The information society and ICT policy: a critique of the mainstream vision and an alternative research framework

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The Information Society and ICT Policy: A Critique of the Mainstream Vision and an Alternative Research Framework

Professor Robin Mansell
Department of Media and Communications
London School of Economics and Political Science
Tel. +44 20 7955 6380
Email: r.e.mansell@lse.ac.uk.

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Professional biography

Robin Mansell is Professor of New Media and the Internet, Head of the Department of Media and Communications, London School of Economics and Political Science, and Past-President of the International Association for Media and Communication Research. She is internationally known for her work on the social, economic, and political issues arising from new information and communication technologies. Her recent publications include *The Oxford Handbook of Information and Communication Technologies* (Oxford University Press 2007) and *Trust and Crime in Information Societies* (Edward Elgar 2005).

Abstract

This article presents a brief history of the Information Society and a research framework that is intended to address the challenges of ensuring that information and communication technologies are applied in ways that are enabling and responsive to the varied contexts in which people live their lives. ICT policies have come to be reasonably well-accepted as components of broader development policy initiatives, but there is much debate about how best to underpin these initiatives. Insights arising from research that is critical of the mainstream vision of the Information Society are rarely influential in such debates. I consider some of the reasons for this and whether there may now be an opportunity to re-enter some of these debates, particularly those in which it is clear that there are many important issues that reappear on the ICT policy agenda. The article highlights some of the most difficult outstanding questions around the promotion of investment in ICTs in support of sustainable development goals and offers an alternative research framework arising out of a UNESCO-sponsored workshop. It also offers an assessment of the likelihood that greater attention will be given to measures that support more differentiated information or knowledge societies. I conclude that there are signs of learning and an awareness of unequal power relationships that may contribute to a shift in priorities towards a more context sensitive research framework that could be of value to those who are preoccupied by efforts to improve the material conditions of people's lives.

Key words: Information Society, Knowledge Society, Sustainable Development, Information and Communication Technologies.

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1. Introduction [1]

In this article my aim is to present a brief history of the 'Information Society' vision that has emerged alongside innovations in information and communication technologies (ICTs) and to propose a research framework that I argue is needed if we are address the challenges of ensuring that these technologies are applied in ways that are enabling and responsive to the varied contexts in which people live their lives. ICT-related policies are being developed to support of a wide range of important goals and aspirations associated with the development agendas of low income countries. In such countries, there inevitably are trade-offs among the competing claims of stakeholders for scarce resources for investment. When these resources are provided for investment in ICTs themselves or to foster the capabilities to design or use them, we need to ensure that we draw upon the insights of research to ensure that investment strategies are compatible with the development aspirations of the users within their local contexts.

ICT policies have come to be reasonably well-accepted as components of broader development policy initiatives over the past decade. However, despite the fact that the spread of ICTs is acknowledged as a target of the United Nations Millennium Development Goals (United Nations nd),[2] there is much debate about how best to underpin these initiatives. The results of research undertaken by scholars who are active in the research communities that study ICTs from a variety of disciplinary perspectives in the social sciences should have a bearing on this issue and indeed they do as there are countless champions of what I will refer to as the mainstream vision of the Information Society. Unfortunately, insights arising from research that is critical of the predominant vision of the Information Society is rarely influential in such

debates. In this article I consider some of the reasons for this and whether there may now be an opportunity to re-enter some of these debates, particularly those in which it is clear that there are many important issues that continue to reappear on the policy making agenda relating to ICT investment.

In section 2 of this article, I summarise the main lines of research which have helped to foster the mainstream vision of the Information Society. This is a vision that sustains the majority of policy initiatives aimed at promoting the diffusion of ICTs in support of development goals. I also highlight some of the main strands of work that have criticized this vision. In section 3 some of the components of an re-imagined vision of information societies are presented, followed in section 4 by an alternative research framework that was developed during a UNESCO-sponsored workshop in 2007 where participants sought to tackle some of the most difficult outstanding questions around the promotion of investment in ICTs in support of development goals. In section 5, I tackle the question as to whether there are signs of learning with respect to these questions on the part of the more powerful policy decision makers. Finally, in section 6, I conclude the article with an assessment of the likelihood that greater attention will be given to measures that support more differentiated information or knowledge societies.

