

KNOWLEDGE FOR DEVELOPMENT: BRINGING LIGHT TO POVERTY'S DARK CORNERS?

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The problem of knowledge – the manner in which it is embedded in systems of thought that have monopolized our capacity to comprehend the world, narrowed our options of resistance, assaulted the dignity of particular histories and cultures, demeaned the faculties of the imagination, and compromised the futures of people around the world – will haunt us in the twenty-first century. – *Vinay Lal (2002)*

Knowledge has become a pervasive concept in the development sector. The management, sharing and networking of knowledge for development has become a whole new field of discourse and activities. In 1996, James Wolfensohn, President of the World Bank, declared that the World Bank had become a "Knowledge Bank" (Wolfensohn, 1996). In 1997, the first Global Knowledge for Development (GKD97) conference took place in Toronto, Canada. International organisations, governments and non-governmental organisations met to discuss the relationships between globalisation, ICT, knowledge, growth and development. In 1999 the World Bank published its 1998/1999 World Development Report with the title 'Knowledge for Development'. At the same time, consultations started on how to open up the Bank's vast information resources via the Internet and to combine these resources with other 'credible' development knowledge produced by organisations around the world. These efforts led to the establishment of the global Development Gateway, a web-based knowledge portal for the sharing of ideas and knowledge for development. Joseph Stiglitz, then Chief Economist of the World Bank, spoke of a paradigm shift, now that knowledge was equated with development.

In an age in which media ownership and technology determine the access to and content of our knowledge, it becomes crucial not only to ask '*what* do we know', but also '*how* do we know' (Jansen, 2002). With ICT playing

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a central role in the dissemination of knowledge for development, we need to critically assess how concepts of knowledge influence technological solutions and how technology - particularly ICT - affects the conceptualisation of knowledge for development.

In this paper I propose a critical approach to ICT for development, arguing that our technological choices can have serious impacts on the availability and legitimacy of knowledge needed for development and social justice. I argue that the World Bank's concept of knowledge is inscribed in the technology of the Development Gateway, reinforcing certain understandings of knowledge and obstructing the use of the technology in support of alternative understandings of knowledge and development, adversely affecting the validity and diversity of the knowledge needed for development, and accelerating the loss of knowledge. In order to overcome the biases of knowledge and ICT, I will suggest an ethical framework, based on the concept of cognitive justice, to guide initiatives in ICT-based knowledge sharing for development.

1. Knowledge and the Development Gateway

The *Development Gateway* (www.developmentgateway.org) is a one-stop portal website offering services and tools to access, share, and discuss development-related information and knowledge. The global Development Gateway (GDG) was initiated by the World Bank but has been governed since July 2001 by the Development Gateway Foundation (DGF).³

Content on the GDG website is divided over four main categories:

- *Exchange ideas and knowledge*
- *Find development projects*
- *Explore business opportunities*
- *Access country gateways.*

The *Exchange ideas and knowledge* section is where the bulk of the Gateway's content management takes place. This 'development knowledge' is organised in 'topics'. There are now 35 topic communities (September 2003) and the management of the topics' content is a combination of actively identifying "*the best available*" information and knowledge resources and highlighting quality resources or significant developments" (GDG, 2001). The user community can submit resources to the topic area. The editorial policy of the Gateway is implemented by an editorial committee selected by the members of the board of the Development Gateway Foundation (DGF). The current draft Editorial Policy (GDG, 2001) is based on the

³ The Foundation has entered into a technical services contract with the World Bank Group to enable the latter to continue to provide services associated with the Development Gateway portal. The World Bank is represented on the DGF Board with among others James Wolfensohn (President, World Bank), Mamphela Ramphela (Managing Director, World Bank), and Mohamed Muhsin (Vice President and CIO, World Bank). Several of the topic guides are World Bank employees.

“deferred publishing” approach, that is, content submitted by users will be subjected to prior review by the topic guides or editors who will judge the contributions on relevance, suitability, and the perceived needs of the Gateway’s audience.

World Bank Knowledge

There is a direct relationship between the 1998/99 World Development Report and the Development Gateway. The WDR discusses “*the extended reach of knowledge through new information technology*” (p. 56-70) and “*managing knowledge for economic development*” (p. 138-143). The Gateway is introduced as an “*initiative [that] will expand the World Bank’s knowledge management system to incorporate local knowledge from countries and sectors in which the Bank is active*” (p. 140).

