Understanding the International ICT and Development Discourse: Assumptions and implications

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Abstract

This paper seeks to understand the assumptions underlying the international public ICT and development discourse and the implications of these assumptions for policy makers and development practitioners. The argument is situated within a power-knowledge framework and in broader critiques of the development industry. A discourse analysis of the public ICT and development discourse was conducted. Three main themes have been explored: 1) the construction of the category of 'information-poverty', 2) the construction of what counts as legitimate/valuable information and knowledge, and 3) the developmental aims of these programmes, in particular models of progress and catch-up to industrial country ideals. The paper argues that assumptions of technological determinism and a view of technology as a neutral tool for development underlie the ICT and development discourse. The use of technology as an index of development reproduces the binary opposition between the developed and the underdeveloped that has been widely critiqued within the field of development. The commonly assumed model of ICTs and development is grounded in these assumptions of technological determinism, which allow the complex political factors influencing poverty and inequality at local, national and international levels to be hidden, or at least go largely unquestioned.

Introduction

> *Knowledge is like light. Weightless and intangible, it can travel the world, enlightening the lives of people everywhere. Yet billions of people still live in the darkness of poverty – unnecessarily* (World Development Report, 1999, p.1).

The past decade has shown an increasing acknowledgement of the importance of information and communication technologies (ICTs) for development at international, national and local levels. ICTs have been shown to have development applications in education, governance, environmental monitoring, health, human rights promotion, economic growth and other areas. Concurrently, the problem of the growing technology and/or knowledge gaps between and within countries, placing certain groups of people further in the shadow regions of global information flows, has been noted. These gaps persist both at the level of access to ICT infrastructure, and in terms of the form of information conveyed and who is able to use, understand and produce the information and knowledge which ICTs potentially make accessible (Opoku-Mensah, 1999; Primo Braga *et al*, 2000; Mansell and Wehn, 1998).

The quote presented at the outset claims that knowledge has the potential of *'enlightening the lives of people everywhere'*, and this theme runs through much of the ICT and development literature. Such assumptions underlie the emergence of a classification of people as 'information-rich' or 'information-poor' depending on the availability of ICTs. In this paper it will be argued that this category of people, the 'information-poor', forms an integral part of a discourse of development based on assumptions of a binary opposition between the developed and underdeveloped, the imperative being for the underdeveloped to 'catch-up' with the developed – the essence of modernisation theory. This binary understanding of what it means to be developed or underdeveloped has been shown to be too simplistic an understanding of both countries/societies themselves and of what development and change

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means (Crush, 1995; Munck and O'Hearn, 1999; Nederveen Pieterse, 1998; 2001). In practice many development initiatives attempt to overcome this binary opposition through the use of concepts such as 'developing' and 'newly developed', however, it can be argued that these terms still represent points between the two extremes of developed or underdeveloped, even if unintentionally.

Further, such assumptions render those who are to be developed passive in the development discourse and development projects and so limit the potential for ICTs to be used to challenge structures of poverty. Instead, the aim becomes to provide as much technology to as many people as possible so that they may emulate the developed world. Burkett (2000, p.692) claims that "to understand inequality under these 'new' global social conditions it is necessary to be critical of and to deconstruct the elements of this society which are so easily thrown together in the catch cries which capture media attention".

This is what this paper sets out to do, through an exploration of the public ICT and development discourse. As such, the paper can be seen as an addition to a growing literature that attempts to develop "a deeper and more balanced understanding of the relationship between ICTs and development" (Heeks, 2002, p.1; see also Burkett, 2000; Loader, 1998; Schech, 2002). This analysis is a critique of the typology created of the 'information-poor', and of the resultant ICT and development model. This does not imply a critique of the processes of development or change *per se*. ICTs have many important contributions to make for holistic development, but not when narrowly applied in terms of models of development as catching-up to developed country ideals. It is hoped that the discourse analysis presented here is a starting point for a recognition of the assumptions commonly made and so may allow for a reconception of ICTs and development to emerge in a manner that could be enabling of local development processes towards locally defined development outcomes.

This issue is situated within the realm of critical development theory and social theories of technology (DuBois, 1991; Esteva, 1987; 1992; Crush, 1995; Pfaffenberger, 1992). The analysis of the public ICT and development discourse has focused on three main themes:

1. The construction of the category of 'information-poverty'.
2. The construction of what counts as legitimate/valuable information and knowledge.
3. The developmental aims of these programmes, in particular models of stage-like catch-up.