2. The Information Society Vision

An emphasis on information and communication control systems is typical of much of the research literature on ICTs and the Information Society. This emphasis can be traced to the United States' programme of research, engineering and mathematics in the post-World War II period which led to the publication of Weiner's *Cybernetics: Or Control and Communication in the Animal and Machine* (1948). Weiner was interested in neurological systems and information processing and feedback systems. He suggested that 'to live effectively is to live with adequate information' (Wiener, 1956: 17-18), thereby pointing to the crucial importance of information systems within society. Shannon and Weaver (1949) published their *Mathematical Theory of Communication* soon after this. This work signposted new approaches to automation as a means of providing control systems for military and non-military applications. In this period, there were very few interdisciplinary collaborations with social scientists

that might have shed some light on the implications of information and control systems being theorised and ultimately applied by the scientists and engineers.[3] As a result, the mainstream or predominant vision of the Information Society that emerged initially was not informed by theoretical insights drawn from the social sciences about how innovations in information processing systems might become integrated within societies or with the consequences of any such integration.

From the 1960s within the social sciences, economists such as Machlup (1962, 1980-84) and Porat and Rubin (1977) began the task of measuring the intensity of information activities and the growth in information-related occupations in the United States economy. In the 1970s research in Japan by Masuda (1980: 147) led to the designation of society as a 'computopia', a society that might 'function around the axis of information values rather than material values' and one that would be 'chosen, not given'. This work continued to focus on the role of a growing dependence on information in the economy as ICTs in the form of computers began to become more widespread. And, although Masuda and others, emphasised that the future development of societies should be 'chosen, not given', few questioned who the choosers would be or in whose interests they might make their choices. There was a strong sense of technological determinism aligned with the expectation that the 'best' or 'optimal' technological configurations would be selected.

Bell's 1973 *The Coming of the Post-Industrial Society* brought ICTs and the 'information age' to the attention of a broader group of social scientists in the United States and Europe. Bell said that the variables it was now crucial to study were information and knowledge[4] and that it was necessary to focus research on business and management issues as well as societal concerns. For Bell, Drucker (1969) and others, the challenge by the 1970s was to forge a strong commitment to technological innovation in ICTs as a mobiliser of economic and social progress as a result of the way these technologies could support efficiencies in information processing. By extension, it was assumed that this would lead to greater efficiencies in knowledge production and use without differentiation among societies.

In some segments of the social science research community there was a strong emphasis on the potentially transformative character of ICTs. McLuhan (1962), for

example, popularized the term 'global village'[5] in his *Gutenberg Galaxy: The Making of Typographic Man*, extending the work of Innis (1950, 1951), and emphasizing the distinctive features of communication in the written and oral traditions. de Sola Pool (1974) put ICTs at the centre of policy debates in the United States. Policy discussions at this time generally offered normative prescriptions for the optimal way of capitalizing on the assumed benefits of the production and use of ICTs.

Those who were critical of the emerging mainstream vision of the Information Society tended to challenge the idea of a progression through stages of social and economic organization, leading ultimately to the Information Society. Golding and Murdock (1978: 347) argued, for example, that a priority should be to develop a theory of society with a focus on the implications of ICTs so as not to neglect 'sources of social dissent and political struggle'. Miles and Gershuny (1986: 35) suggested that the interplay of technological and socio-economic changes was associated with very diverse tertiary (services) sectors of the economy in different countries and that it was not helpful to assume that there would be a natural progression towards the Information Society. They also called for a debate on the distributional implications of information resources and on the design of new ICTs, suggesting that questions 'need to be asked *before* the systems are developed and installed'. This view was echoed by Freeman and Soete (1990b) who called, perhaps idealistically, for a resolution of the many conflicting interests in developments around ICTs. Although there were studies highlighting the difficulties of imposing a universal ICT solution (see, for example, Mansell and Wehn 1998, Wilson 1998), developed mainly in the wealthy industrial economies, there were few signs that the relations between the spread of ICTs (and networks) and sources of political or social struggle were being considered in policy making forums.

By the beginning of this century, Garnham (2000) had concluded that the strong focus on ICTs and the Information Society as a potentially emancipatory technology had failed to achieve analytical purchase because it had yielded an internally incoherent research agenda, one that was simply advancing specific interests in the commodification of information within the capitalist system. The work of Castells (1996, 1997, 1998) highlighted the cultural and institutional manifestations of emerging network societies and the importance – or logic – of their social formations.

Although, Castells' work was criticized by scholars such as Stehr (2000: 83) and van Dijk (1999: 129) for its 'modern version of "technological determinism"', it was very important because it drew attention to the enabling as well as the disabling characteristics of ICTs when they become embedded in different social contexts.

Despite the critical observations of some scholars, it has been the economic analysis of ICTs and information that has been used as the main source of research-based insights for policy initiatives concerning ICTs. By the 1990s, economists had concluded that knowledge creation is an important driver of the economy which underpins the Information Society vision, typically making little distinction between information and knowledge. The OECD (1996) defined 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. As David and Foray 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 {David and Foray, 2003: 20, 27}.

