the information and communication system is unlikely to be liberating or empowering unless commercial forces can be held at bay. Similarly, Feenberg (1992: 319) suggested that these technologies embody a 'subversive rationalization'; that is: 'individuals who are incorporated into new types of technical networks have learned to resist through the net itself in order to influence the powers that control it. This is not a contest for wealth or administrative power, but a struggle to subvert the technical practices, procedures, and designs structuring everyday life'.[7]

Garnham (1997) turned to the economist, Sen's (1999) work on people's capabilities and the choices they exercise in their lives, as the basis for decisions about whether to intervene in the marketplace. He suggested that as connectivity to networks and equitable access are becoming more essential to individuals' abilities to conduct their lives, there will often be a requirement for some kind of regulatory intervention in the interest of fairness and equity. Garnham's analysis was concerned with telecommunication policy and regulation. However, it has been much more difficult to make a case for regulatory intervention following similar lines of argument in the case of the Internet protocol (Couldry 2003; Mansell 2002).

The possibility of formal regulation of the Internet in western countries is rarely seen as attractive because of the view that development of the Internet requires that it should flourish in an unrestricted way. The regulatory literature in this area is dominated by claims about the importance of 'Net neutrality', rather than by a concern for the public's interest, as discussed by Bar et al. (2000) and by Owen (2007) in the United States. Net neutrality refers to the idea that the Internet should be available to all on a uniform, non-discriminatory basis without differentiation in terms of quality of service; that is, it should remain a transparent, end-to-end network. They took issue with this view, observing that it is reminiscent of the argument that telecommunication companies should serve as common carriers without interest in content. McChesney (1996) has similarly argued that the Internet is not neutral and that indeed there is a need for regulatory intervention to ensure it is not overly commercialized. There is interest in self-regulation by Internet service providers, such as those encouraged by the United Kingdom's Internet Watch Foundation[8] which aims to reduce illegal child abuse images and other threats.[9] But for reasons which become clear in the next section, the insights from work informed by those concerned with the implications of The Information Society for everyday life have rarely filtered into the forums for debate over the need for formal or informal regulatory interventions.

4. Everyday Life in Information Societies

Research carried out on The Information Society in the 1980s and early 1990s often exhibited a fascination with the virtual, neglecting the offline environments in which

participants in online communities live their lives. Research building on psychoanalytical traditions and what is referred to as the 'everyday life' research tradition provided welcome counters to this fascination with online spaces with little connection to the material circumstances of everyday life. Countless virtual community websites now cater to an enormous variety of human interests. Blogging has created opportunities for online publishing and discussion and online gaming, and the use of avatars in virtual spaces, such as Second Life, and numerous online art sites, mean that there is an almost limitless opportunity for online experience, assuming a user has the access and resources required to enter websites and participate.

One major line of research focused on the way interactions in 'cyberspace' or electronic spaces, such as those supported by the Internet and Web 2.0 developments, influence identity construction. Sherry Turkle's (1995) pathbreaking work, *Life on the Screen,* focused on the implications of the multiple identities that avatars may assume on behalf of their creators. Her early studies of users of Multi-User Dungeons (MUDs) were informed by psychoanalytic theory and she found that users of online games were likely to cycle through different characters and genders as they adopted flexible identities. More recent work, by Steinkuehler and Williams (2006), for example, has examined 'third spaces' where identity creation occurs online.

There are disputes about the implications of virtual engagement for social experience offline and for intra-psychic experience. An American psychiatrist, Block (2008: 306), for example, has argued that 'Internet addiction appears to be a common disorder that merits inclusion in DSM-V [the American Psychiatric Association's manual listing mental illnesses and diagnoses]'. He acknowledges that there are no reliable data in the United States, drawing instead on evidence of a link between intense Internet use and rates of suicide and depression in South Korea and China. Cooper et al.'s (2000) reviews of studies of online sexual compulsivity, however, suggest that such behaviour should not be perceived as a major problem and, similarly, Kraut et al. (2002) found, for the United States, that intensive use of the Internet is generally consistent with perceptions of well-being. Nevertheless, these findings have been called into question[10] and the jury is out on the balance between positive and negative intra-subjective experiences of virtual spaces and their consequences for people's everyday lives. However, the connections between these experiences and offline experience are not very clear.

Another influential area of research involves analysis of the connections between public action and mediated life online, building on the tradition of 'everyday life' studies in sociology and focusing on the strategies and tactics of what Certeau called 'ways of operating'.[11]

> 'These "ways of operating" constitute the innumerable practices by means of which users reappropriate the space organized by techniques of sociocultural production …to bring to light the clandestine forms taken by the dispersed, tactical, and make-shift creativity of groups or individuals already caught in the nets of "discipline"' (Certeau, 1984: xiv-xv)

Lefebvre (1962/2002: 4) observed that 'there can be no knowledge of the everyday without knowledge of society in its entirety'. In the field of media research, Silverstone (1999) drew on this tradition to analyse the mediation of people's lives by older and newer media, with the aim of understanding both the detailed nature of their experiences as well as the wider politics and societal consequences. Silverstone (1994) and Morley and

Silverstone (1990) and Silverstone and Haddon (1996), developed these ideas to focus on people's strategies and tactics for accommodating and resisting the new digital technologies.

Like Martin-Barbaro (2002: 622) who understands that 'the network society is not, then, purely a phenomenon composed of technological connections, but rather the systemic disjunction of the global and the local', Silverstone (2002, 2005a,b) was interested in how we can relate the local to the global in societies where individualization seems to take increasing precedence over communal interests, arguing that it is through everyday experience of mediated relationships that a common humanity is created. The concept of mediation was used here to refer to the way meaning and value are constructed through interaction with technology and media content and technology.[12] He argued that 'mediated connection and interconnection define the dominant infrastructure for the conduct of social, political and economic life across the globe' (Silverstone 2007: 26) and that this dominance has profound ethical and moral implications which call for action to ensure that disadvantaged people are not excluded or harmed.