Critical development theory

Development theory, practice and the 'development industry' that has emerged from this have been increasingly criticised since the late-1980s and early-1990s, from a theoretical basis as well as based on evidence of the failure of many development projects to improve the quality of life of those defined as underdeveloped. This critique commonly takes the form of a problematisation of the grand narratives that have defined development thinking, be that the entrenchment of markets, the progression of capitalism or in this case, the emergence of an information society. Out of such narratives has emerged a classification of countries as 'developed' or 'underdeveloped', using the industrialised countries as a yardstick. In response, a variety of development policies, programmes or 'solutions' to the 'problem' of underdevelopment have been designed, and progress has come to be accepted as a linear process through which people or countries move towards the position of being developed as exemplified by the industrialised countries. There is an increasing body of evidence that shows that such an understanding of development is too simplistic and does not take into account the specificity of local geographies, cultures and social structures, nor the complexities of international politics (Esteva, 1987; 1992; DuBois, 1991; Sachs, 1992a; Crush, 1995; Leys, 1996; Nederveen Pieterse, 1998; 2001; Munck and O'Hearn, 1999; Tucker, 1999). The participatory movement within development is one of several attempts to overcome this.

This developed versus underdeveloped binary opposition is also set up at the level of information and knowledge production and the criteria for evaluation thereof. Holtendahl *et al* (1999 p.16) note that "the reproduction of western hegemony is assured through long established practices of production and dissemination of knowledge. The criteria of what

counts as knowledge continue to be defined in the academic centres of the West. The dissemination of this knowledge is based on notions of *transfer of knowledge* from the West to the South". Assumptions about the need for a transfer of knowledge for development purposes are central within the ICT and development discourse and justify the existence of a category of people known as the 'information-poor' or 'knowledge-poor'. In addition, the development industry produces knowledge of the underdeveloped and the means of addressing the problem of underdevelopment. Hobart (1993) argues that this concurrently produces ignorance, since the underdeveloped are positioned such that they come to depend on the information and knowledge of the development experts to assist them in their quest for progress and catch-up. The result is that the wealth of local understandings, knowledges and experience that could potentially aid development efforts are often devalued and their potential contribution to change processes thus wasted. This paper draws on this line of critique and applies it to the focus on ICTs and development that has become increasingly important in debates about development at international, national and local levels. Although the paper highlights those approaches that reproduce these binaries, it should be emphasised that there are efforts on several fronts to overcome this. However, it does seem that with respect to ICTs and development many in the field show an ignorance of the longer history of the role of communications and technology within traditional development paradigms.

Methodology

This research seeks to understand the workings of the international level public ICT and development discourse. A discourse can be described as a particular system of making sense of the social world out of which commonly accepted actions emerge. Further, a discourse produces a set of categories – of objects outcomes and of persons – that form a framework through which the social world is both understood and produced through the resultant practices (e.g. ICT and development projects). These assumptions guide our development practice, thus the aim of unpacking the ICT and development discourse becomes one of attempting to make clear the assumptions and understandings that underlie ICT and development efforts so as to challenge ourselves and thus to continually work towards more appropriate development outcomes.

Seven international organisations judged (on the basis of references made in the literature) to be important role players in the international ICT and development field were selected to focus on as representatives of the public ICT and development discourse. The websites of the selected organisations were carefully scanned during August and September 2000 and all documents and other information that had to do with ICT and development were selected for the analysis. In total, 101 documents plus general website information were included in the analysis[1]. Beyond these documents the discourse analysis has also drawn on the ICT and development literature generally (for more details please see Wilson, 2001).

Texts from the websites of the following organisations have been included in the analysis:

- Global Knowledge Partnership
- International Development Research Centre (IDRC)– ACACIA programme
- International Telecommunication Union (ITU)
- UNESCO – Webworld
- United Nations Development Programme (UNDP) – Info21
- USAID Leyland Initiative
- World Bank – InfoDev programme

The documentation made public on these websites is used as an entry point for an exploration of the *international public* ICT and development discourse. Since these organisations can be seen to be important players in the ICT and development arena, the information available on their websites can be taken as an indicator of public discourse. A comprehensive selection of all projects, policy or other documents concerning ICT and development that have been produced by these organisations was beyond the scope of this research. However, the selection of texts used here provides a good first level coverage of

[1] A full list of the documents selected can be obtained from the author.

the public discourse to which the various actors involved in ICT and development are exposed and which they themselves produce through their projects, reports, speeches etc.

Discourse analysis involves detailed reading and rereading of the selected texts. Two interrelated stages were followed. First was a search for patterns/themes in the texts, both in terms of difference and consistency; and second was a consideration of the functions and effects of the categories identified. To do this recurring themes in the documents were identified and then a careful coding procedure was followed to further explore the details of these themes (see Wilson, 2001 for additional methodological details).