From an economic vantage point, information has some peculiar characteristics as compared to tangible goods. Information is intangible, non-rivalrous and non-excludable. It is difficult 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 it being passed on to others. ICTs make the costs of information reproduction negligible, creating a paradox over how to finance its initial (first copy) production costs. Stigler (1961: 213) had been quick to realize this, observing 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'.

Economists have sought 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 and economic analysis has sought to attribute increases in productivity to technological innovation, especially in ICTs. Technologies that can be employed in many different contexts to improve productivity have been called General Purpose Technologies (GPT) (Bresnahan and Trajtenberg, 1995, and see Helpman 1998, Lipsey et al. 2005). This terminology has been extended to identify earlier technologies with a pervasive effect such as the steam engine and electricity. David (1990), for example, has suggested that there might be similarities in productivity growth between the eras of electrification and computerization.

The economic implications for firms, whole industry sectors, national economies and the global economy of investment in ICTs and their application to create global networks and new means of economic and social interaction are still being worked out. Although much of the economic analysis is quantitative and seeks to measure productivity changes related to ICTs, another strand of research in economics is more critical of the mainstream vision of the Information Society or knowledge-based economy. This is represented, among others, by the work of Freeman (1988), Freeman and Soete (1990ab, 1997) and Perez (1983). Their work has been more concerned with institutions and the actors that shape the investment trajectories in the development and application of ICTs. They have argued that certain technological innovations that become increasingly pervasive over time such as digital ICTs lead to shifts in technological 'style' or in 'techno-economic paradigm'. They have sought to explain how changes in micro-electronics technologies have given rise to destabilizing effects on the economies in which they are most pervasively in place. They argue that as a new technology spreads, a new 'common sense' takes hold which begins to pervade all aspects of individual and institutional endeavour. They have shown empirically, that these changes are demonstrably disruptive, often resulting in the obsolescence of skills and qualifications, the dislocation of peoples, and considerable wealth creation for some and but not for others. In a similar vein to the critical sociologists, these economists have argued that the new forms of inequalities that are associated with the spread of ICTs require policy responses across

a number of different fronts which go far beyond narrow concerns about the sources of productivity in the economy.

A cautious and more limited set of expectations about the implications of ICTs is present in research that is critical of the economists' narrow focus on ICTs, information and knowledge as the 'drivers' of the economy. Murdock and Golding's (1989) work had suggested that ICTs are unlikely to be liberating or empowering unless commercial forces can be held at bay. Similarly, Feenberg (1992) had argued that these technologies often embody a 'subversive rationalization'. In order to tackle some of the emerging problems relating to the inequalities associated with the spread of ICTs, Garnham (1997) turned to the economist, Sen's (1999b) work on capabilities and the choices that people are able to exercise in their lives to provide a framework for research and policy with respect to decisions about whether to intervene in the marketplace to tackle these inequalities. [6] Garnham suggested that as connectivity to networks and equitable access become more essential to individuals' abilities to conduct their lives, there will be a requirement for some kind of policy intervention in the interest of fairness and equity (see also Couldry 2003; Mansell 2002).

In the broader field of media, communication and cultural studies as well as work in the political theory tradition, there is also a strong line of research which seeks to understand the contexts in which the deployment of ICTs may be conducive to new forms of participation and democracy as well as the development of skills and capabilities. In this article I do not review this literature, but it should be acknowledged that much of it falls within the tradition of those who are critical of the mainstream vision of the Information Society (examples of this work include Cammaerts 2008, Dahlgren 2001 and Loader 1998).

In summary, the idea that the spread of ICTs is often associated with new forms of disadvantage and inequality in society and that the Information Society vision is not likely to be universally beneficial to all is one that is present in some of the social science literature, but the insights are rarely influential when policy makers launch and implement ICT-related development strategies. The relationship between the advocates of policies and practices more conducive to a bottom-up approach and

those who act in the policy-making arena is a complex one which cannot be developed in this article. In some cases, the results of research that is highly critical of the mainstream vision are simply not part of the debates while, in others, this work is acknowledged, but for a host of political and economic reasons, it is not acted upon.

