Knowledge societies futures: destabilization in whose interest?

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Knowledge Societies Futures – Destabilization in Whose Interest?

by

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Introduction

The economic crisis of 2008 and its aftermath might be expected to help to destabilize 'taken for granted' assumptions held by those in authority about how and for whom they should govern. Because digital technologies and the production and consumption of media content and information are closely associated with Schumpeterian forces of 'creative destruction' (Schumpeter, 1947), we might expect destabilizing changes in this sector to amplify the destabilization created by financial crisis and to result in changes in the governance arrangements for knowledge societies. This might be evident in shifts in the assumptions and practices that characterize efforts to build knowledge societies that are more consistent with fairness and social justice than has been the case over recent decades. Such evidence might be found in slight shifts in the discourse that is typically employed by policy makers and their advisors (Gil-Egui, Tian, & Stewart, 2010; Stewart, Gil-Egui, Tian, & Pileggi, 2006). As the United Nations' Millennium Development Goals (MDGs) come under scrutiny in the run up to 2015, is there evidence of a stronger emphasis on the application of digital technologies in ways that likely to be empowering for disadvantaged groups in society?

This paper considers whether a period of major global economic disruption in the post 2008 years is contributing to such a shift in the discourse employed in efforts to promote 'knowledge societies for peace and sustainable development' and whether this is likely to be reflected in changes in the priorities and practices of UNESCO. This was the theme of UNESCO's First WSIS+10 review meeting[1] in early 2013. With Professor Gaëtan Tremblay, University of Quebec at Montreal, I was commissioned by UNESCO to prepare a report which we titled *Renewing the Knowledge Societies Vision* and we participated in the conference. This paper reflects critically on the opening plenary and on likely outcomes of this deliberation process. It considers whether and to what extent there are signs of diminishing resistance to learning from past policy failures in a way that might give rise to a better alignment between the goals UNESCO espouses for knowledge societies and the assumptions that underpin its policy measures. The analysis suggests that, whatever the opportunities for change resulting from a period of destabilization of dominant economic assumptions about how best to govern societies, many of those with the authority to govern knowledge societies cling tenaciously to policy that is largely antithetical to fostering genuinely participatory outcomes.

The analysis is based on reviews of documentation undertaken in the preparation of the UNESCO report, contributions to the report by 33 academics and practitioners from many regions of the world, and an examination of the discourse employed by invited WSIS+10 plenary speakers. The results indicate that in a period in which the prevailing model of market-led development is being challenged by a general destabilization associated with the financial downturn being experienced by the economies of many countries around the world, while some of the policy discourse favours measures aimed at encouraging equality, social justice and inclusion, the assumptions underpinning policy interventions favoured by those in authority displays substantial resistance to learning lessons about why knowledge society innovations so often fail to be well-aligned with idealistic goals.

Knowledge Societies Visions in Perspective

The United Nations agencies are leading deliberations on the reformulation of the MDGs with the goal of promoting policies and strategies consistent with greater economic equality, social justice, and sustainability. The Millennium Declaration 2000 stated that 'we will spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty, to which more than a billion of them are currently subjected'.[2] The MDGs aim to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria and other diseases, ensure environmental sustainability, and stimulate global partnerships for development. The last goal is cooperation with the private sector to make available the benefits of new technologies, especially information and communication. Progress towards each of the Millennium Development Goals (MDGs) has been varied with targets being met in some cases and falling short in others (Karver, Kenny, & Sumner, 2012; UN, 2010a).

In the case of information and communication technologies, the emphasis has been primarily on measuring their diffusion with a strong focus on mobile networks and Internet access, and in recent years, on access to broadband networks. For example, the 2012 MDG report highlights the growth of mobile subscriptions, growth in use of the Internet and an emerging digital divide in access to broadband: 'by the end of 2011, the number of mobile cellular subscriptions had grown to an estimated six billion including 1.2 billion active mobile broadband subscriptions. This increase brings mobile cellular penetration levels to 87 per cent worldwide and 79 per cent in the developing regions. At the same time, more than one third of the world's population is using the Internet…',

and two thirds of those users are in developing regions, albeit with major regional differences (UN, 2010b: 63). This emphasis will not be news to critical scholars who persistently call for a policy emphasis on human beings and unequal power relationships, but it is consistent with the prevailing dominant vision of a market-led (neoliberal) approach to building knowledge societies (Mansell, 2012; Tremblay, 2011). The policy environment for knowledge societies historically has been tilted in favour of market-led strategies. Information exchange for a price in the marketplace, maintained through enforcement of private rights of information ownership (copyright and patents) creating the perception of information scarcity, and an emphasis on access to technology and its mastery characterises the principal assumptions this model.

