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Fostering diversity in knowledge societies: fault lines and intermediaries

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**Fostering Diversity in Knowledge Societies –
Fault Lines and Intermediaries**

by

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Introduction

The role of information and its communication (IC) in poverty reduction is of great concern to development practitioners and policy-makers. The relationships between information, communication and poverty and the value of IC strategies are also the subjects of scholarly research across several disciplines. Nevertheless, we need new lines of research if we are to challenge conventional wisdom more effectively and bridge the very substantial gaps that persist between theory and practice in this area. The IC needs of the poor interact with diverse IC sources, networks and media in complex patterns. In addition, new information and communication technologies (ICTs) are enabling changes in IC flows and in IC-related behaviours. Although, most of the applied literature in this field suggests that new ICTs offer great potential for poverty reduction, there is substantial uncertainty about the implications of ICTs for IC flows, for changing patterns of social networks, and for the conditions that might enable poor people to experience the expected beneficial ‘impacts’ of ICTs.

I want to suggest that we need to develop research that exposes some of the most persistent fault lines that give rise to these gaps in understanding and in the problems policy-makers face in designing and supporting IC strategies with the aim of contributing to poverty reduction. The need for research is more important in the aftermath of the World Summit on the Information Society (WSIS) in 2005. With an Action Plan in place,² new forums aimed at supporting implementation are being created such as the ‘Global Alliance for ICT and Development’ (GAID), chaired by Craig Barrett of Intel, which met in Kuala Lumpur in June 2006.³ There are numerous instances of IC interventions aimed at poor communities concerning health and HIV/AIDS, environment protection, entrepreneurship and literacy. These make use of a wide array of ICTs. However, there is remarkably little empirical research on the roles of intermediaries and their networks in these interventions, particularly with respect to their power to influence who listens and who acts in ways consistent with poverty reduction as a result of such interventions. Undertaking theoretically informed and critical research in this area is something that the academic research community can do – indeed must do – if we are seriously to tackle the goals embraced by the WSIS Plan of Action.

There is a need for new research that is both theoretically and practically oriented and that is interdisciplinary, capable of drawing together insights from several important, but distinct, literatures. I suggest that we can move forward by triangulating some of the lessons from research that has been informed by the diffusion of innovations, participatory communication and 'networks of practice' literatures. The last area of work is an important one that may not be familiar to those who study IC and ICT strategies. It will be familiar to those who work on studies of innovation, learning and technical change within organisations. This third body of theory can be helpful in drawing attention to the power relations that infuse poverty, information flows, the roles of information intermediaries, perceptions of the value of IC strategies, and the development potential of new ICTs.

If we are to foster diversity in the knowledge societies of the future a triangulated approach such as the one outlined in this paper will be crucial. Without it we run a very high risk that new 'ICT push' strategies will be financed in the name of poverty reduction but with little likelihood of ensuring that the potential benefits are widespread or sustainable. In the light of these considerations, the most pressing research questions with respect to both IC and ICTs for poverty reduction are these:

- What patterns, and changes in patterns, of attitudes and behaviour are associated with new IC resources (such as ICTs) within poor populations?
- What are the implications for established IC networks of practitioners?
- What are the distinctive roles of information intermediaries?
- How do these changing patterns influence the capacity of those in poverty to affect their own circumstances?

Critical Approaches to IC and ICTs

In the development policy literature, ICTs are frequently, but controversially, described as potentially transforming opportunities for poverty reduction. There is, however, little systematic evidence to assess this. In the literature, references to information, knowledge and ICTs are unclear (King and McGrath 2004) and little attention is given to differences between them. This is so despite the many volumes of empirical data on the diffusion of ICTs and changes in their accessibility and use that have been published in the last

decade.⁴ The interactions between IC and networks of relationships established using ICTs are much neglected. Much 'ICT4D' literature focuses on the 'developmental' value of IC, i.e., its contribution to economic prosperity or opportunity, but it underestimates the importance of 'non-developmental' factors. These issues must be better understood if we are to advance theory, policy and practice in this area.