Again, as in the preceding domains of research touched upon in this paper, there are few instances of convergence between the different approaches in the literature.

5. What might be done?

Notwithstanding the opportunities created by the spread of digital technologies, the increasingly global reach of the Internet and mobile telecommunication networks and open collaborative models for innovation and learning, there is concern that these developments also are giving rise to new sources of inequality. Many authors argue that the digital divide terminology emphasises arbitrary dualisms (information haves and have nots) which do not address the structural dynamics and power relations in a given society that influence the terms by which people may be able to participate in their information societies. Although Warschauer's (2002, 2004) work has been influential in calling for an analytical framework that focuses on social inclusion, rather than on arbitrary divides, and van Dijk's (2005) and Norris's (2001) work highlights the need for comparative research and studies to address the shortcomings of digital divide research, this work is rarely cited in the economics discipline by those working on Information Society issues. However, it is the economics traditions of research that are cited and which inform most international policy contexts in which The Information Society vision is debated. And many of the policy measures at the national level aimed at addressing divides are influenced by neo-liberal assumptions about markets and regulation, a point made very clearly by Lugo and Sampson (2008) in their discussion of 'other pathways' to overcome exclusion (see also Mansell 1998, 2001, 2006).

What possibilities exist to bring the more critical insights into the framework of policy debate? Hamelink locates the debates about The Information Society, democracy, participation, and choice in the context of a concern for the human condition:

> 'In the spirit of a discursive process, all stakeholders should design visions for possible futures that either enlarge dependence, increase vulnerability and expand uncertainty or *diminish these human features and strengthen human autonomy, integrity and security*' (Hamelink, 2006: 394, emphasis added).

This perspective is often perceived as being a step too far for by those with an interest in economic analysis as the economic drivers of The Information Society. Contributors to debates about the need for multiple stakeholders to envisage new online spaces for democratic dialogue and to act to ensure that they develop, vacillate between optimism and pessimism as a result. In policy contexts, optimism about the potential of ICT to be used to reduce poverty by enabling new online forms of entrepreneurial wealth creation, led to the World Summit on the Information Society (WSIS) in 2003 and 2005. Following initial hope that this United Nations-sponsored forum might result in action to alleviate human suffering and inequality, after its first phase in 2003 scholars such as Hamelink (2004) warned that exclusion of civil society representatives and critical scholars meant that the processes and spaces for dialogue that had been created were unlikely to achieve such action. Other scholars such as Calabrese (2005), were more optimistic, but many remained sceptical about the democratic potential of online sites as suggested by the work of Splichal (2006) and Ogbondah (1997), often because of their concern about the hegemony of the dominant vision of The Information Society.

The continuing dominance of paradigms of research that feed The Information Society vision without criticizing its assumptions and the need to find improved means of ensuring that ICTs are put into service in ways that are enabling, rather than disabling, means that the research community cannot simply turn its back either on the domains of policy or on practices where the vision plays itself out in people's lives. Information society policies are being developed by different stakeholders to support a range of important goals and aspirations associated with the wider policy agendas of many low income countries. Although these policies have become relatively well-accepted as components of broader policy making initiatives over the past decade – and despite the fact that ICTs are acknowledged as a target area in the Millennium Development Goals,[13] they are frequently underpinned by the rhetoric that accompanies the mainstream vision. I suggest, however, that there is some scope for a renewed debate about how best to underpin these initiatives and to draw upon our research traditions to achieve a more critical discussion of The Information Society vision and its alternatives.

It is important to emphasize that any discussion of research that might inform policy needs to understand the The Information Society concept as being a very fluid one. This is essential if we are to overcome the risk that research becomes caught between 'a hegemonic Eurocentrism, and a counter-hegemonic but reactionary epistemological nativism' (Dirlik 2004: 146). Nevertheless, it seems reasonable to take the position that a high priority for research aimed at developing a critique of The Information Society today is that it should challenge the paradigms that sustain the vision of a homogeneous Information Society. A helpful starting position is to focus on the values embedded in The Information Society policies and practices, emphasising a critique of the continuing tendency to privilege technology and to foster a narrow set of market-led values.

In re-imagining information societies that are more likely to foster enabling communicative environments that contribute to greater efficacy, social justice, and well-being, there needs to be a dialogue aimed at encouraging translations between different meanings and interpretations of the goals of information societies. There needs to be a stronger effort to bring the insights from research in the 'everyday life' and psychoanalytical traditions to the attention of policy makers. There has been critical analysis of The Information Society vision as we have seen in the foregoing, and in the development field, since the work of Quebral (1975). But, today as discussed in this paper, mainstream research in informed increasingly either by the mainstream economics

tradition or by a 'social marketing' perspective which emphasises the ICT user as a consumer rather as a citizen.[14]

Instead, research arguably is needed to understand the role of information societies in fostering mutual understanding. ICT-mediated social systems need to be examined using perspectives that facilitate debates about the values that should be at the core of the initiatives by stakeholders to build inclusive information societies. At very least, there is a need to prise open debates in a way that acknowledges the values being contested and the fact that people need to be empowered to make choices with respect to how their information societies should be organised.[15] Following Sen (1999), research needs to emphasise investigation of the multiple ways in which information societies could contribute to the well-being and achievements of human beings.[16] Policy makers need to be provided with research findings that help them to depart from the mainstream perspectives that envisage linear, technology-driven approaches to information societies.