One significant attempt to move away from the predominant narrative about the Information Society occurred in 2005 with the publication by UNESCO of its World Report entitled *Towards Knowledge Societies.* This report strongly emphasised the plurality of knowledge (or information) societies historically as well as in today's environments. The authors posed the question: 'Does the aim of building knowledge societies make any sense when history and anthropology teach us that since ancient times, all societies have probably been each in its own way, knowledge societies?' (UNESCO 2005: 17). In the report it was argued that there are no ready-made, off-the-shelf models of the Information Society that can be adopted to ensure that ICTs are developed and used in enabling ways. An effort was made to link the concept of knowledge societies to human and sustainable development goals.

> Might we now have the means to achieve equal and universal access to knowledge, and genuine sharing? This should be the cornerstone of true knowledge societies, which are a source of human and sustainable development. … The idea of the information society is based on technological breakthroughs. The concept of knowledge societies encompasses much broader social, ethical and political dimensions. *There is a multitude of such dimensions which rules out the idea of any single, ready-made model,* for such a model would not take sufficient account of cultural and linguistic diversity, vital if individuals are to feel at home in a changing world (emphasis added) (UNESCO 2005: 17).

In the light of this move by an agency of the United Nations to shift the focus of concern about ICTs into the social, ethical and political dimensions, it seems essential for the scholarly community to renew its commitment to a research framework in this area that can challenge more conventional approaches with their emphasis on a universal pathway towards the Information Society. One feature of any such renewed commitment is the mobilisation of research that challenges the dominant vision and

its assumptions about the homogeneity of knowledge societies as they continue to develop in the 21st century. There is a need for a renewed effort to critique the values embedded in ICT-related policies and practices, with the goal of countering those which privilege technology and foster a narrow set of market-led values. In effect, the research community needs to foster a fundamental rethinking of sustainable development in the context of information or knowledge societies and the role of ICTs within that context**.** In the next section I set out some of the arguments underpinning one attempt to make some progress in this area.

3. Re-imagining Information or Knowledge Societies

A re-imagining of information or knowledge societies that may lead to measures encouraging communication and information environments that are more inclusive and enabling of people in a wider variety of societal contexts, thereby contributing to greater efficacy, social justice, and well-being, needs to be founded upon a commitment to achieving sustainable development goals, however they are understood in a given context. Some scholars and activists have abandoned the term 'development' in order to move away from progressive, neo-liberal and value-laden perspectives which they argue embrace Western traditions of research which become self-referential. In the case of development research, as Guttal (2007: 34) puts it,

> Increasingly, development research and its accompanying discourse have become an incestuous, self-referential system of knowledge that is blind and deaf to realities outside of the world it creates. Its world is composed as a picture that reflects the preferred economic and social models of those in power, who control the discourse and benefit from it. This entails creating and sustaining regimes of truth – or falsehoods, depending on where one is situated – that are backed by research and new fields of expertise, and are 'normalised' in the popular imaginations through conferences, publications, lectures and of course, through development projects and programmes.

I use the term *sustainable* development in this article to signal a departure from an uncritical stance with respect to development. A departure from the mainstream vision of The Information Society is also signalled by my use of the terms information or knowledge *societies.* While as a research community we need to ensure that our

contributions to 'ICT for development' debates are not 'blind and deaf to realities outside of the world it creates', it is also important to be able to engage with those in disparate policy communities whose discourse so far permits them to discuss the issues mainly from a starting point that resonates with the predominant language of 'development' and 'the information society'. There is a need for a dialogue between critical scholars and other stakeholders that aims to encourage translations between alternative meanings and interpretations of the goals of sustainable development and the use of ICTs. In this context translation refers to the need for researchers to: 'engage in, and try to connect to, knowledge formations and vocabularies that reside in other modernities and other temporalities that are either refused recognition, or are not adequately translated, in machines of knowledge production' (Shome 2006: 3). Therefore, we need to offer a research framework within which indigenous theory building can thrive within a variety of different social, cultural, economic and political contexts and we need to develop our insights and their relevance for policy using a variety of languages.

There has been critical analysis and discussion of the relationship between ICTs and development since the work of Quebral (1975, see also Manyozo 2008). But, as suggested above, the mainstream research, following the conventions of economics, tends to focus on markets, productivity and on what has been termed 'social marketing' where the user of ICTs is seen principally as a customer or a consumer in the market.[7] In contrast, I am advocating a shift in emphasis that will give a higher priority to research that embraces a concern for the role of ICTs in enhancing the power of peace and tolerance. Understanding the role of ICTs in fostering mutual understanding, peace and reconciliation among disadvantaged peoples, arguably requires an effort to support the ambitions of others by acknowledging cultural diversity and the need for knowledge sharing and information processing beyond the conventional market model. The role of ICTs within societies of all kinds needs to be examined through the lens of a research framework that facilitates debate about the values that should be at the core of the initiatives by stakeholders to build inclusive information or knowledge societies. Our research should contribute to debates that aim to discover both the common and distinctive interests of all stakeholders in our societies. In so doing, we could begin to prise open 'ICTs for development' debates and to acknowledge the contradictory values that are at stake; exposing the normative

aspects of policy initiatives that come to be understood, following Freeman (1990b), as the 'new common sense', that is, a view that there might be clearly articulated set of uncontested universal economic, social or cultural values that could or should guide ICT investment. Our aim must be to ensure that ICTs are deployed in ways that enable people to become empowered to make choices with respect to how their knowledge societies are organised.