The opening plenary of UNESCOs WSIS+10 conference provided conformation of the persistence of this dominant model, even as the overwhelmingly market-led, technology determinist model is being challenged in the face of economic crises by economists who are not far from the mainstream of their profession (Krugman, 2012; Stiglitz, 2010). For example, Professor Jeffrey Sachs[3] gave the keynote opening address and his speech was a model of the dominant paradigm of the knowledge society. He put advances in information processing, storage and transmission and Moore's Law[4] at the heart of his presentation. For Sachs the key feature of knowledge societies is disruptive change resulting from the revolution in digital technologies. Only by becoming part of 'Moore's economy' is it possible to achieve economic progress. This he argued is because digital technologies, including infrastructure, hardware and software, are spreading to all parts of the world, enabling a services revolution which is essential for ending poverty. The diffusion process achieves this by enabling all countries to use smart technologies, wireless broadband, smart monitors, 'in the cloud' educational curricula, and much more. This allows countries to leapfrog and to ensure the deep transformations required to enable digital technologies to serve as fundamental tools for sustainable development. He emphasised that technological transformations are leading to further transformations in jobs and governance. For instance, government transparency is being 'forced by technology' with hugely empowering and democratising results: thus, 'revolutions around the world are the result of free access to information and the rise of social networking'. Sustainable development in a post 2015 world, he claimed, will yield inclusion in 'the knowledge society'. It will do so 'by mobilising Moore's economy to the fullest, progressively harnessing the ICT backbone'.[5]

Sachs serves as special advisor to the United Nations Secretary General who is responsible for the processes leading to the renewal of the MDGs. We can assume that his views have influence. He alluded to the use of digital technologies in and outside the private sector, but at no point did he acknowledge the possibility that the benefits of 'Moore's economy' do not follow automatically from technology diffusion.

The disjuncture between this prevailing set of assumptions about the roles of technological innovation and markets and alternative models of knowledge societies which privilege human beings, equality and social justice could not be greater. In contrast, in 2005 UNESCO had gone a considerable way towards outlining the main assumptions which might underpin an alternative pluralist and strongly participatory vision of knowledge societies. Its contribution to the World Summit on the Information Society (WSIS), suggested a move away from 'the information society' towards an emphasis on the plurality of *knowledge societies*. Its World Report, *Towards Knowledge Societies* (UNESCO, 2005) characterized these as societies benefiting from diversity and capacities for stimulating knowledge sharing. This report pinpointed four key areas: freedom of expression and freedom of information, universal access to information and knowledge, quality education for all, and respect for linguistic and cultural diversity (Frau-Meigs, 2011; UNESCO, 2009). It was emphasised that access to information, although necessary, is not sufficient for achieving equitable knowledge societies or for ensuring active citizen participation.

By 2013 UNESCO was well-positioned to renew its earlier vision. More than other agencies it had put 'information and knowledge for all' at the heart of knowledge societies in a way that was less committed to the automaticity of technological revolutions and markets with the aim of bringing about peace and sustainable development. UNESCOs Constitution affirms that 'the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of man and constitute a sacred duty which all the nations must fulfil in a spirit of mutual assistance and concern'.[6] Its commitment to human rights and fundamental freedoms clarifies that digital technologies *may contribute* to the goals of peace and sustainable development, not that technological change will bring these about. A key lesson from decades of research on technological innovation is that it is possible to 'leapfrog' generations of technology, for example, to wireless networks without extensive fixed line networks (Steinmueller, 2001). However it is not possible or even desirable to leapfrog towards a *universal* knowledge society. This view does not take account of the non-

technical arrangements, or indeed, values associated with economic, political and social transformation.

Schumpeterian gales of creative destruction occur in very complex ways (Freeman, 1995; Freeman & Louça, 2001; Manyozo, 2012). In addition, those who have studied the process of innovation observe that information and knowledge are not the same because knowledge requires interpretation by human beings. In a time of economic crisis when policy makers are searching for viable ways to promote their political interests and those of the dominant corporate champions of technology, surely enabling greater creativity and learning through the use of digital technologies would be the best way to reinvigorate business models that have suffered in the wake of the economic implosion and the inability of many governments and the private sector to find ways of rebuilding economies. How robust is the dominant model in the face of these extra-technology developments? Might the economic crisis be creating sufficient disruption to open possibilities for different approaches? Should we expect rebalancing, such that alternative visions gain traction and yield policies and practices better aligned with the goals of social justice, equity and inclusion within knowledge societies?

Discourse and Knowledge Societies Policy

The UNESCO 2005 vision of knowledge societies was an original and stimulating contribution to the debate that was being conducted under the auspices of the WSIS and it was in line with its mission. Its report raised the crucial question: 'Will knowledge societies be societies based on knowledge-sharing for all or on the segmentation of knowledge?' (UNESCO, 2005: 22). Since 2005 much has changed. With the economic downturn it has become more difficult to attract investment into the digital technology sector. Public and private spending in most countries is being scaled back and recent reports on the importance of information and knowledge in society acknowledge this (UNDP, 2012). While digital technologies and, especially, mobile phones, digital information, and media content may be more accessible to today's population than in previous decades (World Bank, 2012), this has not eradicated fact that a decline in investment is likely to have consequences for policy measures, and especially for those that could help to rebalance interventions in favour of securing human rights, freedom of expression, and diversity of knowledge (Jorgensen, 2011, 2006; Souter, 2012; UNDP, 2012).