What are the priority areas for research given the observations that emerge from this brief review of the literature? I emphasise three here – renewed efforts to address human rights issues, more effort to address access issues in creative ways, and more attention to what it means to talk about participatory information society initiatives.

In the first area – human rights - an emphasis on human well-being within information societies means giving more attention to how, and to what extent, information and communication-related rights are being respected in today's information societies. This entails a discussion about values, responsibilities, and actions. The adoption of the United Nations Charter in 1945 and the Universal Declaration of Human Rights (UN UDHR) in 1948 obliged all States to establish, protect and enforce human rights at the global, regional, national and local levels. In particular, Article 19 of the UN UDHR declares that: 'Everyone has the right to freedom of expression and opinion; this right includes the freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers'.

There is a strong relationship between recognition of the inherent dignity and equal and inalienable rights of all people and their right or entitlement to participate in information societies.[17] There needs to be a deeper analysis of the legal and other conditions that are constraining different social groups from attaining the capabilities for shaping their information societies. We need to understand how such issues are understood from different standpoints in different countries and regions and, in particular, how information and communication (including media) production influences our understanding of, and respect for, others.

In the second area – access - in line with an emphasis on well-being, research on issues of access needs to be combined with work on capacity building with respect to the literacies required for functioning in society. There continue to be issues around the accessibility and affordability of communication and information environments of all kinds, but there are also issues of access to *relevant* content, not only by elites, but by all people. Access issues need to be rethought in terms of a wide range of communication and information capabilities and the relationships between market and non-market arrangements for enabling learning to build the relevant capabilities.

Finally, in the third area – participatory information societies - research is needed to understand the sustainability of different forms of participation by individuals and civil

society members and the extent to which this can contribute to democratic participation. Early research in this area was informed by those more persuaded by a pluralist approach. From the early days of the Internet, much of the research in this area has embraced optimism that 'real world' democracy can be translated into online democracy: 'the public should be able to conduct meetings in cyberspace in ways that are as civil and democratic as in the real world' (Dutton, 1996: 288). Dutton's early perspective on the democratizing potential of ICT is echoed in Lessig's (1999, 2006) argument that software code, embedded in networks, sets limits and constrains the norms established for information exchange and communication. However, there is work on critical theories of learning and on the role of culture, power and language within dispersed networked communities, as in the case of Ribeiro's (1997, 1998) emphasis on the role of ICTs in enabling 'witnessing' as a form of political action:

> 'Witnessing from a distance is not new; but, in the age of information dominated by immediacy of image, it operates more profoundly than ever before. Witnessing – besides being an existential force – activates different forms of commitment embedded in moral and sometimes religious values'.

Ribeiro emphasises that the outcomes of cyberactivism are governed by offline power relationships – note only by the code embedded in networks - enacted in the 'real', rather than the cyber world. Similarly, Karim (2007) focuses on the potential for virtual communities to engage diasporas to create new connections that may lead to the possibility of 'globalization from below'. In addition, where ICTs – whether radio or the Internet - are playing an important role in contexts where there is a need to mediate conflict, research has shown that it is not appropriate to assume that there is an automatic relationship between the presence of a free and independent media or ICT sector and the strengthening of civil society and democracy in fragile states (James 2004; Putzel and van der Zwan 2007). Whether the opportunities created by the spread of these technologies make profound differences in people's lives and whether they are understood as being helpful depends to a large extent upon whether we, as members of the research community who challenge the dominant vision, find ways to get our concerns and results brought to the attention of policy makers.

6. Conclusion

The last three decades have seen the publication of many reports outlining recommendations for what have come to be known as information societies. In 1980 UNESCO published, *Many Voices, One World*, the report of its International Commission for the Study of Communication Problems also known as the MacBride Report (see also Mansell and Nordenstreng 2006; Carlsson 2005). In the 1990s, and continuing into the present, numerous countries have been encouraged to prepare strategies for reducing inequality in access to The Information Society. This work has been supported by many governmental and intergovernmental agencies. At the global level, the Action Plan of the World Summit on the Information Society[18] and the initiative of GAID (Global Alliance for ICT and Development),[19] are two highly visible interventions. For the most part, given the market-led emphasis of most information society initiatives, the leading theoretical standpoints that are favoured are those concerned with the diffusion of innovations in ICTs and with the insights about information and knowledge offered by the mainstream of the economics discipline, at least in terms of social science contributions. If this is to change, it must become attractive to those with decision

making power to become advocates of the idea that technologies only provide the stage and some of the sets for the enactment of the cultural, social, economic and political aspects – or the 'life and times' of information societies.

What evidence is there in recent years of assimilation of more critical perspectives on the part of the stakeholders who promote The Information Society vision? While the tendency to favour the search for a universal model of The Information Society by fostering market-led arrangements and values and by privileging technologies over human aspirations and needs, remains very strong especially in the higher echelons of policy making, there are some signs that attention to the causes of inequality in society and to how these filter into specific information society initiatives may be growing. Some stakeholders in the donor communities are becoming interested in more critical, context-sensitive and enabling approaches. This is the case, for example, in the Dutch-funded International Knowledge Management Emergent programme, a five year project that puts issues of power, information and knowledge at the heart of its work.[1]

The proponents of research in the critical traditions of scholarship on The Information Society have struggled to convince policy makers that the interpenetration of asymmetrical relationships within information societies perpetuate inequality and injustice. The virtual spaces enabled by the Internet provide new opportunities for people to represent their views and to participate online in dialogues. The uncertainty over these developments is whether these new voices will be heard and responded to by powerful actors who have an interest in closing the resistant voices down.