Returning to Garnham's (1997) earlier work applying Sen's theories to issues concerning ICTs (in his case, to telecommunication access), we can note that Sen's (1999a) theoretical framework offers a helpful starting point for a research framework of this kind. Sen's (1999b: 7) interest is in people's functionings, where 'functioning' is understood as 'an achievement of a person: what he or she manages to do or to be'. Functionings are related to capabilities and freedoms as, for example, in the freedom to access resources that contribute to well-being. Such freedoms are also closely associated with human rights and ethical conduct. Following Sen's arguments, a research framework that leads to a re-imagining of the role of ICTs in sustainable development initiatives should emphasise the investigation of the multiple ways in which information or knowledge societies may be contributing to the well-being and achievements of human beings.

Research is needed that can help to inform all stakeholders in these societies about the ways in which varying combinations of information and communicative relationships in both local and global contexts can contribute to sustainable development. The uneven characteristics of information or knowledge societies and the inequalities associated with their development and with discrimination and poverty must be taken into account (UNESCO 2006). In order to accomplish this, we need a research framework that departs from those perspectives that envisage a linear, technology-driven approach to the issue of ICT policy, an approach which is characteristic of most of the mainstream 'ICT for development' paradigms. There has been a proliferation of ICT platforms and there are increasing numbers of producers and co-producers of information. One benefit of these platforms is that there is renewed potential to use ICTs as a 'tool for eradicating poverty because it makes people aware they have rights. As such, they cannot be marginalized or excluded. They have the right to be heard and to participate in the decisions that affect their lives' (Khan 2006:

10). Although, the potential may exist, recourse to forms of both technological and social determinism are inappropriate when considering the way these new 'tools' are experienced by people in their everyday lives.

4. Towards an Alternative Research Framework

One illustration of an effort to develop this kind of research framework is to be found in the results of a 'brainstorming' workshop that I chaired in December 2007, sponsored and hosted by UNESCO and the International Association for Media and Communication Research (IAMCR). Some 20 leading researchers came together to address two main questions: What new concepts are required to acknowledge difference and the distinctiveness of today's knowledge societies? And, what evidence is there of effective learning on the part of different stakeholders? ICTs are clearly implicated in the answer to the first question. With respect to the second, as Brown (2006: 51) has argued, perhaps the most essential issue is to recall the words of the anthropologist, Clifford Geertz. He suggested that it is crucial to give close attention to the common sense questions and answers. Common sense requires us to ensure that all citizens are 'not just using their eyes and ears, but using them collectively, judiciously and reflectively to understand their own locality'.[8] In a similar vein, it is important to emphasize that any discussion of the role of ICT applications in the service of sustainable development needs to consider the fluidity and context specificity of our societies. This is essential if the goal is for a research framework to emerge that is not caught between 'a hegemonic Eurocentrism, and a counter-hegemonic but reactionary epistemological nativism' (Dirlik 2004: 146). It is important to keep this risk in mind, especially in discussions about theoretical standpoints and methodologies.

The participants in the UNESCO workshop were from Bahrain, Benin, Canada, France, India, Mexico, Russia, Singapore, South Africa, Sweden, the United Kingdom and the United States (UNESCO/IAMCR 2007). Most were academics but many had strong links to practitioner and policy making communities in their respective countries. The outcome of the workshop was a research framework that was partly intended to inform UNESCO's Medium-term Strategy 2008 – 2013. UNESCO's strategy has an overarching objective to build 'inclusive knowledge societies through

information and communication' (UNESCO 2008). This objective embraces efforts to enhance universal access to information and to foster pluralistic, free and independent media and information structures. UNESCO officials had recognized that the analysis of knowledge societies is not the exclusive preserve of economic analysis and its definition emphasized capabilities, the variety and, especially, the plurality, of such societies: 'knowledge societies are about capabilities to identify, produce, transform, disseminate and use information to build and apply knowledge for human development' (UNESCO 2005: 5).