The ICT and Development Discourse Unpacked

In this section a very small sample of exemplary extracts will be presented from the large sample of texts and extracts used in the analysis (for the detailed analysis please see Wilson 2001). For each point of the argument one or two extracts are provided with reference made to other similar extracts in footnotes as further evidence. Beginning with a description of a central tension inherent in the ICT and development discourse the argument will be developed by first exploring how the notion of information-poverty is constructed and implies a specific and largely economic understanding of what is valued as information. Finally, it is shown how these themes come together in a discourse of development very much like the widely criticised modernisation theories of the 1960s (see Schech, 2002 for a similar argument). In the quote presented at the outset we saw knowledge being likened to light that would spread and 'enlighten the lives of people everywhere'. This is just one example of the increasingly common presentation of information or knowledge as the 'saviour' of development efforts if developing countries respond "with courage and willingness" (See Extract 1 below); if not, further exclusion from the global political economy is predicted.

Extract 1

> And let me lay my cards on the table at the start by saying that in my mind there really is no more critical question facing the developing world today than how to face up to the challenges and opportunities offered by the Information Revolution, and particularly the phenomenon of the Internet. It is now the two edged sword that is leading the process of globalisation: wounding those who don't quickly enough grasp how to use it by leaving them ever further behind, but providing unprecedented benefits for those with the courage and willingness to grasp its potential to drive change…ICT is transforming everything it touches, from politics, to business, to culture, to education and to health. And what we have seen so far is just the tip of the iceberg. But it is an iceberg the developing world is currently at more risk of crashing into than making use of[2].

The above extract, like many others, sets up a clear dichotomy between the developed and the developing world. The focus is on how to overcome this clear divide, through development. We see the responsibility for being 'left behind' largely accorded to the developing countries. Only those "with courage and willingness" are able "to make use of the iceberg" rather than crash into it. This theme runs throughout the ICT and development discourse – the responsibility for non-access to the information society is accorded to developing countries. Such claims do not take account of the complex global policy issues, of trade regulations that favour the developed countries and of the array of problems faced by many developing countries, which compete with ICT development for scarce resources. It does not seem unreasonable to suggest that rather than ICTs being the "most critical question facing the developing world" that for many countries feeding their population or dealing with HIV/AIDS is perhaps more critical.

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[2] Malloch Brown, M (2000). *The Challenge of Information and Communications Technology for Development.* UNDP Address in Tokyo, July 3, 2000.
See also, Tallero, E. and Gaudette, P. (1996). *Harnessing Information for Development: A proposal for a World Bank Group Strategy*. www.worldbank.org/html/fpd/harnessing/index.html.
UNDP, Choices Magazine (2000), Special on ICT. www.undp.org/info21.
InfoDev general information (2000), www.worldbank.org/infodev

The perspective represented in this extract assumes that ICTs are neutral tools for development, which is itself presented as an apolitical construct (see also Schech, 2002). ICTs can certainly be an important tool for dealing with development issues, but without political and economic changes at both international and national levels these technologies alone are not going to solve a country or region's development challenges. In a similar vein to Extract 1 the UNDP Choices magazine also overlooks the political nature of development when it is noted that the Internet, "by eliminating time and space gives us unprecedented means of overcoming two of the root causes of poverty – ignorance and isolation".

There is however a tension within the ICT and development discourse between those who see ICTs as the development saviour and those who are more sceptical and who do attempt to draw attention to the politics within which a country's development efforts are embedded.

Extract 2

> For every example of global progress, there is always a counter example which illustrates that prosperity has not been broad-based and that development has not been equitable. While world trade and foreign direct investments have increased and the price of communicating has decreased, the world also has to face the reality that over one billion people do not have access to clean water, about 840 million are malnourished and one out of seven children of primary school age are out of school. If basic provisions such as these are still wanting in many parts of the world, it is almost meaningless to talk of cellular-phone penetration in these least developed economies…This situation gives rise to a bizarre global economy operating with two parallel universes, where on one hand we see mergers and acquisitions worth billions of dollars between dotcoms and telecommunication companies, and on the other, a situation where the poor continue to wallow in abject poverty. This dichotomy does not yet have a bridge and as a result those who are marginalised cannot put the new global knowledge economy into any context. To them, the basic challenge remains the same: literally to survive. For the majority of the people there is no great paradigm shift – and there may never be one[3].

Extract 2 highlights the complexity of development and poverty alleviation, and warns against making the assumption that ICTs will provide a new magic solution to enduring development problems. The binary opposition of a growing divide between countries, of "two parallel universes", runs through both extracts 1 and 2 although it is used for a different purpose in each of the texts. This simple juxtaposition of developed versus underdeveloped is problematic, even when used to highlight structural factors affecting development, because it creates an either-or understanding of ICTs and how they may be used. We have people who do not have access to the technology and those who do and benefit from the information society as experienced in the industrial countries, but positions between these extremes are seldom considered. Such an understanding makes the possibility of alternative uses of ICTs difficult to imagine and the potential value of the technology as a tool to enhance other development outcomes is easily overlooked as the aim and focus of development becomes solely to bridge the digital divide – to provide people with technology. The final sentence in Extract 2 is a powerful plea for recognition that for many in developing countries survival is still the issue. Focusing too much attention on the "great paradigm shift", indeed assuming unproblematically that this shift has occurred globally, that we live in a 'new' global information society, may detract from the very real – and more difficult to address – survival needs of many poor people throughout the world (see also Burkett 2000).