In his most recent work, Castells (2009 forthcoming) elaborates on his ideas about 'mass self-communication' which he considers in the context of existing modes of communication. He is optimistic about the possibilities that political change may occur through the reprogramming of communication networks developed by social movements and their agents, enabling new values and interests to come to the attention of the public. If the power of new ideas produces social action and resistance to the coercive power of concentrated and dominant conventional media and other powerful actors, then there is hope for social change. He argues that 'the common culture of the global network society is a culture of protocols of communication enabling communication between different cultures on the basis not of shared values but of the sharing of the value of communication' (manuscript p. 77). He draws on experimental results on cognition and meaning-making to suggest that there are strong associations between emotion and action or, to put it another way, between our consumption of mediated representation of all kinds and our capacity for learning new values and our capacity for acting upon them. Castells' optimism regarding the ways in which networked insurgent communities can change 'hearts and minds' is tempered by his understanding of the way dominant actors are seeking to create new electronic enclosures to contain these communities.

The Information Society enthusiasts hope for a better world based on their faith in technological progress and innovations in information processing and organizational control systems. Others such as Poster (1990, 2006) note that information societies will 'not necessarily reproduce neoimperialisms'. It is right to avoid determinations, but I argue that it continues to be the economics discipline with its emphasis on the dynamics of knowledge-based economies – which accentuates the role of market values - that is

[1] See http://ikmemergent.wordpress.com/

prevailing in forums for debate on these issues. The result is that The Information Society vision continues to flourish.

The research trajectory that I have emphasised in the two preceding sections is intended to encourage a focus on transnational approaches to social change and to the potential for transformations and shifts in values that might enhance human well-being. It aspires to inclusivity without privileging certain disciplines and without presuming that inclusivity will be valued by everyone. It is intended to be flexible and to encourage context-specific and comparative research. Overall, we need a renewed commitment to offering critical assessments of standpoints that do not adequately reflect the necessary conditions for achieving well-being in information societies. The results of such research are likely to yield counterintuitive insights which, in turn, may influence policy decisions and actions in new ways.

References

Abramovitz, M. and David, P. A. (1996). Technological Change and the Rise of Intangible Investments: The US Economy's Growth-path in the Twentieth Century. In Foray, D. and Lundvall, B.-Å. (Eds.) *Employment and Growth in the Knowledge-based Economy* (pp. 35-60). Paris: OECD.

Antonelli, C., Geuna, A., and Steinmueller, W. E. (2000). Information and Communication Technologies and the Production, Distribution and Use of Knowledge. *International Journal of Technology Management, 20*(1-2), 72-94.

Bar, F., Cohen, S., Cowhey, P., Delong, B., Kleeman, M., and Zysman, J. (2000). Access and Innovation Policy for the Third Generation Internet. *Telecommunications Policy, 24*(6/7), 489-518.

Bateson, G. (1951). Information and Codification: A Philosophical Approach. In Ruesch, J. and Bateson, G. (Eds.) *Communication: The Social Matrix of Psychiatry* (pp. 168-212). New York: Norton & Co.

Bell, D. (1973). *The Coming of Post-Industrial Society: A Venture in Social Forecasting*. New York: Basic Books.

_____ (1980). The Social Framework of the Information Society. In Forester, T. (Ed.) *The Microelectronics Revolution* (pp. 500-549). Oxford: Blackwell.

Beniger, J. R. (1986). *The Control Revolution: Technological and Economic Origins of the Information Society*. Cambridge MA: Harvard University Press.

_____ (1990). Conceptualizing Information Technology as Organization, and Vice Versa. In Fulk, J. and Steinfield, C. (Eds.), *Organization and Communication Technology* (pp. 29-45). Newbury Park: Sage Publications.

Block, J. J. (2008). Issues for DSM-V: Internet Addition. *American Journal of Psychiatry, 165*(3): 306-307.

Bloom, N. and Van Reenen, J. (2007). Measuring and Explaining Management Practices Across Firms and Nations. *Quarterly Journal of Economics, 122*(4): 1351-1408.

Boles, S. C., Cooper, A., and Osborne, C. S. (2004). Variations in Internet-related Problems and Psychosocial Functioning in Online Sexual Activities: Implications for Social and Sexual Development in Young Adults. *CyberPsychology & Behavior, 7*(2): 207-230.

Bresnahan, T. F. and Trajtenberg, M. (1995). General Purpose Technologies "Engines of Growth?" *NBER Working Paper Series, W4148*, np.

Brynjolfsson, E. and Hitt, L. M. (2003). *Computing Productivity: Firm-Level Evidence.* Cambridge MA: MIT.

Calabrese, A. (2005). Global Activism, Global Media. *European Journal of Communication, 20*(4): 555-559.

Carlsson, U. (2005) 'From NWICO to global governance of the information society', in O. Hemer and T. Tufte (eds) *Media and Glocal Change: Rethinking Communication for Development,* Buenos Aires: NORDICOM and CLACSO, pp. 193-214.

Castells, M. (1996). *The Information Age: Economy, Society and Culture Volume I: The Rise of the Network Society*. Oxford: Blackwell.

_____(1997). *The Information Age: Economy, Society and Culture Volume II: The Power of Identity*. Oxford: Blackwell.

_____ (1998). *The Information Age: Economy, Society and Culture Volume III: End of Millennium*. Oxford: Blackwell.

_____ (2009 forthcoming) *Communication Power*, Oxford: Oxford University Press.

Certeau, M. de. (1984). *The Practice of Everyday Life,* tranlated by S. Rendall. Berkeley CA: University of California Press.