The research framework that emerged from two days of intense discussion was informed, in line with Sen's work, by an emphasis on ICTs and human well-being rather than on ICTs and market-led values. Significant emphasis was given to the need to examine the role of ICTs in contributing to cultural diversity in recognition of the plurality and variety of knowledge societies. Analysis of governance arrangements with the aim of ensuring that they are inclusive of all stakeholders was given a very high priority. In addition, issues around media and information-related education were regarded as the central means through which ICT applications may contribute to improved human well-being.

In the light of these overarching priorities, it was argued that a research framework for the investigation of the role of ICTs in sustainable development must be informed by a consideration of, and sensitivity to, issues of communication, culture and context. This was a reflection of the need to acknowledge that communicative environments of all kinds within knowledge societies – ranging from interpersonal family relationships to large groups and organisations - are mediated by older and newer ICTs in many different ways.[9] In a world in which there is a tendency towards atomised individuals and fragmentation, a major issue is to understand the potential for new communities and civil society actors to emerge within ICT-mediated environments.

If we are to successfully challenge the assumptions of the mainstream Information Society vision, we need to avoid dichotomies between older and newer ICTs and between information 'haves' and 'have nots'. Research must be conducted in a transversal way that contributes to integrated perspectives and that understands contemporary problems in multiple ways. The research framework suggested by the

participants in the UNESCO workshop emphasised the need to ensure that ICTs are developed and used in ways that contribute to the well-being of social groups, for example, with respect to health, education and literacies, and human rights. The ethical and moral considerations raised by developments in knowledge societies were also emphasised.

Within this research framework, there were several domains of work that participants in the workshop argued need to receive the greatest attention. These are outlined briefly here.

Human Rights, Communication and Information

Given the emphasis on human well-being and the implications of ICTs in this research framework for sustainable development, special attention needs to be given to examining how, and to what extent, information and communication-related rights are being respected in emerging knowledge societies (Vega Montiel 2007). 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. 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 debate about whether there is a need for the formal establishment of a 'right to communicate', but it is clear that there is a strong relationship between the recognition of the inherent dignity and equal and inalienable rights of all people and their right or entitlement to participate in communication and information environments. This relationship was acknowledged in the United Nations Millennium Declaration (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'. Policy-making with regard to 'ICTs for development' would benefit from insights into the legal conditions for free speech and a free press in emerging and other democracies and how these traditions can be

sustained. What, for example, are the legal and other conditions that enable or constrain access to knowledge societies by different social groups? How do different ICT-supported environments contribute towards the promotion of human rights? Issues of communication and information rights are understood from different standpoints in different countries and regions and so we need to encourage comparative research on how information and communication (including media) production practices influence moral conduct and understandings of others and their well-being.

Access and Literacies

In line with an emphasis on well-being, research on issues of ICT access needs to be combined with research on the literacies required for functioning in information or knowledge societies. There are issues of 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. Here we need to move beyond the simplistic and dualistic thinking that is characteristic of many studies of the 'digital divide', a point made very strongly by Warschauer (2002, 2004) in his work which calls for an analytical framework focusing on social inclusion. Accounts of whether individuals have access to specific ICTs are not helpful unless they are coupled with insights into the dynamics of specific informational and communicative contexts. ICT access issues need to be re-imagined and researched in terms of a wide range of communication and information capabilities in Sen's meaning of the term or in terms of literacies as used elsewhere in the literature, especially for young people (see Livingstone 2009). As Ulla Carlsson suggests: 'Media and information literacy is needed for all citizens, but is of decisive importance to the younger generation - in both their role as citizens and their participation in society, and their learning, cultural expression and personal fulfilment. A fundamental element of efforts to realize a media and information literate society is media education' (Carlsson 2007: 1).

Literacies need to be investigated with respect to different social groups and their specific needs, taking age, gender, class, ethnicity, disabilities, and minorities into account. Access questions need to be extended to include literacies related, for example, to education, political participation, entrepreneurship, and the management

of new kinds of networks of partnerships. We also need to give greater attention to differences in access and literacy levels among groups such as migrant labourers and the conditions that prevail for urban as compared to rural workers, that is, to those groups in society who may be disadvantaged or marginalised in various ways by investment strategies in ICTs.