One of the most visible fault lines that runs through research and practice in the IC and ICT4D fields concerns the understanding of development itself. For some, progressive investment in new technologies such as ICTs signals a modernising development agenda that regards technology as neutral with respect to its implications in any given cultural or socio-economic context. Insofar as investment is responsive to demand, it is argued that ultimately this will offer the poor an escape route out of poverty. According to others, however, this modernising developmental paradigm should be challenged, especially as many of the strategies and actions on which it depends stem from the advocacy of a minority of wealthy proponents of investment. On this side of the fault line, critics argue that analysis is needed to problematise developmental discourses and to investigate assumptions that are embedded within it (Thompson 2004; Schech 2002). The former modernising perspective tends to favour quantitative empirical studies that may examine inequality or income variability and technology investment while the second perspective tends to favour qualitative case studies that expose the assumptions underlying the developmental process to criticism (see Cowell 1998, and Bandyopadhyay and Cowell 2006 for the former; and Escobar 1995; 2005 for the latter).

A similar fault line is visible in alternative perspectives on the role of IC and ICTs in the development process and their potential contribution to poverty reduction. On the one hand, it is argued that it is crucial to invest in new technologies (and media and information content) and to embrace all people within global networks to enable them to communicate and to access to new sources of information. Information is often equated with knowledge and as Schech (2002: 14) argues, new ICTs (such as mobile telephones or the Internet) are said to 'offer unprecedented possibilities for diffusing knowledge to developing countries, and to advance their populations' well-being'. Investment in IC strategies and in ICT networks is regarded as being unproblematically consistent with development goals (World Bank 1998).

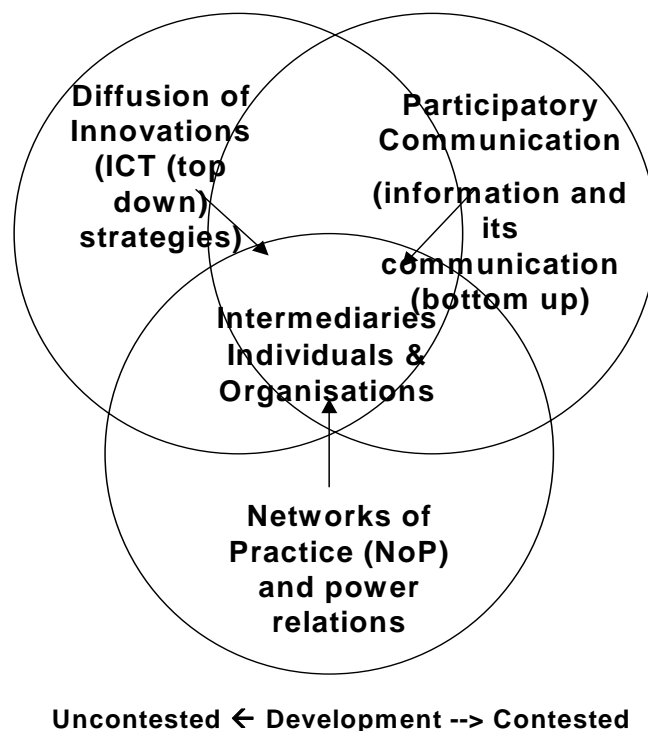
On the other side of this line, it is argued that it is vital to consider the values embedded in established IC and ICT networks and the consequences that follow from investment. A key challenge is to problematise assumptions about the relationship between the implementation of IC strategies, the use of ICTs and poverty reduction outcomes (Castells 2001; Servaes 2002; Mansell and Wehn 1998; Mansell 2006).

Triangulating Theory

The fault lines in the fields of study concerned with IC and ICTs for development are sustained by incommensurability between two of the main bodies of theory that inform them, that is, between the predominant ‘diffusion of innovations’ model and the ‘participatory communication’ model. Figure 1 shows these two perspectives in the top two circles.

Figure 1: Diffusion, Participation and Networks of Practice

Development & Poverty Reduction



Diffusion Research – Technology Push

Diffusion of innovations theory considers the development roles of IC and ICTs in the light of Rogers' (1962) explanations of inculcating awareness and enthusiasm for technical innovations. Rogers' (1995) original theory has been modified to account for contextual factors, but research in this tradition continues to discount how power relations influence behaviour and their implications for poverty reduction (Damsgaard and Lyytinen 2001; Stoneman 2002).