If human development is understood as a process of enlarging people's choices (Sen, 1999, 2009; UNDP, 1990: 1), and creating 'an enabling environment for people to enjoy long, healthy and creative lives', it is essential to make progress in promoting UNESCO's goals alongside economic growth. UNESCO is helping to foster an open commons for information sharing, taking advantage of the abundance of digital information, and relying on the innovative abilities of networked communities, within the prevailing framework of private ownership of information under existing copyright law. However, novel policies and practices will be needed to achieve a rebalancing such that this alternative model attracts as much investment as the dominant (proprietary) market led model. As Castells put it in *Networks of Outrage and Hope*, 'if there is an overarching theme, a pressing cry, a revolutionary dream, it is the call for new forms of political deliberation, representation and decision-making' (Castells, 2012: 254). His plea for imaginative ways of dealing with conflicting interests arising from power asymmetries in knowledge societies is not a new (Hamelink, 2004; Mansell, 2010; Mansell & Wehn, 1998). But it is an essential plea because future knowledge societies will be shaped by strategies towards information, communication and education that are taken in the near term.

The insight that eludes proponents of the dominant vision which underpinned Sachs's keynote speech is that it is inappropriate to look only to the internet, mobile phones, broadband or software apps to understand societal transformation. The fascination with technology as the solution to development problems is deeply rooted, but technology becomes meaningful in people's lives in ways that differ across the world. Alternative visions call upon those with authority to invest in enabling people to empower themselves through knowledge so that they can shape how their requirements for well-being are met. This means looking beyond diffusion indicators and potential uses of digital technologies to the conditions – institutional, regulatory, financial, political, and cultural – that frame these uses, whether these are uses of mobiles, social media, or other forms of mediated interaction (Samarajiva, 2011a, 2011b). What Sachs's speech demonstrates is that he, at least, has yet to learn how to articulate the discourse of alternative models.

In the WSIS+10 plenary, following Sachs's video-linked presentation, participants heard from a member of the International Telecommunication Union/UNESCO Broadband Commission for Digital Development. This speaker referred to the need for a broadband infrastructure for education but also to the need for training and continuing education,

for digital literacies for all educators and learners, for mobile learning and the development of local content in an ecosystem that is aware of local contexts, suggesting a greater familiarity with the discourse of alternative models. This speaker said that investment in broadband is essential for increasing per capita growth, for education and jobs, for productivity and competitiveness, and for innovation and creativity, but also emphasised that it is not the role out of technology that counts, it is the education system. It was stressed that top down innovation does not work. From the Microsoft representative, participants heard that we need to move beyond replicating the inequalities that characterise the offline world, that we need to expect more from education and technology and to imagine a new education system; one that incorporates rich interactive content and personalised learning for all students, 'in order to compete in the global economy'. Another speaker mentioned the importance of critical thinking skills especially in reference to sustainable development and the role of information and knowledge to mitigate risks and ensure that development is responsive to the needs of the present without compromising the ability of future generations to meet their own needs in line with the United Nations' *Our Common* Future report (United Nations, 1987). But the overriding theme was that knowledge societies are about ensuring that competition stimulates innovation, encouraging collaboration through public – private partnerships and promoting the availability of free content from the best (US) universities.

On the basis of these keynote presentations we may conclude that the discourse of authoritative individuals who influence policy for knowledge societies, at least those within the UNESCO interest community, has become somewhat more balanced in reflecting both top down and bottom up approaches to governance in this area. However, is this rebalancing being reflected in the interventions they guide? If we take the question of adopting and enforcing appropriate policies for managing the production and circulation of information as a matter of human choice, rather than as the outcome of 'Moore's Law', we can see quite clearly the differences in the interests of stakeholders in the policy directions that are favoured for knowledge societies.

The prevailing model assumes that the production of knowledge happens when it involves learning only by individuals. However, knowledge production and learning occur through collective activity. This is because a new idea or a new product or process is never entirely new. It usually results from an original combination of the already known. Knowledge creations borrow from the collective heritage and the act of creation

is a blend of individual and collective contribution (Lessig, 2008; Mansell & Steinmueller, 2013; Mœglin & Tremblay, 2012). In an era in which digital mash-ups and remixes are relatively simple to create this is even more prominent than in the past (Constantinides, 2012).

How should a society organize access to information while encouraging the production of knowledge? This question goes to the very heart of how we value knowledge. The intellectual property rights regime was developed to balance the interests of creators and those wishing to access their works (UNCTAD, 2008). Indeed, Article 27 of the Universal Declaration of Human Rights observes that 'Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits. Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author'. This balance sought to provide a reasonably large public domain in which everyone could benefit from information. Over time, however, this domain has been squeezed with greater attention to information ownership rights and less to authorial or moral rights.