Participatory Communication and Representation

Research is needed in the field of participatory communication encompassing a variety of perspectives including developments in 'citizen' or 'networked' journalism (Beckett and Mansell 2008). From a governance perspective we need to better understand the sustainability of emerging forms of network-based participation by civil society members and the extent to which new ICT platforms can contribute to democratic participation, e.g. social networking using Facebook, MySpace and a host of related Internet sites. Changing patterns of media and information production and consumption need to be examined with attention to different social groups. ICTs are also 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). We need to discover more about what policy frameworks are consistent with enhancing sustainability and how these *differ* by country and region. Research in this area needs to be extended beyond the Western countries to investigate the changing roles of older and newer ICTs from radio, to multimedia sites and through the growing use of mobile phones, with a focus on who is being included and excluded from these developments.

Emerging information or knowledge societies are generating increasingly complex structures and systems for organising knowledge of all kinds and these embrace all forms of ICTs. They enable new means of representation of ourselves and others and they entail many new conventions, norms and standards that are present in the mainstream and alternative media. They are also embedded within the conventions of the way information systems organise and enable access to information. Research is needed that focuses on the dynamics leading to effective learning systems and to

develop a better understanding of how digital representations can generate mistrust. Little is known, for example, about how new forms of digital representation of distant others have the potential to give rise to violence, conflict, suffering, and victimisation or about the implications of these representations for public opinion formation and for humanitarian action (see Chouliaraki 2006).

5. Are There Signs of Learning?

The foregoing section highlights some of the key areas where a critical research framework for the investigation of the role of ICTs in sustainable development might be expected to enhance our understanding of the consequences of emerging information or knowledge societies. However, this framework does not address the question as to whether there are signs of learning on these issues within stakeholder communities and especially among those who are positioned to exercise decision making power. The last three decades have seen the publication of many reports outlining recommendations for addressing these and related issues. 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 (UNESCO 1980/2004; and see Mansell and Nordenstreng 2006; Carlsson 2005). In the 1990s, and continuing into the present, numerous countries have been encouraged to prepare strategies for reducing inequalities relating to ICTs. This work has been supported by many governments, intergovernmental agencies, aid donors, and civil society organisations. At the global level, the Plan of Action of the World Summit on the Information Society (ITU 2005) and the initiative of GAID (Global Alliance for ICT and Development) are two of the most recent and visible interventions and each of these has local or national links.

There is a need to assess the barriers to the effective and equitable implementation of many of these initiatives as well as to understand what contested values are being embraced by them. What are the major barriers that make it difficult for those voices to be heard that are able to articulate research results arising from a research framework such as the one elaborated here? To understand the ways in which the insights from research enter the policy domain, we need a deeper exploration of the power relationships that influence participation in policy debates and implementation.

We need to understand the forces that give rise to continuity and discontinuity between multiple stakeholders, including those entering partnerships and intended to enable those working at the local level to influence ICT-related developments. We need to learn more about what the nature of participation and consultation has been, that is, how are people actually involved in ICT for sustainable development initiatives? How, for instance, has the development of ICT strategies and action plans influenced policy diagnoses in specific countries? What evaluation instruments have been, and are being, used? When these are imported from other contexts, are they appropriate for local contexts? The analysis of the barriers to and opportunities for bottom-up policy formation and implementation also need to be examined so that steps can be taken to reduce them.

It is difficult, in the absence of empirical evidence, for various stakeholders to consider the policy interventions that might be needed to enhance people's well-being if they have little or no information about the nature of communication and information-related inequalities and how these are connected with broader sources of social inequality. Many efforts to develop indicators of information and knowledge societies are insufficiently fine-grained and they are often insensitive to differences within and between societies (Dunn and Johnson-Brown 2008). In line with Sen's emphasis on capabilities, we need to develop qualitative and quantitative measures, built upon a range of methods, including ethnographic methods, to redress deficits in understanding. Sources of information to underpin policy decisions need to be people-centred and they need to offer critical assessments, not only of distinctions and differences among information or knowledge societies, but also of differences in the ways data are interpreted and received by stakeholders (Gillwald and Stork 2007).

What possibilities exist to bring critical insights from research into the frame of policy debate about ICTs and sustainable development and are there signs of progress towards learning on the part of the more powerful stakeholders? 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. There was initial hope that this United Nations-sponsored forum might lead to action to alleviate human suffering and inequality associated with ICTs after its first phase in 2003. However, Hamelink

(2004) warned that the exclusion of civil society representatives and critical scholars from the formal deliberations at the Summit meant that there was unlikely to be much action. The WSIS Action Plan (ITU 2005), which did benefit from some input from civil society actors, suggested a plethora of ways forward and did go some way to giving consideration to issues of human rights, access and capabilities or literacies and participation. The ITU's (2008) *Report on the World Summit on the Information Society Stocktaking* provides much evidence of the many varied, and often creative, initiatives to extend the reach of ICT services to all, and especially to those in low income countries. What it does not do and what I suggest we in the social science community have an obligation to do, is to relate these activities to indicators of social well-being and poverty alleviation, and to critically ascertain the extent to which these multiple initiatives are: a) consistent with the needs and aspirations of local actors, and b) financially sustainable and scalable so as to extend their reach and viability in the medium and longer term.