The construction of 'Information-poverty'

Central to the claims that we now live in a global information society is the social construction of a category of people known as 'information-poor'. While there are technology divides internationally and within countries, focussing on the concept of 'information-poverty' as *the*

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[3] YAB Dato Seri Abdullah Haji Ahmad Badawi (2000) Speech at the GKII Conference by Deputy Prime Minster of Malaysia. www.globalknowledge.org.
See also, United Nations Economic and Social Council (2000). *Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy*. Report of the Secretary General – advanced unedited copy. www.undp.org//info21.

new form of poverty in the information society creates a risk that the provision of ICTs is seen to combat other forms of poverty and oppression with deep structural roots. Instead, the lack of access to ICTs should be seen as an additional facet of being poor in today's world. Further, assuming that people are 'information-poor' because they do not have access to the specific forms of information that are made available through ICTs, devalues the information and the knowledge that poor people do have. This has been a criticism of development approaches for the past two decades, and attempts to avoid devaluing local knowledge is a fundamental starting point of participatory approaches to development (Chambers, 1999), but it seems that within the ICT and development discourse these insights have gone largely unnoticed even when participatory claims are made.

Extract 3

> Time will be of the essence. Already the fruits of the information revolution are skewed and inequitably distributed: developing countries are largely left behind and are little more than fringe players at best, observers at worst of the dynamics and benefits enjoyed by many industrialised countries. Indeed, a new type of poverty – information poverty – begins to afflict developing countries…Information technology has a place alongside adequate food, health care, education, and other fundamentals. By taking this place it has broadened our definition of poverty. Those people or countries who cannot or will not participate fully in the new information economy will find it all the more difficult to climb out of poverty[4].

Extract 4

> We must avoid contributing to the gap between the information haves (expert, academics, researchers, policy-makers etc) and the information have-nots (usually the ultimate beneficiaries of development work) that can emerge when we create Internet applications to serve only privileged researchers and bureaucrats. In particular, we must strive to find ways to bring knowledge producers, such as researchers and policy-makers, closer (in the social as well as the geographical sense) to the other less recognised knowledge producers: the people who are the ultimate beneficiaries of their development programmes[5].

Extract 3 provides an introduction to the construction of the concept 'information-poverty'. ICT is being placed within a range of basic needs that are part of currently accepted definitions of poverty. This implies some recognition of the fact that 'information-poverty' is a component of general poverty, and the author acknowledges that the definition of poverty has been broadened to include information-poverty. This is in line with the argument being made in this paper that lack of access, in the widest sense, to ICTs has become an additional factor for people living in conditions of poverty. However, the extract ends with the claim that those who do not (and implies that some choose not to) "participate fully in the information economy will find it all the more difficult to climb out of poverty". We see ICT development being presented as an essential component of poverty alleviation in all its facets and the urgency with which countries should respond is highlighted in the claim that "time will be of the essence". A technical solution to underdevelopment is provided without regard for the complex political forces at play and developing countries are implored to participate in the new information society that has been stripped of its political attire. Yet, participation in the information society or economy requires far more than ICT development, and for some countries many factors, including the structure of the global economy and international trade, make participation potentially impossible.

Very few texts specify or describe exactly who the information-poor are. It is more common for this category to be taken as a given and used as part of whatever argument is being put forward. In general it seems that this group of people are assumed not only to be information-poor, but also to form a largely homogenous group that does not require elaboration or contextualisation. Failure to take the complexity of communities into account has implications

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[4] d'Orville, H. (2000). *Towards the Global Knowledge and Information Society – The challenge for Development Cooperation.* www.undp.org/info21.

[5] Richardson, D., (1998). The Internet and Rural Development, in Richardson, D and Paisley, L. (1998). (eds.),. *The First Mile of Connectivity.* Rome: FAO.

for the types of interventions planned and it is unlikely that contextually relevant approaches to the use of ICTs for development will be the outcome. For example, Guijt and Shah (1998) describe gender cleavages within communities and the importance of taking gender relations into account for successful community development.

Extract 4 above is one of few examples where some attempt is made to define who the information-rich and information-poor are in an attempt to critique this division. At first glance we see that the information-haves are the experts, researchers and policy makers, while the have-nots are all those who are beneficiaries of development projects. The last sentence is important because although the paragraph begins by setting up dichotomy between the information-haves and have-nots, we see that the author recognises the so-called have-nots as also being knowledge producers and further, out attention is drawn to the fact that these knowledge producers are less recognised than the experts, researchers and policy-makers. This provides an example of the argument made by Hobart (1993) that through development and the categories thereof ignorance is produced. There is some evidence within the public ICT and development discourse of attempts to work with local knowledge producers as Extract 4 implies and the extract below shows, and it is hoped that such an approach will become the norm rather than the exception in the ICT and development field.