The WDR is built on two important assumptions. First, that there is a linear connection between knowledge and development, i.e. “*knowledge is development*” (p. 19). Ideologically, the WDR is based on a neo-liberal economic theory, which views knowledge as the most important resource for economic growth. In terms of its implementation, the World Bank’s understanding of knowledge builds forth on corporate sector approaches to the exploitation of knowledge, most importantly knowledge management (KM) (King and McGrath, 2003; van der Velden, 2002a, 2002b)⁴.

Secondly, the WDR assumes that knowledge is a public good in so far as markets fail to provide the knowledge needed for development (p. 16). This ‘public good’ knowledge is presented as a neutral commodity that can “*travel as light*”, i.e. easily be transferred and managed. The Report’s opening sentences set the tone for the rest of the document:

“Knowledge is like light. Weightless and intangible, it can easily travel the world, enlightening the lives of people everywhere [...]. Poor countries – and poor people – differ from rich ones not only because they have less capital but because they have less knowledge” (p.1).

The WDR’s commodification of knowledge and its assumption of a linear connection between knowledge and development has two important results for knowledge for development as a policy and the Development Gateway as a tool. The first is a conceptual confusion between information and knowledge. The WDR is ambiguous about the difference between information and knowledge. The same is true for documents produced in the context of the development and implementation of the Gateway. They do not provide a discussion of the concept knowledge or the difference between knowledge and information. For example, in the Development Gateway Civil Society Engagement Strategy (GDG, 2001a), the terms information and knowledge are used interchangeably. The Gateway’s Business Plan (GDG, 2001b) also uses the terms knowledge and information interchangeably, to the point that knowledge is described as an information resource (p. 3). There is no acknowledgement of the possibility of different concepts of knowledge or different knowledge needs.

⁴ Corporate sector knowledge management practices have roots in the US military, see for example Milton and Whiffen (2001).

Secondly, just as the WDR rules out the possibility of contested definitions of knowledge, it prioritises the Gateway to dominate terrain that includes alternative information and knowledge. The Gateway's Business Plan (GDG, 2001b) discusses its competitors in the 'knowledge for development market', stating that the success of the Gateway will depend on a successful branding of the Gateway as well as on its ability to complement or replace existing sources of information on the Web. This oblique reference to the existence of alternative knowledges is more strongly worded by Joseph Stiglitz, who wrote in his capacity as Chief Economic Officer of the World Bank (2000):

"In particular, the Knowledge Bank is in a good position to "scan globally" to identify good practices, and then it can play a brokerage role to facilitate a horizontal learning process between the developing countries facing certain problems and the countries with successful practices. It can perform another role: certifying the quality of the messengers and messages; in a noisy world, with many alternative theories vying for center stage, there needs to be some ways of sorting through the cacophony, establishing credibility."

ICT to Manage Knowledge for Development

The World Bank's focus on the informational aspects of knowledge, with knowledge understood as a commodity, results in technological solutions to manage and transfer knowledge (see fig.1). This is also clear from the Gateway's technical assessment (Quigley, 2000) in which hardware and software options are discussed in a technical and managerial framework. The selection of the technical platform for the Gateway is based on the discussion of knowledge as digitalised content, files and links to files, and how to best access and manage them.

Knowledge-for-development is:	Technology must provides:
Causal/linear knowledge (knowledge is development)	Efficient delivery system
Commodity and a public good	Transmission system
Inaccessible and fragmented knowledge	Content management; Repackaging of knowledge
Credible knowledge	Hierarchical and centralised system with options to monitor, censor, and select;
Neutral knowledge	One solution fits all (with some adaptations in language and design); Knowledge selection by experts

Fig. 1. Knowledge-for-development and technology

Differentiations in user needs are made in terms of speed of access and the diversity of signs, that is, the language and cultural implications of design. In line with the understanding of knowledge as neutral, the technology is perceived as neutral, providing non-gendered and non-political tools for knowledge sharing.

The Development Gateway has opted for a one-stop web-based portal solution (see fig.2), a widely used platform for the facilitation of knowledge management and online communities of practice. It fits the knowledge concept of the World Bank and the Gateway as it provides an efficient content management system based on a central database, which allows for the selection of 'credible' knowledge-for-development. This solution has also clear technical advantages for its users; they do not need to use a specific type of software to access and share information.