Clark, A. (2005). 'The Capability Approach: Its Development, Critiques and Recent Advances', GPRG-WPS-032, Global Poverty Research Group, at www.gprg.org.

Cooper, A., Delmonico, D. L., and Burg, R. (2000). Cybersex Users, Abusers, and Compulsives: New Findings and Implications. *Sexual Addiction and Compulsivity, 7*(1-2): 5-29.

Couldry, N. (2003). Digital Divide or Discursive Design? On the Emerging Ethics of Information Space. *Ethics and Information Technology, 5*(2): 89-97.

Cowan, R., David, P. A., and Foray, D. (2000). The Explicit Economics of Knowledge Codification and Tacitness. *Industrial and Corporate Change, 9*(2): 211-254.

David, P. A. (1990). The Dynamo and the Computer: An Historical Perspective on the Modern Productivity Paradox. *The American Economic Review, 80*(2): 355-361.

_____and Foray, D. (2003). Economic Fundamentals of the Knowledge Society. *Policy Futures in Education, 1*(1): 20-49.

De Landa, M. (1991). *War in the Age of Intelligent Machines*. New York: Zone Books.

de Sola Pool, I. (1974). The Rise of Communications Policy Research. *Journal of Communication, 24*(2): 31-42.

Dirlik, A. (2004) 'Spectres of the Third World: Global Modernity and the End of the Three Worlds', *Third World Quarterly* 25(1): 131-148.

Drucker, P. F. (1969). Knowledge Society. *New Society, 13*(343): 629-631.

Duff, A. S. (2000). *Information Society Studies*. London: Routledge.

Dutton, W. H. (1992). Political Science Research on Teledemocracy. *Social Science Computer Review, 10:* 505-523.

_____ (1996). Network Rules of Order: Regulating Speech in Public Electronic Fora. *Media Culture and Society, 18*(2): 269-290.

Feenberg, A. (1992). Subversive Rationalization, Technology, Power, and Democracy. *Inquiry-an Interdisciplinary Journal of Philosophy, 35*(3-4): 301-322.

Freeman, C. (1988). Information Technology and the New Economic Paradigm. In Schutte, H. (Ed.), *Strategic Issues in Information Technology: International Implications for Decision Makers* (pp. 159-175). Berkshire: Pergamon Infotech.

_____Clarke, J. and Soete, L. (1982). *Unemployment and Technical Innovation: A Study of Long Waves and Economic Development*. Westport CT: Greenwood Press.

_____and Soete, L. (1990a). Fast Structural Change and Slow Productivity Change: Some Paradoxes in the Economics of Information Technology. *Structural Change and Economic Dynamics, 1*(2): 225-242.

_____and Soete, L. (1990b). Information Technology and the Global Economy. In Berleur, J., Clement, A., Sizer, R. and Whitehouse, D. (Eds.), *The Information Society: Evolving Landscapes,* (pp.278-294). New York-Heidelberg: Springer-Verlag and Captus.

_____and Soete, L. (1997). *The Economics of Industrial Innovation, Third Edition*. London: Pinter A Cassel Imprint.

Garfinkel, H. (1967). *Studies in Ethnomethodology*. Englewood Cliffs NJ: Prentice-Hall.

Garnham, N. (1997). Amartya Sen's "Capabilities" Approach to the Evaluation of Welfare: Its Application to Communications. *Javnost-the Public, 4*(4): 25-34.

_____ (2000). *Emancipation, the Media and Modernity: Arguments about the Media and Social Theory*. Oxford: Oxford University Press.

Goffman, I. (1959). *The Presentation of Self in Everyday Life*. London: Penguin Books.

Golding, P. and Murdock, G. (1978). Theories of Communication and Theories of Society. *Communication Research, 5*(3): 339-356.

Gordon, R. J. (2004). Five Puzzles in the Behavior of Productivity, Investment, and Innovation. In Lopez-Claros, A. and Sala-i-Martin, X. (Eds.), *The Global Competitiveness Report 2003-04* (pp. 117-135). New York and Oxford: Oxford University Press.

Haddon, L. (2004). *Information and Communication Technologies in Everyday Life*. Cambridge: Berg.

Hamelink, C. (2004). Did the WSIS Achieve Anything at All? *Gazette: The International Journal for Communication Studies, 66*(3-4): 281-290.

_____(2006). Rethinking ICTs: ICTs on a Human Scale. *European Journal of Communication, 21*(3): 389-396.

Helpman, E. (Ed.). (1998). *General Purpose Technologies and Economic Growth*. Cambridge MA: MIT Press.

Innis, H. A. (1950). *Empire and Communication*. Toronto: Toronto University Press.

_____ (1951). *The Bias of Communication*. Toronto: University of Toronto Press.

James, B. (ed) (2004) *Media Conflict Prevention and Reconstruction*, Paris: UNESCO.

Johnson, B., Lorenz, E., and Lundvall, B.-Å. (2002). Why All This Fuss about Codified and Tacit Knowledge? *Industrial and Corporate Change, 11*(2): 245-262.

Jorgenson, D. W. and Stiroh, K. J. (2000). Raising the Speed Limit: U. S. Economic Growth in the Information Age. *Brookings Papers on Economic Activity, 31*(1): 125-211.

Karim, K. H. (2007). Nation and Diaspora: Rethinking Multiculturalism in a Transnational Context. *International Journal of Media and Cultural Politics, 2*(3): 267-282.