Insofar as we do not undertake such research, we leave a space open for the further promotion of the mainstream Information Society vision which tends unquestioningly to equate observations about growth rates with probable improvements in overall socio-economic welfare. For example, 'higher growth rates in the developing regions are having an impact on the distribution of ICTs: By the end of 2007, 69 per cent of the world's mobile subscribers were from developing countries – a positive trend that suggests that developing countries are catching up' (ITU 2008: 3). Many of the policy measures aimed at addressing inequality and ICTs continue to be strongly influenced by neo-liberal assumptions about markets and regulation (Lugo and Sampson 2008; see also Mansell and Wehn 1998, Mansell 2001, 2006). Those of us who are critical of such linear thinking in the scholarly community, cannot turn our backs on the domains of policy or practice where this kind of thinking is encouraged and remains unproblematised.

6. Conclusion

For some researchers in the social science community, the academic reference points for work on the role of ICTs in sustainable development are drawn from the United States or other Western countries. Some of those in the scholarly community who

focus on the research issues raised in this article may be unaware of the critical research framework that are under discussion.[10] A research framework such as the one outlined in this article can provide guidance to those seeking to offer critical assessments of developments in ICT, thereby encouraging work that can inform those involved in shaping ICT-related policy agendas. We need research that will enable us to move closer to understanding how ICT policy and practice can better contribute to sustainable development and peaceful human relations (UNESCO 2001).

As indicated in this article, ICT-mediated social systems need to be examined using perspectives that facilitate debates about the values that need to be at the core of efforts to build inclusive societies. In the light of the research framework outlined in this article, three areas deserve particular emphasis. The first– human rights – calls for an emphasis on human well-being within societies. This means giving more attention to the extent to which information and communication-related rights are being respected. It entails a discussion about values, responsibilities, and actions. 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. The second – access - needs to be combined with work on capabilities and the literacies required for functioning in society. Access issues need to be rethought in terms of a wide range of capabilities and the relationships between market and non-market arrangements for enabling learning. The third area – participation and representation – needs to focus on the sustainability of different forms of participation by individuals and civil society members in society. Work on critical theories of learning and the role of culture, power and language within dispersed networked communities needs to be developed to understand the role of ICTs, for example, in enabling 'witnessing' as a form of political action through various kinds of representations (Riberio 1997, 1998).

Given the market-led emphasis of most ICT initiatives, the leading theoretical standpoints that are favoured in policy forums are often those concerned with the diffusion of innovations in ICTs and with the insights offered by the mainstream of the economics discipline. 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 of societies. The tendency to favour the search for a universal model of the Information Society remains very strong especially within the institutions of policy making. Castells (2009) is optimistic about the possibility 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 dominant developers of ICTs, then there may be hope for social change consistent with an ICT for sustainable development agenda. Castells' optimism regarding the ways in which networked insurgent communities can change 'hearts and minds' is tempered, however, by his understanding of the way dominant actors are seeking to create new electronic enclosures to contain these communities.

The research framework that I advocate here is intended to encourage research on transnational developments and the potential for transformations and shifts in values that may enhance human well-being. It aspires to inclusivity without privileging certain disciplines. It is intended to be flexible and to encourage context-specific and comparative research. My assessment is that there is a continuing tendency to favour a search for universal models of ICT use with the Information Society, to foster market-led values, and to privilege technologies over human aspirations and needs. However, there are signs of learning and a growing awareness of unequal power relationships. This may contribute to a shift in priorities towards a more context sensitive and enabling research framework that could have value for those who are preoccupied by efforts to improve the material conditions of people's lives.

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Notes

1 An earlier version of parts of this article was presented as a keynote presentation to the HCC8 Conference (IFIP TC9) International Conference on Human Choice and Computers, 25-27 September 2008, University of Pretoria, South Africa.

2 United Nations (nd) MDG 8 'In cooperation with the private sector, make available the benefits of new technologies— especially information and communications technologies'.

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

4 Bell (1980) is generally credited with having introduced the term Information Society.

5 The term first coined by Lewis (1948).

6. 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).

7. 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 the ICT and communication 'for' development contexts.

8. Citing Geertz (1983).

9. Thanks to workshop participants for suggesting this phraseology.

10. There are alternative research agendas being developed with the United States, for example, McChesney (2007).