There are many innovative ways in which people can share information in a digital commons. Hess and Ostrom (Hess & Estrom, 2007; Ostrom, 1990) argue that knowledge is a collective resource and a non-rival common good and that sharing information does not lead inevitably to what Hardin (Hardin, 1968) called the 'tragedy of the commons'. Information survives individual appropriation; it is non-rival in use, and its value and usefulness increase with its circulation. Conversely, excessively limited access impedes its contributions to other creators and can lead to what Heller calls the 'tragedy of the anticommons' (Heller, 1998). This does not mean that information should always be free and promoters of the Creative Commons (CC) do not intend this,[7] since they offer licenses defining progressive conditions of access corresponding to different levels of intellectual property control (Fitzgerald, 2008). By 2010 it was estimated that there were more than 400 million CC licenses (Reilly & Smith, forthcoming 2013) and there is a growing need for training in this area (de Beer, 2009; de Beer & Oguamanam, forthcoming 2013). Monetary rewards for the creation of digital information are important in the economic sector identified as the creative industries where knowledge creation plays a key role. Workers in this sector must be well-trained to master specific knowledge and skills (Bouquillion, 2012 ; Boyle, 2008; Tremblay, 2011; UNCTAD, 2008). But it is also necessary to acknowledge that knowledge societies are characterized by

decentralized individual and *collective* action – 'new and important cooperative and coordinated action carried out through radically distributed, nonmarket mechanisms that do not depend on proprietary strategies plays a much greater role than it did, or could have, in the industrial information economy' (Benkler, 2006: 3).

By rejecting a dogmatic opposition between market-led approaches and the information commons, it is possible to envisage new spaces for deliberative opportunity in which adjustments to the policy environment can be encouraged to enable market and commons-based creative activity to proceed in *parallel*. This is an opportunity which is itself arising out of a combination of technological, economic and social destabilization. Market players could both stimulate competition and provide sufficient investment and incentives for innovation while also giving greater attention to high quality education, market governance and a system to facilitate the sharing of digital information. State actors could pursue both goals as well in a more coordinated and bottom up way. Crucially, civil society could be more involved in the governance and the management of knowledge-related activities because participatory initiatives have been found to produce better results than top-down initiatives (Powell, Davies, & Taylor, 2012).

Unfortunately, however, far too little is known about the design principles required for the management of an information commons and enabling collective action (Hess, 2012). For instance, open information initiatives are often seen as presenting threats to authority or as competing for financial resources with market-led developments (Mansell, 2013 under review). Sometimes they are charged with degrading information when they do not operate within the conventions for information verification in science or when the release of information is seen as damaging to the public interest, especially to sensitive state security interests.

The conflicts between those favouring the singular vision of the knowledge society and those favouring strategies acknowledging local conditions and alternative strategies involving the need for collective action will persist. If alternative visions of knowledge societies are to become a reality, policy must acknowledge the differences and work with them to devise creative solutions. It is enduring conflict of this kind that is at the heart of the persistent failure of policy to favour interventions in knowledge societies that more closely align with the idealised goals. Empirical evidence indicates that 'while obviously needed, neither technological knowledge nor local knowledge and connections are necessarily the most important factors in making open ICTs work for development. What

is most essential is a conscious appreciation of the key issue of how to make different actors work together, in a new context which involves breaching and rearranging institutional boundaries and organizational structures (Singh & Gurumurthy, 2011). When information and power asymmetries are not addressed, participation remains a feature of discourse rather than of action (Björkman, de Walque, & Svensson, 2012).

Learning from failure

The lesson from decades of analysis of the processes of technological and socio-economic innovation is that it is crucial to learn from both success and failure (Rothwell et al., 1974; van der Panne, van Beers, & Kleinknecht, 2003). Both must be understood from the perspectives of specific stakeholders, including those who are disadvantaged. Opportunities for learning in the face of economic destabilization and the disruptions associated with rapid technological innovation are pervasive for all stakeholders in today's knowledge societies because, as the history of innovation demonstrates especially in the case of digital technologies, these are General Purpose Technologies (GPTs) (Bresnahan & Trajtenberg, 1995). One of the most prominent learning failures is resistance to understanding that knowledge is not equivalent to information (Tremblay, 2008). Knowledge is a complex concept which cannot be reduced to the mere addition of unrelated information bits. Knowledge implies meaning, organization and structure and there is no knowledge without learning. Thus, UNESCO's move from information to knowledge societies was not a mere change of label. In addition, there is a tendency for reviews of the experiences of policy in this area to highlight success cases without indicating why they are deemed successful or *for whom* they are successful. These reports convey information but they rarely yield the necessary knowledge that might enable learning that could destabilize prevailing assumptions and encourage new approaches to policy implementation. Additionally, success may be limited in time or reach, or perceived as such by some stakeholders and not by others. Success may be evaluated from a donor agency's perspective or the private sector's view of whether a reasonable rate of return is likely.