Empirical research in this tradition is often associated with studies of social networks of the actors who become involved in the diffusion process. Recent research in industrialised countries has repeatedly demonstrated the importance of *intermediary actors* (individual and institutional) in the diffusion of complex innovations such as ICTs (Damsgaard and Lyytinen 2001). Adesida (2005) has demonstrated the role of intermediaries in, for instance, using trade associations to encourage knowledge building, facilitate learning, set standards, advocate policy, and network to support information exchange within tightly and loosely linked networks.

The concern of the 'diffusion of innovations' research tradition is to explain the rate and direction of the adoption of new technologies. It does not encourage researchers to challenge the underlying premises of development, to question the IC patterns that might emerge, or to reflect on the way in which these might influence the broader poverty reduction agenda. Nevertheless, research in this tradition has proliferated (see for instance, Attewell 1992; Carter et al. 2001; Deroian 2002; Lyytinen and Damsgaard 2001). It informs the vast majority of studies of ICT diffusion in the wealthy and poor countries today. It is largely this model that underpins the United Nations focus on ICTs that is incorporated in Millennium Goal 8.⁵ However, this model does not offer a point of entry for examining unequal power relations among local stakeholders, including intermediaries, or for considering how these dynamics might influence changes in attitudes and behaviour in ways that may lead to poverty reduction.

The 'diffusion of innovation' model, despite its prevalence, is on the *uncontested* side of the modernising development fault line in Figure 1. Although its application helps to demonstrate the roles of key actors in the diffusion process, it focuses primarily on

individual rather than collective actors and it tends to ignore the contexts and constraints that operate where adoption decisions are taken (Fichman 1992; Fichman and Kemerer 1994, 1999). This model is also closely associated with the view of development that tends to reduce development problems and poverty to a 'lack of information'. While there is increasing awareness of the need to distinguish between different kinds of knowledge, information, communicative contexts and learning processes, there still is little understanding of the role of ICTs in this process or of the patterns or networks of communication that give rise to changes in behaviour that assist in poverty reduction.

Participatory Communication – Demand Pull

On the other side of the developmental fault line, the participatory communication tradition of research has been flourishing (see Hemer and Tufte 2005; Servais 2002; Kincaid 2002; Papa et al. 2004). This field of work has given greater attention to IC strategies rather than to technology *per se* and it is more concerned with issues such as health, education, environment protection, etc., as poverty reduction strategies. Waisbord (2005: 78) one of the principle US-based contributors to this field, suggests that over the past 40 years a consensus has emerged with respect to the relationships between communication for development and participatory engagement with democratic processes. He argues that effective forms of development communication practice must acknowledge 'the centrality of power, the integration of top-down and bottom-up approaches, the need to use a communication "tool-kit" approach, the articulation of interpersonal and mass communication, and the incorporation of personal and contextual factors'. Despite consensus at a practical level, however, he maintains that there is a huge gap between theory and practice.

Although participatory approaches are acknowledged for their potential to enable empowerment of citizens in some cases, they are also subject to questions about the conditions under which participation is possible. What happens, for instance, when participation runs counter to community norms or is rejected by local authorities (Cooke and Kothari 2001; Heeks 1999, Huesca 2001)? Research that is focused on IC strategies has counterparts in the wider field of participatory action research with its concern for issues of democracy and governance (Argyris and Schon 1991; Brock et al. 2004; Gaventa 2004; Estrella 2000; and Leach et al. 2005). These traditions are more explicitly

concerned with power relationships and they are aligned with a *contested* or political view of developmental processes and outcomes.

Depending upon which side of the developmental fault line one is on, reference to IC strategies may refer to various means of community empowerment and mobilization or it may refer to the diffusion of ICTs and their applications as neutral tools of development. IC strategies may be understood as an instrumental means of helping development projects to achieve their goals (through the dissemination of information, etc.) or as a goal of development fostering aspirations for rights to communicate and access to technologies such as mobile telephones or the Internet at affordable costs (Morris 2003). In policy forums, it is extremely difficult to generate a constructive dialogue across the fault line that divides proponents of the 'diffusion' and 'participatory' schools of thought.