Kotler, P. and Zaltman, G. (1971) 'Social Marketing: An Approach to Planned Social Change', *Journal of Marketing*, 35(3): 3-12

Kraut, R., Kiesler, S., Boneva, B., Commings, J., Helgeson, V., and Crawford, A. (2002). Internet Paradox Revisited. *Journal of Social Issues, 58*(1): 49-74.

Lash, S. M. (2002). *Critique of Information* London: Sage.

Lasswell, H. D. (1948). The Structure and Function of Communications in Society. In Bryson, L. (Ed.), *The Communication of Ideas* (pp. 37-51). New York: Harper.

_____ (1972). Communications Research and Public Policy. *The Public Opinion Quarterly, XXXVI*(3): 301-310.

Lazarsfeld, P. F. and Merton, R. K. (1948). Mass Communication, Popular Taste and Organized Social Action. In Bryson, L. (Ed.), *The Communication of Ideas* (pp. 95-118). New York: Harper.

Lefebvre, H. (1962/2002). *Critique of Everyday Life*. New York: Verso.

Lessig, L. (1999). *Code and Other Laws of Cyberspace*. New York: Basic Books.

_____ (2006). *Code: Version 2.0*. New York: Basic Books.

Lewis, P. W. (1948). *America and Cosmic Man* New York: Doubleday.

Lipsey, R. G., Carlaw, K. I., and Bekar, C. T. (2005). *Economic Transformations: General Purpose Technologies and Long-term Economic Growth*. Oxford: Oxford University Press.

Lugo, J. and Sampson, T. (2008). E-Informality in Venezuela: The "Other Path" of Technology. *Bulletin of Latin American Research, 27*(1): 102-118.

Luhmann, N. (1996). *The Reality of Mass Media,* translated by K. Cross. Stanford CA: Stanford University Press.

Lukács, G. (1920/1971). *History and Class Consciousness*. London: Merlin Press.

Lyon, D. (1986). From Post-Industrialism to Information-Society - A New Social Transformation. *Sociology, 20*(4), 577-588.

Machlup, F. B. (1962). *The Production and Distribution of Knowledge in the US Economy*. Princeton NJ: Princeton University Press.

_____ (1980-84). *Knowledge: Its Creation, Distribution and Economic Significance, 4 Volumes*. Princeton NJ: Princeton University Press.

Malik, S. (2005). Information and Knowledge. *Theory Culture and Society, 22*(1): 29-49.

Mansell, R. (2001). Digital Opportunities and the Missing Link for Developing Countries. *Oxford Review of Economic Policy, 17*(2): 282-295.

_____ (2002). From Digital Divides to Digital Entitlements in Knowledge Societies. *Current Sociology, 50*(3): 407-426.

_____ (2006). Ambiguous Connections: Entitlements and Responsibilities of Global Networking. *Journal of International Development, 18*(4): 1-13.

_____(Ed.) (2009 forthcoming) *The Information Society (Critical Concepts in Sociology*, 4 Volumes. London: Routledge

_____ and Nordenstreng, N. (2006) 'Great Media and Communication Debates – WSIS and the MacBride Report, *Information Technologies and International Development*, 3(4): 15-36.

_____ and Silverstone, R. (Eds.). (2002). Inside the Communication Revolution: New Patterns of Social and Technical Interaction. Oxford: Oxford University Press.

_____ and Steinmueller, W. E. (2000). *Mobilizing the Information Society: Strategies for Growth and Opportunity*. Oxford: Oxford University Press.

_____ and Wehn, U. (Eds.). (1998). *Knowledge Societies: Information Technology for Sustainable Development*. Oxford: Published for the United Nations Commission on Science and Technology for Development by Oxford University Press.

Manyozo, L. (2008) 'Communication for Development: An Historical Overview', report prepared for UNESCO and the IAMCR 50th Anniversary Conference, July, Paris, at http://portal.unesco.org/ci/en/ev.php-URL_ID=26268&URL_DO=DO_TOPIC&URL_SECTION=201.html

Martin-Barbero, J. (2002). Identities: Traditions and New Communities. *Media Culture and Society, 24*(5): 621-641.

Masuda, Y. (1980a). Computopia: Rebirth of Theological Synergism. In Masuda, Y. (Ed.), *The Information Society as Post-Industrial Society* (pp. 146-154). Tokyo: Institute for the Information Society and 1981 by World Future Society.

_____ (1980b). Emerging Information Society in Japan. In Masuda, Y. (Ed.), *The Information Society as Post-Industrial Society* (pp. 3-22). Tokyo: Institute for the Information Society.

Mattelart, A. (2002). An Archaeology of the Global Era: Constructing a Belief. *Media Culture and Society, 24*(5): 591-612.

May, C. (2002). *The Information Society: A Sceptical View*. Cambridge: Polity.

McChesney, R. W. (1996). The Internet and US Communication Policy-Making in Historical and Critical Perspective. *Journal of Communication, 46*(1), 98-124.

McLuhan, H. M. (1960). Effects of the Improvements of Communication Media. *Journal of Economic History, 20*(4), 566-575.

_____ (1962). *The Gutenberg Galaxy: The Making of Typographic Man*. Toronto: University of Toronto Press.

Menou, M. J., and Taylor, R. D. (2006). A "Grand Challenge": Measuring Information Societies. *The Information Society, 22*(5): 261-267.

Miles, I. (2005). Be Here Now. *Info, 7*(2): 49-71.

_____and Gershuny, J. (1986). The Social Economics of Information Technology. In Ferguson, M. (Ed.), *New Communication Technologies and the Public Interest* (pp. 18-36). London: Sage.

Morley, D. and Silverstone, R. (1990). Domestic Communication - Technologies and Meanings. *Media Culture and Society, 12*(1): 31-55.