The experience of a digital technology project in Tanzania using mobiles to send SMS messages illustrates this. Daraji, a non-governmental organization in Tanzania, introduced the *Maji Matone* (water drops) project to encourage citizens to put pressure on authorities to maintain and repair broken water pumps. The local communities were to send SMS messages on the state of the pumps. Some 3,000 text messages were projected, but only 53 were received. On investigation, it became clear that the

sensitivity of relationships between the communities and the authorities had not been adequately considered, that water collection was mainly women's and children's work, and that it was men who had the mobile phones. There was also limited mobile coverage and problems with electricity supply. This experience was reported publicly with the aim of learning from the failure of the project (Barnett, 2012). But 'admitting failure in this way is easy to support in theory, but much harder to do in practice. It may be accepted practice in the for-profit world, but it's uncomfortable for a donor-dependent NGO' (Daraja, 2011). The reasons for the failure of policy initiatives are often associated with a lack of transparency or with changes in internal and external power dynamics (Engineers Without Borders, 2011).

The consequences of policy failure are evident in accounts of progress towards the goals expressed at the time of the 2003/2005 WSIS. These reports highlight persistent problems in achieving greater equity, diversity and social justice and the urgency of addressing them (UN ECOSOC, 2012; UN/ITU, 2010a, 2010b; UNESCO, 2010). Numerous reports focus on digital infrastructure, some on involving small and medium sized enterprises in using digital technologies for poverty alleviation, others encouraging a greater role for private sector investment, the importance of open development and software applications, or the need for partnerships among public, private and civil society stakeholders (Geldof, Grimshaw, Kleine, & Unwin, 2011; ITU & UNESCO, 2010; UNCTAD, 2010, 2011, 2012a, 2012b; Unwin, 2005). Many of these address *what* should be done but are not explicit about the competing interests that create barriers to achieving desired action.

Criticising and rejecting simplistic market led models and the unbalanced privileging of market values (neoliberalism) is relatively easy, but learning the lessons from initiatives that fail to engage their intended stakeholders is a major challenge because of unequal power relationships and of the diversity of concrete lived situations in different parts of the world. Although, 'education is critical to the development of knowledge societies as it is the source of basic skills, a foundation for knowledge acquisition and innovation and an engine for socio-economic development', (Adam, Butcher, Tusubira, & Sibthorpe, 2011: 16), it is not just any education that will encourage a shift towards a greater accommodation of alternative visions of knowledge societies (Willems, forthcoming 2013). In fact, there is a paradox at the core of knowledge societies. This is that the spread of participatory possibilities offered by digital technologies all too frequently coincides with the deterioration of democratic processes and an apparent confirmation

of the assumptions guiding the prevailing market led model (Albornoz, 2013). If the goal is to foster equality, social justice, peace and sustainability, policies must promote the integration of knowledge in ways that maximize the benefits and minimize harms to all including the disadvantaged. This requires learning the lessons from failure and implementing them. The next section highlights several areas in which lessons are available for those with the desire to learn them.

Facilitating Knowledge Societies

Stimulating the production of information that is perceived as being relevant by those who will seek to learn from it and apply it is a major challenge. From the standpoint of the dominant model, the priority for low income countries, is to avoid being left out of technological advances and the policy aim is to bridge the technological digital divide, a view that persists in policy circles but which has been much criticised in the academic literature (Heeks, 2008, 2010; Mansell, 2006; Norris, 2001; van Dijk, 2006; Warschauer, 2003). The priority is often given to connection for the most economically important locations that heightens 'enclave' patterns of development with very mixed consequences, especially for environmental sustainability. Despite the availability of empirical evidence, investing in measures that will increase awareness of services and people's capabilities to use them is generally an afterthought. For instance, a study of the use of mobile services by those at the 'base of the pyramid' in Kenya found that although 60% of respondents owned a mobile phone in 2012, few were fully aware of the applications and services available to them (infoDev, 2012: Table 32). Learning that it is crucial to understand the actual uses people make of their mobile phones and not to make assumptions that patterns of use that are typical in one country or region will be replicated elsewhere is resisted.

Resistance is visible as well in the context of open information policy initiatives. Open information activities increasingly involve crowdsourcing, using tools and applications such as Ushahidi or OpenStreetMap for data collection. Open information platforms enable citizens to generate information that is critical for their livelihoods, but it does not follow that they are able to access and apply the information that they generate. In fact, it has been suggested that crowdsourcing is being promoted by a new elite that is 'wary of overtly signalling the power dimensions of crowdsourcing' (Wexler, 2011: 15). The lesson is that open information initiatives need to be based on open participatory

processes if they are to be valued by local people (Reilly & Smith, forthcoming 2013; M. L. Smith & Elder, 2010; M. L. Smith, Elder, & Edmond, 2011).