Extract 5

> Acacia will work mainly with rural and disadvantaged communities, and particularly their women and youth groups. Often these communities find themselves isolated from the ICT networks to which their urban counterparts increasingly have access. Yet at the same time these communities demonstrate enormous creativity and enterprise living in an environment with little in the way of services and information. With Acacia, IDRC intends to support this creativity and enterprise by demonstrating the benefits of a local capacity to use information and communication in solving local development problems. By sharing information and communicating among themselves and with others, these communities can hopefully remove certain barriers to development and speed up its progress[6].

Extract 5 provides an example of an approach to ICTs that does not make the same assumptions about information-poverty and recognises the role that local people have to play, but such an emphasis is not commonly found in many other ICT and development texts. The creativity and enterprise of the poor are affirmed and become part of the development process. There are other examples showing a recognition of the importance of local contexts in the design and implementation of ICT projects, although often the local context is framed as a problem. For example, Rose (1999, p.14, emphasis added) states that "a more difficult problem which is under study in the pilot projects [multi-purpose community telecentres] is that of constructing appropriate telematics and informatics applications and content for developing country communities *steeped in traditional cultures and values* and with low levels of technology literacy". This quote typifies the tendency to set up a traditional-modern dichotomy between those who are seen as being 'information-poor' and "steeped in traditional culture" and those who are not. Even though there is some recognition of the need for locally relevant forms of technology, such approaches fail to recognise and make use of the wealth of information and knowledge that poor people have (as is recognised in Extract 5). This occurs partially because of the understandings of what counts as valuable information and knowledge within the ICT and development discourse.

Information and Knowledge

Throughout the ICT and development discourse information and knowledge (terms which are often used interchangeably) are commonly confounded with availability of technology. But we need to question whether lack of access to ICTs implies an information or knowledgeless context, or rather just the absence of certain forms of information. We should recognise the existence of a digital-divide between those who have access to this particular technology and those who do not, but when this is extended unquestioningly to imply information or

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[6] Acacia (1997). *Communities and the Information Society in Africa: Program Overview.* IDRC. www.idrc..ca/ACACIA/5e.htm.

knowledge divides the problem of technological determinism takes hold. While ICTs may provide a means of accessing certain types of information that might be needed and might not be available, the concern is that we need to be careful not to overlook the information that is available, and may not require ICTs for dissemination, so that we can also make use of this valuable resource in development efforts.

In addition, exactly what is meant by the terms information and knowledge is seldom specified in the ICT and development texts showing a lack of a conceptualisation of the contested nature of knowledge and of the existence of various knowledge systems and practices (see Marglin, 1990; Hobart, 1993; Heeks, 2002). Also important is the fact that information is generated in and for a specific context and this does not mean that it is relevant or needed in another context. Within the ICT and development discourse, the terms information and knowledge are sometimes used very broadly and other times quite specifically depending on the argument being made. It is most common for an economic definition of information and knowledge to be assumed although government information, health information, agricultural information etc. are also mentioned (for further examples see Queau, 2000; World Development Report, 1999; Report of the meeting of high-level panel of experts on ICT, 2000).

Extract 6

> ICTs serve as a transmission belt to generate, access, disseminate and share knowledge, data, information, and communications and best practices. Three central features are at the heart of the knowledge revolution. Information and knowledge are instantaneously accessible, they are transportable and can be simultaneously distributed to an unlimited number of users. Indeed, they cannot be depleted. The use by one does not prevent the use or consumption by somebody else. They cannot be owned, though their delivery mechanisms can. Selling them entails sharing, not exclusive transfer. Indeed, information and knowledge represent a global public good[7].

The above extract is but one example of how within the ICT and development discourse information and knowledge are used interchangeably and approached from an economic perspective, as a commodity. Similarly, Talero and Gaudette (1996 p.1), writing for the World Bank, state that "information is a factor of production, in a category with land, capital, and energy". Extract 6 claims that information is a different form of commodity, with different characteristics from what we normally understand as commodities, but it is a commodity nonetheless. Such a definition of information may be relevant at a national level for economic development. However, much of the information that may be needed at the community level is likely to be for reasons other than for economic purposes, such as information about education, social services, news, recreation etc. It is this dominant focus on an economic concept of information that underlies the construction of the notion of 'information-poverty' and the claims that the provision of information will solve many other development problems. Burkett (2000, p.691) alerts us to this issue when she states that "It seems that what is needed to resolve these 'real' problems is not further information, but rather things which are much more difficult, time-consuming and probably not as glitzy as ICT development – that is, political will, recognition of personal and social responsibilities, and ultimately action on the part of governments and civil society".