Murdock, G. (1993). Communications and the Constitution of Modernity. *Media Culture and Society, 15*(4): 521-539.

_____and Golding, P. (1989). Information Poverty and Political Inequality - Citizenship in the Age of Privatized Communications. *Journal of Communication, 39*(3): 180-194.

Norris, P. (2001). *Digital Divide: Civic Engagement, Information Poverty and the Internet Worldwide*. Cambridge: Cambridge University Press.

OECD. (1996). *The Knowledge-based Economy*. Paris: OECD, GD(96)102.

Ogbondah, C. W. (1997). Communication and Democratization in Africa. *International Communication Gazette, 59*(4): 271-294.

Owen, B. M. (2007). The Net Neutrality Debate: Twenty Five Years after United States v. AT&T and 120 Years after the Act to Regulate Commerce. *SIEPR Discussion Papers, 06-15*, np.

Palandri, M. and Green, L. (2000). Image Management in a Bondage, Discipline, Sadomasochist Subculture: A Cyber-Ethnographic Study. *CyberPsychology & Behavior, 3*(4): 631-641.

Perez, C. (1985). Microelectronics, Long Waves and World Structural-Change - New Perspectives for Developing-Countries. *World Development, 13*(3), 441-463.

Porat, M. U. and Rubin, M. R. (1977). *The Information Economy, Nine Volumes*. Washington DC: Department of Commerce Government Printing Office.

Poster, M. (1990). *The Mode of Information: Poststructuralism and Social Context*. Chicago IL: University of Chicago Press.

_____ (2006). *Information Please: Culture and Politics in the Digital Age*. Durham NC: Duke University Press.

Putzel, J. and van der Zwan, J. (2007) *Why Templates for Media Development do not work in Crisis States: Defining and understanding media development strategies in post-war and crisis states*, LSE Crisis States Research Centre (CSRC), London.

Quebral, N. (1975). 'Development Communication'. In Jamias, J. (ed) *Readings in Development Communication,* (pp. 1-11). Laguna: UPLB College of Agriculture.

Ribeiro, G. L. (1997). Transnational Virtual Community? Exploring Implications for Culture, Power and Language. *Organization, 4*(4): 496-505.

_____ (1998). Cybercultural Politics, Political Activism at Distance in a Transnational World. In Alvarez, S., Dagnino, E. and Escobar, A. (Eds.), *Cultures of Politics, Politics of Cultures: Re-visioning Latin American Social Movements* (pp. 325-352). Boulder CO: Westview Press.

Robertson, D. S. (1990). The Information Revolution. *Communication Research, 17*(2): 235-254.

Robins, K. and Webster, F. (1987). The Communications Revolution - New Media, Old Problems. *Communication, 10*(1): 71-89.

Schement, J. R. (1990). Porat, Bell, and the Information-Society Reconsidered - the Growth of Information Work in the Early 20th-Century. *Information Processing and Management, 26*(4): 449-465.

Schiller, H. (1980). Whose New International Economic and Information Order? *Communication, 5*, 299-314.

_____ (1981). *Who Knows? Information in the Age of the Fortune 500*. Norwood NJ: Ablex.

_____(1984). *Information and the Crisis Economy*. Norwood NJ: Ablex.

_____and Miege, B. (1990). Communication of Knowledge in an Information Society. In Berleur, J., Clement, A., Sizer, R. and Whitehouse, D. (Eds.), *The Information Society: Evolving Landscapes* (pp.161-167). Concord ON: Captus Press.

Schramm, W. (1955). Information Theory and Mass Communication. *Jouralism Quarterly, 32*(Spring): 131-146.

Sen, A. (1999). *Development as Freedom*. Oxford: Oxford University Press.

Shannon, C. E. and Weaver, W. (1949). *Mathematical Theory of Communication*. Urbana IL: University of Illinois Press.

Shapiro, C. and Varian, H. R. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Cambridge MA: Harvard Business Press.

Silverstone, R. (1994). *Television and Everyday Life*. London: Routledge.

_____ (1999). *Why Study the Media?* London: Sage Publications.

_____(2002). Complicity and Collusion in the Mediation of Everyday Life. *New Literary History 33*(4): 761-780.

_____(2005a). Mediation and Communication. In Calhoun, C., Rojek, C. and Turner, B. (Eds.) *The Sage Handbook of Sociology* (pp. 188-207). London: Sage.

_____(Ed.). (2005b). *Media, Technology and Everyday Life in Europe: From Information to Communication*. Aldershot: Ashgate.

_____ (2007). *Media and Morality: On the Rise of the Mediapolis*. Cambridge: Polity Press.

_____and Haddon, L. (1996). Design and the Domestication of Information and Communication Technologies: Technical Change and Everyday Life. In Mansell, R. and Silverstone, R. (Eds.), *Communication by Design: The Politics of Information and Communication Technologies* (pp. 44-74). Oxford: Oxford University Press.

Smythe, D. W. (1977). Communications: Blindspot of Western Marxism. *Canadian Journal of Political and Social Theory, 1*(3): 1-27.

_____ (1981). *Dependency Road: Communications, Capitalism, Consciousness and Canada*. Norwood NJ: Ablex.

Solow, R. M. (1987). We'd Better Watch Out. *New York Review of Books, New York Times 12 July,* 36.

Splichal, S. (2006). In Search of a Strong European Public Sphere: Some Critical Observations on Conceptualizations of Publicness and the (European) Public Sphere. *Media Culture and Society, 28*(5): 695-715.

Stehr, N. (2000). Deciphering Information Technologies: Modern Societies as Networks. *European Journal of Social Theory, 3*(1): 83-94.