Resistance to learning is evident in the education sector as well. e-learning and e-science are associated with a broad range of technologies, but this investment needs to complemented by attention to interactions between digital applications and the offline spaces where people engage in learning. Many initiatives are supporting worldwide learning opportunities and offering content developed by some of the world's leading universities. In some cases, locally sourced content is being developed, but 'from Pakistan to Peru and beyond, experience shows that while there are numerous examples of how technology is used to the great benefit of teachers and learners alike, there are also many cases in which it does little to impact educational processes and outcomes' (M. S. Smith & Winthrop, 2012: 4). This brings questions about the dominance of a Western view of education very much to the fore (Sodre, 2012).

A similar pattern of resistance to learning is evident in the application of digital technologies in support of freedom of expression and political transparency. Government transparency is becoming increasingly feasible, but here too there are challenges. For example, over the past 13 years Estonia has seen three different e-democracy portals set up. One of these, Rahvakogu.ee, was initiated in early 2013 in response to a political legitimation crisis, but many Estonians remain sceptical because the previous two e-democracy platforms were seen to have failed. This was despite the fact that citizens in Estonia have taken up other e-services provided by the state in large numbers.[8] Reasons for the failure of the e-democracy platforms have been attributed to factors such as poor service design, the absence of an agreed role in the legislative system, and offline decision making procedures that are misaligned with online discussion. Some open government initiatives are stalling because of a reluctance to share information and to engage in transparent policy deliberation and policy making. This is illustrated by the Kenya Open Data Portal launched in 2011. The site, with the backing of the World Bank, was launched to provide free access to a range of government datasets. These were intended for re-use by citizens, journalists and the technology community. However, the programme has stalled (Majeed, 2012; Rahemtulla et al., 2011). But the datasets remain locked up in government with refusals to release them to the public portal and anticipated apps have yet to materialize, and the primary focus has been on the deployment of technical platforms. [9]

Where open information applications are expected to be responsive to community needs, the problems of fragmented databases and lack of priority given to establishing agreed standards for linking data, as well as the tendency to privilege information that has been validated by professional science or global institutions over information gathered by local participants is creating problems. This is illustrated by The Young Lives project that uses linked data in a longitudinal study of child poverty, hosted by the University of Oxford. It is following 12,000 children over 12 years in four countries (Peru, India, Vietnam and Ethiopia) using household and child surveys, inter-household data and community data related to child health, education, employment and income, family status, and welfare, to understand the causes and consequences of child poverty. The demonstrator aims to make these data more accessible to policy makers, researchers, and practitioners. Visualization tools were created to graph local statistics alongside those from organizations such as the World Health Organisation. However, the project faces barriers because large organizations rarely publish linked data and are not using data collection or reporting standards compatible with this project. [10] The evidence here is of a persistent learning failure which is the neglect of technical standards and their implications for the fragmentation of information resources.

Bottom up initiatives aimed at enabling communities to identify and report environmental risks to local governments are taking advantage of online platforms that are becoming very common though not always in a way that is empowering. For example, a UNICEF project is enabling young people in Rio de Janeiro to learn how to map a favela with cameras attached to kites or balloons. Images of environmental hazards are taken by mobile phone, geo-tagged and uploaded into an online map that is accessible to local policy makers. The claim is that this is an empowering project that fosters civic engagement and creates community change. It is successful in a number of ways in that it educates the community and encourages people to anticipate environmental problems. However, information cascades from 'international' experts to country offices, to community leaders, to selected youths. Participants are being trained to identify environmental hazards from pre-established categories that are not necessarily those they would identify as crucial for themselves. The information is then verified by UNICEF before being passed to policy makers. The focus on identifying tangible dangers means that little attention is given to the structures within which risks and vulnerabilities are developing. The digital platform could, in principle, be used to map issues chosen by favela residents, but there are no resources to do this. [11] The

lesson is the need to encourage information gathering that is consistent with the experiences of local communities.

UNESCO Director-General, Irina Bokova, has said that 'Equality exists when women and men have equal access to quality education, resources and productive work in all domains and when they are able to share power and knowledge on this basis. Gender equality must be seen as both a practical necessity and an ethical requirement' (UNESCO, 2012: 1). [12] Women's health is receiving attention as an area in which digital applications can be potentially empowering, but the lesson that successful initiatives must be cost neutral for beneficiaries and health care clinics is not easily learned. In Venezuela, for instance, front-line workers in health clinics are concerned about reproductive health. Researchers are working with a local community, Centro de Salud Santa Inés, to identify ways of using mobile phones to improve health care and education among poor women in impoverished communities. Researchers worked with local health practitioners to identify maternal health priorities and to investigate day-to-day mobile phone and communication practices and only then, based on the findings, was a pilot started that built on mobile usage routines. [13] This indicates that in some cases learning does occur.