Networks of Practice – Understanding Power Relationships

By introducing a third theoretical strand which has been developed mainly in the field of organisational change - *networks of practice* (NoP) – we cannot expect to eradicate the fault line. However, we can enable the beginnings of a more politically aware and dynamic account of the factors giving rise to patterns and trends in IC, ICTs and poverty reduction (NoP is shown at the bottom of Figure 1). The NoP perspective offers a dynamic account of information sharing - of social networks of communication that connect individual and collective actors in one locale with local and distant others, and which give rise to changing attitudes and behaviours within a context that takes into account perceptions of power relations, hierarchy and resistance to change.

This theory has been developed mainly within the field of study of change within organizations, but it has been extended to consider how members of various communities of practice share information and communicate through networks that extend beyond the boundaries of specific organizations. Neither the diffusion of innovations nor the participatory communication traditions of research embrace an explicit theory of the dynamics of the social matrix of communication, that is, the social networks of communication that connect individual and collective actors in a given locale to local and distant others.

This theory was developed initially as a means of understanding the dynamics of communities of practice (CoP) (i.e. professional and/or lay communities). It is rooted in the social constructivism tradition, a tradition in the social sciences that emphasizes the importance of culture and context in understanding relationships between social actors. Lave and Wenger (1991) argued that knowledge is situated in the relations among practitioners, in their practices, in their social organizations and in the political and economic structure and organisation of their institutions. CoPs were said to be formed through the pursuit of shared enterprise and to serve as repositories of experience. Whereas the ‘diffusion of innovations’ approach to learning and knowledge favours abstract representations of knowledge, e.g. digital information, the CoP perspective favours a view of learning and innovation that emphasises the interrelatedness of practices and the importance of situated learning, learning-in-work and learning through practice. Brown and Duguid (1991: 41) argued that it is: ‘through the constant adapting to changing membership and changing circumstances that evolving communities of practice are significant sites of innovation’. Brown and Duguid (2001) later expanded the CoP concept to *networks of practice* or NoP. These networks are characterized by looser connections among the members; more formal occupational and professional networks; and the spanning of the boundaries of organizations (see also Duguid 2003; Lesser and Storck 2001; Tabliaventi and Mattarelli 2006; Wasko et al. 2004).

The NoP perspective has not been applied in the development context beyond empirical examinations of the development of open source software communities. It also has not been applied to examine the roles of intermediaries and other stakeholders within the networks of (mediated) IC strategies in specific development contexts. Given its focus on the convergence and divergence of meanings between different groups of actors, this theoretical perspective is especially relevant when consideration is given to fostering diversity in knowledge societies.

Implications for Empirical Research

The NoP perspective also offers a means of examining the dynamics of networks of actors involved in poverty reduction projects at a macro-level as well as at a micro-level. At the macro-level, this perspective points to the need to map the dynamics of information and communication networks involving individuals, households, and

intermediaries of various kinds. At the micro-level this perspective points to the need to critically examine the potentially incommensurate views of different actors and their motivations to engage in IC strategies and in efforts to access and circulate information.⁶

By developing a research design that integrates macro and micro level analysis and which is sensitive to the need to examine aspects of both the *uncontested* and *contested* developmental perspectives, we could encourage an analysis of the dynamics of IC (in some cases mediated by ICTs) by following key actors (individuals, households or intermediaries) and by mapping the ways that they are embedded politically and economically within the development context. Trends in their information seeking and communicative behaviour and in the changing perceptions of the value of available information resources could also be examined.

This conceptual framework encourages a framing of research questions concerning IC, ICTs and poverty reduction in terms, not of ‘impacts’, but of the relationships between IC flows, attitudes and behaviour, the roles of intermediaries within dynamically changing networks, the distributional implications of ICTs, and the way new resources may alter power relationships within existing and new networks. Research on these issues is essential to complement ICT benchmarking/indicator studies that give us snapshots of developments,⁷ but no basis upon which to analyse how or why people seek information or communicate and with what implications for their attitudes, the resources they have available to them and for their everyday behaviour (Souter et al. 2005). These are the issues that are at the heart of knowledge societies however we define them. Among the many propositions that can be examined empirically within this framework are the following:

- IC flows, behaviour and attitudes are not static but they often are resilient to change, while the availability of IC technology and services changes rapidly and dynamically. This may have enormously varied implications for the poor.
- Information intermediaries of many types with many roles are crucial to information absorption by the poor. Individuals will seek to shape information and their access to it in a form that is appropriate for their needs.