In Extract 6 it is unquestioningly assumed that information and knowledge cannot be owned and so "represent a global public good". Such a claim is plausible when made in an economic sense, although we might want to question the global relevance of this public good and to

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[7] United Nations Economic and Social Council (2000). *Development and International Cooperation in the Twenty-First Century: The role of information and communication technology in the context of a knowledge-based global economy*. www.undp.org/info21.
See also, Queau, P. (2000). *Governing the Global Knowledge Society*. UNESCO Webworld Points of View. www.unesco.org/webworld/points_of_views/queau_9shtml.
World Development Report (1999). World Bank.
Report of the meeting of high-level panel of experts on Information and Communication Technology (New York, 17-20 April, 2000), hosted by UNDP. www.undp.org/info21
Riscard, J-F. (1996). Forward, in Talero, E. and Gaudette, P. (1996). *Harnessing Information for Development. A proposal for a World Bank Group Strategy*. The World Bank. www.worldbank.org/html/fpd/harnessing/index.html).

whom the externalities accumulate. The main difficulty with the use of the concept of a public good is that this term allows people to make assumptions about public *access* to information. We cannot assume unproblematically that information and knowledge are a global public good in terms of who has access to this good when we find that 64% of Internet Hosts are located in OECD countries and ¾ of websites are in English which is a language spoken by 1 in 10 people throughout the world for example (Primo Braga *et al*, 2000). Claims about the freely available and public nature of information thus mask the complex power relations involved in the production and control of information and knowledge. Cases of indigenous knowledge being recorded by western researchers and then patented by the researchers with no benefit for the communities from which this knowledge came is but one such example (Mitter, 2000). Queau (2000) highlights the need to address this issue in the following quotation, "the definition of the 'global common good' cannot be left to bureaucracies. It implies the emergence of a global political legitimacy and the creation of a global civil society. The market cannot be the answer to all problems. In particular the market is not concerned by social redistribution".

Furthermore, the issue of what *access,* to ICTs and the information these technologies can provide, means also needs careful consideration. Simply ensuring that all people have ICTs within walking distance for example does not mean that these people will have the required education and skills, financial resources and other factors required to make use of the technology and so to have access to the information provided. Accessible information is also useful information and information that is socially and culturally relevant, and much of the information commonly made available through ICTs is arguably more relevant for a developed country context.

Models of ICT and development

Thus far we have considered the construction of the category of 'information-poverty', and the privileging of an economic understanding of information and knowledge as important components of the ICT and development discourse. Some of the tensions inherent in the discourse have also been described. In this final section these arguments will be brought together to show how a particular understanding of development and the outcome thereof is emerging from the discourse and practice of ICT and development.

As argued in the above sections, the generally accepted model of ICT and development is largely premised on the dichotomy that is set up between the developed and underdeveloped, the information-haves and have-nots, the modern and traditional. Extract 7 provides one further example of this dichotomy, and also shows how the digital divide is conceptualised as a race that developing countries are losing.

Extract 7

> Economies and societies not partaking in this global race towards the knowledge society cannot rest lest they lose out forever. In a world where competitiveness reigns supreme, a comprehensive and strategic approach to the multifaceted challenges and opportunities of the global information and knowledge society and economy is indispensable. The ultimate objective is to build a knowledge and information society, i.e. a society endowed with the ability and capacity to generate and capture new knowledge and to access, absorb and use effectively information and ICTs[8].

Extract 7 provides our first insight into the desired outcome of ICT and development efforts. We are supporting the competitive global economy, and aiming to develop the "capacity to generate and capture new knowledge and to access, absorb and use effectively information

[8] D'Orville, H, (2000). *Towards the Global Knowledge and Information Society – The challenges for Development Cooperation.* www.undp.org/infodev21.
See also, Infodev General Information, www.worldbank.org/infodev.
ITU, Summary Record of the Third Meeting of the Telecommunication Development Advisory Group (TDAG), Geneva, (2-3 March, 2000).
Kelly, K (1997). New Rules for the New Economy, (September 1997). *Wired Magazine*, United States.
www.unesco.org/courier/1998.
Malloch Brown, M. (2000). *The Challenge of Information and Communications Technology for Development*. Address in Tokyo, July 3, 2000.

and ICTs". This outcome, while not in and of itself undesirable, is based on the western economic model, where information and knowledge are regarded as a commodity, and the change processes that the leaders in this race have undergone have become the yardstick for development. Once again, the global relevance of the information society and an information economy is assumed. The global economy is taken as a given and there is no suggestion that perhaps technology or the market should slow down as has been argued by various critical development theorists and environmentalists (Escobar, 1995; Sachs, 1992b; Lummis 1992). Rather, developing countries are impelled to work harder to catch-up. Few possibilities for alternative uses of the technology are provided. It is assumed that building the knowledge society will automatically solve other development problems, that development is reducible to an information deficit, and thus that ensuring participation in the global knowledge race will ensure development.