In contrast, a Health Information System in Malawi responded to the unavailability of organizational structures and networks to provide reliable and timely health information to end-users and to the lack of adequate human resources especially in remote areas. The project to provide information to mothers about maternal and child health issues aims to help women access quality services without having to travel long distances.[14] It was initiated from the top down and, while it is filling an important gap in health information systems, the quality of information that is being provided in the face of insufficient training of medical personnel is a concern and hospitals are over-stretched due to the shortage of personnel. The introduction of this potentially beneficial service is stretching resources even further.

Failures to learn also mean that many ethical issues are neglected. For example, there may be conflicts between the goals of transparency and freedom of expression and flows of information, especially for those who are at risk of harm or are otherwise disempowered by prevailing structures of inequality. Open data are being analysed to support evidence-based policy making, but the results may never be accessible to the local communities that provide them. There is an uneasy relationship between open information and participatory practices which needs to be acknowledged (Berdou,

2013). When standards for taxonomies and classification systems for coding or tagging data are devised by experts in the global North with little consideration about whether these are meaningful for those in other the cultural contexts, the lesson that so often is not learned is that standards need to be devised in ways that render information meaningful for all its potential users (Haddad & Knowles, 2007; Powell et al., 2012). Similarly, ethical practices need to be embedded in the processes and standards for open information especially to protect the lives of people who offer stories on topics like sexuality or on war crimes. 'Citizen journalism', video reports, and digital story telling open up new spaces for dialogue, but there are unacknowledged risks associated with the 'digital shadows' which circulate online (CITIGEN, 2012). Thus, for 'citizen participation' to be meaningful, it must offer opportunities to exercise voice and hold others to account, not just be invited to participate (CITIGEN, 2012). Yet the development of digital applications and better access to information is often simply assumed to enable women's empowerment.

The online outsourcing of work offers employment opportunities for distant workers, but also raises issues about how these workers are remunerated. For example, around 10,000 freelancers are estimated to be active online in Bangladesh. They work for clients in the United States and Europe but also for local government institutions, non-governmental organisations, and individuals providing services such as software development, graphics design, search engine optimization, social media marketing, blogging, and data entry. The online portals where these freelancers are hired are popular, but while the revenues generated by very successful workers can be in the tens of thousands of dollars, the average is around a few hundred to a few thousand dollars (UNCTAD, 2011). Outsourcing of information-related activities is seen as a viable strategy for building economic strength, but it raises ethical issues around whether participation is reasonably compensated (Kleeman, Voß, & Rieder, 2008: 23).

These and other examples that could be offered call our attention to the crucial need to couple analysis of policy discourses with the structures and process of implementation that they spawn.

Conclusion

These examples drawn from the *Renewing the Knowledge Societies Vision* report confirm (for those for whom such confirmation is needed) that not all digital technology or information applications are benign (Mansell, 2012). When this is not taken into account,

there is a high risk of policy failure at least from the perspective of the intended beneficiaries, if not from the perspective of the sponsoring institutions. The prevailing model of technology and market led governance is being challenged partly due to disruptions created by the global financial crisis. Knowledge societies are not emerging in isolation from other large-scale changes in society including shifts in economic power and political, social and cultural transitions, but much policy implementation is still insufficiently concerned with approaches that are likely to empower local communities and excluded groups. In our report, we argued that attention needs to be given to approaches that embrace participation and promote education and learning. However, if the lessons discussed in this paper continue to be resisted, such attention is likely to be reflected in changes in discourse, but not in the practice of implementation.

Our argument was that it is feasible to support both inclusive open information strategies and the prevailing market-led approach. It is possible to develop novel ways to legitimize the open circulation of digital information and to balance this with innovative means of making economic returns from its circulation. The asymmetric relations among the stakeholders in knowledge societies that produce conflicting policies and implementation strategies will persist, but we suggested that UNESCO could take the lead in fostering learning about creative solutions that do not involve the excesses of the market or complete reliance on the information commons. Ideally, the vision of knowledge societies should be one that affirms the core aspirations for peaceful and sustainable knowledge societies in a way that acknowledges the interests of all stakeholders. We noted that UNESCO's initial vision of knowledge societies had moved beyond a focus on the information and communication infrastructure to human beings and to processes of learning, but that its vision of knowledge societies 'for peace and sustainable development' requires a further move to rally the private and public sectors as well as civil society to address persistent problems. We emphasized the need to learn from past failures, but we did not comment on the likelihood of this happening. The lack of discussion of this is explained by the fact that a commissioned report is unlikely to be published if it presents a pessimistic assessment of likely outcomes and we aimed to influence, not to have our report excluded because it highlighted to too great extent the enormous barriers to a change in discourse as well as practice at the institutional level of the United Nations system.