- ICTs and services are adopted disproportionately by higher-status socio-economic groups, with affordability playing a crucial role in take-up among lower-status groups and networks.
- Networks of Practice – including family, community and economic networks, and local and remote (*e.g.* diaspora) networks - are fundamental to poor people's ability to reduce their vulnerability. New resources, such as ICTs, disrupt existing IC flows and patterns of behaviour as well as attitudes, with consequences that need to be better understood.

Conclusion

Without research to examine these issues there will be repeated calls for multi-stakeholder approaches and for new ways to support effective and rapid implementation of IC and ICT strategies. These repeated calls will be a reflection in part of the difficulties that are encountered when too little attention is given to the power relationships that are at stake when these strategies are implemented and of the continuing gaps between theory and practice. In effect the output from the GAID meeting in June 2006 acknowledges these issues – point three of the concluding statement reads as follows: ‘... ICT4D must be placed within a comprehensive development strategy and programmes focused on social development and economic growth using ICT with a systematic transformation process of the socio-economic structure towards the knowledge society and economy’ and further, that ‘ICT4D programmes should be localized and community-driven and not technology-driven’.

The initial GAID meeting called for a focus on priority areas such as education; health; entrepreneurship; and participation in policy debate and decision making (governance). Few would argue that these are not the highest priorities. However, in seeking to ‘think big’, and to address issues of sustainability, scalability and replicability, this will necessitate a better understanding of power, networks of practice and the everyday needs and objectives of the poor and the way these relate to IC and ICT strategies. To achieve this we need more than a stronger interface between ‘top down’ (diffusion) and ‘bottom up’ (participatory) initiatives on IC and ICTs for development. We need to understand the roles of intermediaries of all kinds – not only those who play an

entrepreneurial role or representatives of civil society organisations and donor organisations; but also teachers and young people, workers, etc., and the way they foster social networks – locally and at a distance.

The dynamics of power relations need to be examined within ‘networks of practice’ rather than within locationally-bounded communities. There is an urgent need to investigate changes in IC flows, behaviour and attitudes over time; the distribution of resources and benefits, and changes in power relationships; and the relationships between information intermediaries’ and individuals’ perceptions of changes in attitudes and behaviour. These aspects of emerging knowledge societies are more difficult to investigate than the ‘impacts’ of IC or ICT intervention strategies. However, a better understanding of what information sources people value and why, and with whom individuals communicate most effectively and why, will be central to our future capacity to foster diverse – and equitable – knowledge societies. Considerable effort will be needed to devise indicators that operationalise the components of the theoretical framework outlined here. The effort to do so, however, is bound to be rewarded by insights into why the fault line in this field of research and practice persists and what might be necessary to develop a better understanding of the role of information and its communication and of ICTs in poverty reduction.

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2 See WSIS Plan of Action http://www.itu.int/wsis/documents/doc_single-en-1160.asp accessed 8 July 2006.

3 See <http://www.un-gaid.org/> accessed 9 July 2006. The author is a named member of the High Level Advisors to this Group.

4 These volumes – published by UN and other agencies are now very numerous, and they are complimented by much more theoretical treatments such as the UNESCO (2005) report on knowledge societies which does not provide insight into empirical research methodologies that might follow from the theoretical and conceptual issues that it raises.

5 See <http://www.un.org/millenniumgoals/> accessed 8 July 2006.

6 Parallel fields of theory include those on social networks (Putnam 2003; Fine 2001) and participatory action research, focusing on issues of democracy, governance and politics and power relationships in networks embracing the poor and intermediaries involved in poverty reduction (Argyris and Schon 1991; Brock et al. 2004; Estrella 2000; Gaventa 2004; and Leach et al. 2005).

7 For example the ORBICOM/UNESCO work on 'infostates' which combines metrics on ICT stocks and consumption flows, http://www.orbicom.uqam.ca/projects/ddi2005/index_ict_opp.pdf accessed 8 July 2006.