Debatable assumptions are thus made on two levels. Firstly with respect to the western economic model which is assumed to be universally applicable and desirable. Secondly, even if we accept the ICT and development model from western countries, that this will automatically lead to broad based development and poverty alleviation. In other words, assuming that developing countries have the required conditions both within the country specifically and due to their position in the global political economy to embark on successful development in the mould of developed countries is problematic.

Generally, the definition of the information society remains broad and therefore pliable depending on the needs of those leading the race, one of these needs being the extension of telecommunications markets to the developing world (Shields & Samarajiva, 1990; Sharrock, 1995; Burkett, 2000). The metaphor of a global ICT and development race is central to the discourse and was evident in many of the texts considered, and even those who are critical of the categorisation of societies as developed or underdeveloped seem to follow this theme. Based on the conception of a global technology race we find many arguing that developing countries have some advantage in this race since they can potentially leapfrog stages of development that the industrialised countries have already completed.

Extract 8

> The distinction between 'developing' and 'developed' nations is somewhat misleading and tends to perpetuate the image of the world as composed of one group of rich 'donor' countries and another, the larger group of poor and passive 'recipient' countries. In fact, some 'developing' countries, particularly in Asia-Pacific and in Latin America, are catching up quickly with the so-called 'developed' countries. These emerging economies are leapfrogging technology[9].

In the above extract we see how even those who are critical of the developed-developing dichotomy, themselves reproduce that dichotomy – so central has this understanding of the world become. Making a similar point, Lummis (1992, p.44-45) states that "in polite development discourse there is never talk of levelling down, only of levelling up. That's what 'catching-up' means…The idea of a world development presupposes that everyone in the world is or ought to be playing the same game". In Extract 8, even though the concepts of 'developed' and 'developing' are questioned, the author continues to use this discursive framework, 'to play the same game', when talking of some countries catching up to others. What are these countries catching up to? Does this language not simply reproduce oft-criticised notions of stage-like development, with some countries lagging behind others in their striving to reach the industrial country ideal? Would it not be more fruitful to ask instead 'in what ways could my country use ICTs to its benefit, whether or not this follows global trends?'

Extract 9

> The information revolution offers Africa a dramatic opportunity to leapfrog into the future, breaking out of decades of stagnation or decline. Africa must seize this

[9] Ernberg, J. (1998, p.1). Telecommunications for sustainable development. In Richards, D & Paisley, L (eds). *The First Mile of Connectivity*. Rome: FAO. www.fao.org/sd/cddirect.

> opportunity, quickly. If African countries cannot take advantage of the information revolution and surf this great wave of technological change, they may be crushed by it. In that case, they are likely to be even more marginalised and economically stagnant in the future[10].

A concept such as leapfrogging is based on a framework that assumes relatively fixed, defined stages of development, some of which may be left out or leapfrogged. Such an understanding of development has been widely criticised, yet we find these same ideas repeating themselves in the current trend of ICT and development. Once again we have examples of technological determinism and Extract 9 claims that this technology could allow Africa to "break out of decades of stagnation or decline". Yes, mobile phones, satellite technologies and voice recognition software, for example, do potentially overcome some of the contextual constraints in developing countries and are an example of 'leapfrogging' in the sense that vast landline infrastructures may not be needed. In response, it can be argued that the ability to leapfrog in this sense demonstrates that there are multiple paths of development possible using ICTs. Mobile telephones have had this effect in many countries, South Africa included. But, it is also questionable how many developing countries could sustainably afford the higher-level forms of technology or have the required skill levels to make widespread use of them without being dependent on outside support, both financially and technically – as is argued in Extract 10 below.

Extract 10

> Nonetheless, it has also been recognised that unless a concerted effort is made, information technologies risk widening the gap between developed and developing countries, creating a 'digital divide' between North and South. Indeed, although the deployment of information technologies provides opportunities for leapfrogging, allowing developing countries to bypass stages of development, considerable obstacles stand in the way. Consequently, most developing countries are still a far cry from making the transition to a knowledge-based information society[11].

We thus have a two-pronged critique. Firstly, development models based on concepts of leapfrogging are problematic in that assumptions of stage-like, linear development can result. Secondly, even if this model of development is accepted, in many countries the factors needed for such an approach to be successful are not present. Only when understandings of development as catch-up to western ideals are questioned are alternative approaches with alternative outcomes, which are likely to be more relevant in a developing world context, able to emerge. Further, as noted above, the availability of technology cannot be equated with access and use since both are intricately woven within the local sociotechnical system including the political and economic constraints facing developing countries.

It has been shown that within the ICT and development discourse the urgency of catching-up, and preferably leapfrogging, for the developing countries who are lagging behind in the global ICT race is highlighted, and the consequences of not catching-up are regularly specified. These claims follow the common themes of technological determinism as well as the responsibility for not joining the information society being placed on developing countries. Many developing countries, however, have little control over their ability to enter the global information society given the complexity of the global policy environment. The many trade-offs that developing countries must face in managing scarce resources cannot be ignored.