The list of outcomes of the WSIS_10 conference employs the discourse of participation (multistakeholderism), education, freedom of expression, indigenous and traditional

knowledge and scientific knowledge, and cultural diversity, alongside a discourse on the diffusion of connectivity and affordable access to mobiles, the Internet, and a broadband infrastructure. [15] This is similar to the contradictory discourse which characterised the outcome statements of the earlier 2003/2005 WSIS (Padovani, 2005). Despite our call for priority to be given to learning processes, the training of trainers, improved circulation of information, and a balanced legal system to protect intellectual property favouring access for all, participatory initiatives valuing diversity and giving individuals and local communities visibility and voice, it seems likely that power asymmetries favouring those in authority and the dominant model will persist. [16]

The reason that lessons of the past are so difficult to embedded in current and future policy initiatives for knowledge societies is that investment in hardware and software continues to serve as a proxy for the interests of those who seek to benefit from producing digital technologies and information for sale in the marketplace. Insofar as they are successful, their vision of a universal global knowledge society is the one that finds resonance with those in authority positions. It remains impervious to the lessons discussed here that might encourage a substantial change in policy implementation. It cannot therefore be expected to help substantially to alleviate structural social and economic disadvantage. Though some political philosophers argue that 'control over linguistic sense and meaning and the networks of communication" is the core issue in political struggle (Hardt & Negri, 2001: 404), they too tend to be captivated by digital 'tools', imagining that these will create the conditions where citizens and civic sector organizations can self-organize to bring about societal disruption favouring the disadvantaged. But even allowing for the argument that they are not seduced by the strong technology diffusion assumptions of the dominant model which appears to be the case in some of their works, greater attention needs to be given to monitoring the discourses and actions of authoritative institutions as well as to the activities of activist groups. Without attention to this area, the picture becomes one sided, pinning hope for a better future on the (yet to be acquired) capabilities of the already disadvantaged.

The strong assumption that modernizing network infrastructures and providing universal access to information will yield the improved performance of countries on both income and human development indicators has begun to wane. The knowledge societies discourse, with some notable exceptions, has started to acknowledge that there is no simple relationship between the diffusion of technologies and poverty reduction (UNDP, 2004). The financial crisis has shown that inequality and social injustice can thrive in the

midst of the highest levels of penetration of digital technologies even in the global 'North'. Severe disruption is resulting in a turn to greater reliance on bottom up, collective action beyond the market. But as Marcelle argues in the context of knowledge societies policy, 'success will require creative leadership to design and implement solutions. That leadership will involve processes by which visions, dreams and aspirations are transformed into manifest realities. It requires collective engagement and sustained, disciplined effort and the application of mental, emotional and spiritual faculties. The leadership that will make a difference will be designed to work collaboratively in multi-stakeholder networks' (Marcelle, 2013: 9).

UNESCO has the opportunity to provide exemplary insight into how to invoke participatory and genuinely collaborative action in an open and participatory information commons as well as to encourage the commercial development of innovative information production. However, if UNESCO finds the political will and the financial resources to do so, it will face substantial opposition. In the present moment of history, the discourse preferred by dominant political and economic interest groups sometimes seems to align more closely with the interests of the marginalized because of the peculiar dynamics of a constellation of creative waves of destruction. Schumpeter's destabilizating waves of destruction are indeed a threat to those whose economic and political interests are disturbed by the deployment of social media and other forms of digital technology and the economic crisis, but we should not ignore the resilience of those in authority. They have the capacity to seek innovative means of securing their interests through their appropriation of a more inclusive discourse that of course needs to be examined critically. But, we need to investigate their actions because the policies ostensibly aligned with a more participatory, inclusive and empowering bottom up discourse may be, and in many cases, demonstrably are, implemented in ways that display the persistence of learning failures.

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1 WSIS refers to the World Summit on the Information Society (2003/2005) which established goals and an action plan (UN/ITU, 2003a, 2003b, 2005a, 2005b).

2 See (United Nations, 2000), Resolution 55/2.

3 Professor Sachs is the Director of The Earth Institute, Quetelet Professor of Sustainable Development, and Professor of Health Policy and Management at Columbia University..

4 The prediction in 1965 by Gordon Moore that the data density on integrated circuits would approximately every 18 months which it more or less has thereby supporting ever

faster information processing.
5 This account of the speech is a paraphrase based on notes taken during the opening session of UNESCO WSIS+10 conference.
6 Constitution of UNESCO at http://portal.unesco.org/en/ev.php-URL_ID=15244&URL_DO=DO_TOPIC&URL_SECTION=201.html.
7 See http://creativecommons.org/.
8 Case provided by Dr Indrek Ibrus, Tallin University, Estonia.
9 Case provided by Tim Davies, PhD student, University of Southampton.
10 Case provided by Mike Powell, Director IKM-E Programme.
11 Case provided by Dr Pollyanna Ruiz, LSE
12 On gender see also (Buskens & Webb, 2009; Hambuba & Kagoiya, 2009; Primo, 2003).
13 Case provided by Dr Dan Paré, University of Ottawa..
14 Case contributed by Dr Linje Manyozo, Head of Social and Behaviour Change, National AIDS Commission, Malawi.
15 See http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/wsis/WSIS_10_Event/wsis10_recommendations_en.pdf
16 Clearly, we are not the only advocates of these approaches.