Steinkuehler, C. and Williams, D. (2006). Where Everybody Knows Your (Screen) Name: Online Games as "Third Places". *Journal of Computer-Mediated Communication, 11*(4): np.

Steinmueller, W. E. (2000). Will New Information and Communication Technologies Improve the 'Codification' of Knowledge? *Industrial and Corporate Change, 9*(2): 361.

Stigler, G. J. (1961). The Economics of Information. *Journal of Political Economy, 69*(3): 213-225.

Tremblay, G. (1995). The Information Society: From Fordism to Gatesism. *Canadian Journal of Communication, 20*(4)*:* 461-482.

Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet*. New York: Simon and Schuster.

_____ (1997). Multiple Subjectivity and Virtual Community at the End of the Freudian Century. *Sociological Inquiry, 67*(1): 72-84.

UNESCO. (2005). *Towards Knowledge Societies: UNESCO World Report*. Paris: UNESCO Publishing.

United Nations. (1948) Universal Declaration of Human Rights, http://www.un.org/Overview/rights.htmlUDHR

van Dijk, J. A. G. M. (1999). The One-dimensional Network Society of Manuel Castells. *New Media and Society, 1*(1): 127-139.

_____ (2005). *The Deepening Divide: Inequality in the Information Society*. London: Sage.

Warschauer, M. (2004). *Technology and Social Inclusion: Rethinking the Digital Divide*. Cambridge MA: MIT Press.

Webster, F. (2006). *Theories of the Information Society Third Edition*. London: Routledge.

Wiener, N. (1956). *The Human Use of Human Beings: Cybernetics and Society*. New York: Doubleday and Company Inc.

_____ (1948) *Cybernetics or Control and Communication in the Animal and the Machine*, Cambridge MA: MIT Press.

Winston, B. (1998). *Media, Technology and Society: From the Telegraph to the Internet*. London: Routledge.

Notes:

1 This paper is based on my survey of the relevant literature and, of necessity, it focuses only a small number of research areas covered by that survey which resulted in a set of published 800 papers that I regarded as being important contributions from the late 1940s to the present. Eighty-six of these papers were selected for republication in a Routledge Major Work set of volumes on *The Information Society (Critical Concepts in Sociology)* Mansell (2009 forthcoming).

2 An exception in the United States was the work of Gregory Bateson (1951).

3 Bell (1979) is generally credited with having introduced the term Information Society.

4 The term first coined by Percy W. Lewis (1948) in his *America and Cosmic Man.*

5 For critiques of The Information Society as an analytical concept, see Duff (2000), May (2002), Webster (2006).

6 Robertson (1990) provides a critical survey of these various arguments. Research undertaken by Mattelart (2002), Schement (1990) and Tremblay (1995) offered similar criticisms of the dominant discourse of The Information Society vision and its consequences.

7 Some contributors to debates about e-democracy emphasize the potential of online deliberation. For example, Coleman's (2005: 177) concern has been to seek ways in which 'digitally-mediated direct representation could provide a basis for a more dialogical and deliberative democracy in place of the dialogue of the deaf which tends to characterize contemporary political representation'. And Dahlgren's (2005) work on the public sphere suggests that while the Internet is destabilizing for some aspects of democratic practice, it opens up new opportunities for public debate because it encourages diversity in the viewpoints expressed.

8 See http://www.iwf.org.uk/ (accessed 13.09.08).

9 See also results of a study on Internet Self Regulation conducted by the Programme in Comparative Media Law and Policy at Oxford University, funded by the European Commission (EC) under the Internet Action Plan, which examined self-regulatory codes of conduct across national, European Union and international boundaries covering a wide range of media including Internet, film, video games, digital television, mobile communications, at http://pcmlp.socleg.ox.ac.uk/selfregulation/iapcoda/030329-selfreg-global-report.htm (accessed 13.09.08). In 2008 the EC adopted a proposal continuing its Safer Internet Programme (2009-2013), which addresses communications services from Web 2.0 such as social networking, and is aimed at fighting illegal content and harmful conduct such as grooming and bullying, at http://ec.europa.eu/information_society/activities/sip/programme/index_en.htm, (accessed 13.09.08).

10 See papers in *CyberPsychology & Behavior*, e.g., (Boles et al., 2004; Palandri and Green, 2000).

11 The origin of studies of 'everyday life' in sociology research can be traced to Lukács (1920/1971) - influenced by Georg Simmel; to Henri Lefebre (1962/2002, 1971/1984) and Certeau (1984); and to Goffman (1959) and Garfinkel (1967). For application to the study of media and ICT, see Haddon (2004) for a review.

12 Some of the ways in which mediation is used in the literature can be found in Mansell and Silverstone (2002).

13 MDG 8 "In cooperation with the private sector, make available the benefits of new technologies—especially information and communications technologies", http://www.un.org/millenniumgoals/#.

14. Social marketing was developed by Kotler and Zaltman (1971) to apply marketing to the solution of social and health problems. In recent literature it has also been used in ICT and communication 'for' development contexts.

15. For a comprehensive review of research in the area of communication and media 'for development', see Manyozo (2008).

16. There are aspects of Sen's approach that need to be developed and/or critiqued, but I do not have the space here to do so. See for instance, Clark (2005).

17 This relationship was acknowledged in the Millennium Declaration, 18 September 2000, which under ‘V. Human rights, democracy and good governance’ resolves ‘to ensure the freedom of the media to perform their essential role and the right of the public to have access to information’.

18. See http://www.itu.int/wsis/docs/geneva/official/poa.html (accessed 13.09.08).

19. See http://www.un-gaid.org/en/about/ict4d (accessed 13.09.08).