Extract 11

> The developing world has a right to voice our skepticism about this brave new world. In the half-century that many of us have gained independence, we have not seen our countries go from strength to strength from the struggle for emancipation to being

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[10] Talero E. and Gaudette P. (1996). *Harnessing Information for Development. A proposal for a World Bank Group Strategy.* www.worldbank.org/html/fdp/harnessing/index/html.
See also D'Orville, H (2000). *Knowledge and Information: New Levers for Development and Prosperity*. UNDP. www.undp.org/info21.
Acacia (1997). *Communities and the Information Society in Africa: Program Overview.*

[11] Uimon, P. (2000). *Evaluation of the UNDP/BDP Information Technologies for Development Programme (ITDP).* www.undp.org/info21.

> treated as equals on the world stage. We have always been, and may continue to be, shut out of charting the common future of humanity…We believe that there needs to be an honest reassessment in the world-view of the richer, developed countries. Much as they have hailed the freedom of expression and the plurality of ideas as the bedrock of their civilisational success, they seem to be welded to a dogmatic intellectual conception of the international political economy…It is this very same dogma [structural adjustment and global economic neo-liberalism] that threatens to ignore the pleas of the developing countries in the era of the new global knowledge economy. The deification of the market with no regard for social and human development will not yield a thriving global knowledge community, but a cyber-elite alliance of technopreneurs and western-dominated international financial institutions with a mass of nations left behind permanently[12].

Extract 11 summarises the argument being made throughout this paper. The existence of technological inequalities, which must be addressed, is highlighted, but the roots of this inequality are problematised. The "brave new world" is regarded with scepticism since the claimed benefits are accruing to only a few. This extract argues from a political standpoint, and calls for answers to political issues, not just technological ones. The economic focus and "deification of the market" within the field of ICT and development is questioned. Instead, a call is made for a turn to social and human development to counter the increasing emergence of a "cyber-elite alliance" which is neatly camouflaged within much of the largely apolitical ICT and development discourse.

Conclusion

This paper has attempted to provide an unpacking of the international public ICT and development discourse, the common assumptions that are made and their implications. It has been shown that the basis of this discourse is the dichotomy set up between those countries that are defined as developed and those that are developing, which is then extended to produce a category of people called the 'information-poor'. This dichotomy fits neatly into a model of development based on automatic and unproblematic catch-up, leapfrogging, and progress to the ideal represented by the developed countries. The model of development is grounded in assumptions of technological determinism – assumptions that ICTs are a magic development solution – and this allows the complex political factors influencing poverty and inequality at local, national and international levels to be hidden, or at least to go largely unquestioned.

Problematising this discourse and its assumptions is not a negation of the potential role of ICTs for development initiatives, but instead is a critique of the apolitical technological determinism underlying much of the international ICT and development discourse. Moving beyond models of development based on catching up to western ideals, to the production of locally specific alternative development processes and outcomes, is essential if we hope to make use of these powerful technologies to improve the quality of life of the world's many and diverse groups of poor people who are currently also excluded from the information society.

The general argument of this paper can be finally summed up with the following quotation taken from a workshop held in 1997 to explore potential global scenarios for the future of ICTs. "By adopting an uncritical approach most countries gain access at the expense of

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[12] YAB Dato Seri Abdullah Haji Ahmad Badawi, (2000). Speech and the GKII Conference. www.globalknowledge.org.
See also, Mitter, S. (2000). Women in Knowledge Societies. Keynote Address. *Global Knowledge Women's Forum. Transcending the Gender information divide. Final Report.*
Rodriquez, F. Wilson, E.J. III (2000). *Are poor countries losing the information revolution?* InfoDev Working paper. May 2000. The World Bank.
Second Global Knowledge Conference (GKII). Report of the Global Knowledge Forum Proceedings (7-10 March, 2000). Kuala Lampur, Malaysia.
Hon Dato Seri Dr Mahathir Bin Mohamad (8 March, 2000). Speech at the GKII Conference. www.itu.int/ITU-D/bdtint/Brochure00/Director.htm.

substance. They can buy other countries' information, but they cannot generate their own. They fail to make the connection between information and development. They receive information and they expect to receive development, without working to make development in their own image" (Howkins and Valantine, 1997, ch5, p. 8).

It is hoped that this paper will challenge all of us working in the field of ICT and development to be critically aware of the assumptions that we commonly make and the implications of these assumptions for the types of ICT and development projects we design and implement. The radical challenge is for policy makers and development practitioners in developing countries to rethink the categories of the ICT and development discourse in order that ICTs might be appropriated in ways capable of subverting the current hierarchical structures of international development – and so to allow the technology to be used as a tool for locally specific, achievable and relevant development objectives. As is stated in the recent Human Development Report (2001, p.27), "technology is not inherently good or bad – the outcome depends on how it is used".

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