The disadvantage is that that all information first needs to be added to the central database in order to become accessible to Gateway users. It is this point that drew the most criticism from civil society organisations during the design phase of the Gateway because of the possibility to control and monitor access to the database by so-called gatekeepers, the Gateway's topic guides and editors.

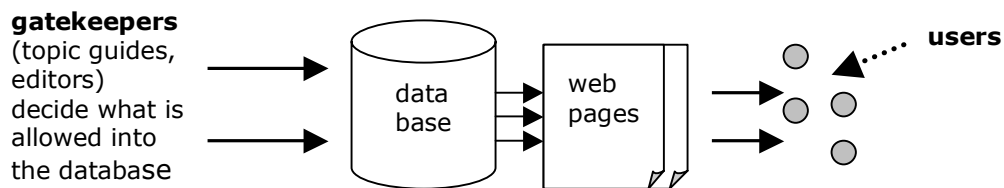


Figure 2. Design of the Development Gateway (simplified)

Organisations and individuals critical of the Development Gateway questioned the hegemonic potential of knowledge-for-development, the Gateway's governance structure, its large-scale, centralised model, its gatekeeper aspects, and the partnerships it offers. In consultation meetings with the World Bank they made clear that they sought a partnership based on shared power and ownership as well as clear criteria for representation and participatory governance in the GDG's boards and committees (Acceso, 2000; Bretton Woods Project, 2000; Development Gateway, 2001b and 2001c; EDC, 2001; OneWorld, 2000a). The GDG's governance structure and gatekeeper aspects sparked concerns about control and censorship.

2. Open Knowledge for Development

Civil society expressed its information and knowledge sharing needs not only in terms of local and regional development concepts and needs (GDG, 2001b, 2001c; IDS, 2000; Yusef, 2000), but also in terms of critiques of obstacles to development. There was expressed need to discuss and highlight issues such as racism, neo-liberalism, conflict, gender inequity, theories of development, and the World Bank itself (GDG, 2001b; Voice of the Turtle, 2001).

Civil Society Knowledge Critique:	Technology must provide:
Knowledge also obstruction to development (knowledge is also 'darkness')	Efficient system to locate and discuss knowledge
Context gives meaning to knowledge (tacit knowledge); common good; community-owned knowledge privatised	Community system
Knowledge, and the people/organisations conveying knowledge, must be legitimate/trustworthy	Locally-owned and controlled systems to enhance trust, transparency and credibility
Knowledge is power-related, situated, embodied, gendered	Decentralised and distributed network of local systems, with each system catering first of all to the needs of their own communities; Knowledge selected in network of peers

Figure 3. Civil Society Knowledge and Technology

Civil Society organisations critical of the World Bank's approach called for locally-owned, decentralised knowledge sharing structures (see fig. 3) that would build forth on existing initiatives and that would support and facilitate the strengthening, sharing, and creation of a diversity of knowledges for development (see van der Velden 2002b). They also pointed to the risk of sharing local, indigenous and community-owned knowledge via the Internet under the current intellectual property rights (IPR) regime. In this context an alternative technical platform was proposed during World Bank consultations on the Gateway with civil society organisations.

Open Knowledge Network

The proposal, a *Distributed Global Gateway for Knowledge-Sharing in Civil Society* (OneWorld, 2000) was never formally discussed or approved by World Bank staff. It resurfaced later in the Digital Opportunities Task Force of the G8 and was accepted by the Local Content and Appropriate Tools Working Group (Dot Force, 2002). The proposal is now being implemented under the name Open Knowledge Network (www.openknowledge.net). Pilots have been implemented in India and Kenya and the OKN will be presented to the public at the World Summit on the Information Society in Geneva, December 2003.

The Open Knowledge Network (OKN) is a system that facilitates the capacity and impact of local content by providing "a flexible framework or dynamic to link and support information initiatives among poor and marginalized communities through shared standards and values: local content, local people, local languages" (OKN, 2003). OKN is a distributed structure of independent hubs – intermediaries with Internet access – and local communities, organisations, grassroots, and individuals with or without Internet access, in which relevant development information can be shared (see fig.4). Users can publish or access information via the Internet but also by telephone, wireless, radio, etc. The OKN does not repackage knowledge but provides local knowledge owners, producers, and seekers a

decentralised, global structure to share information via their existing, locally-owned organisations⁵.

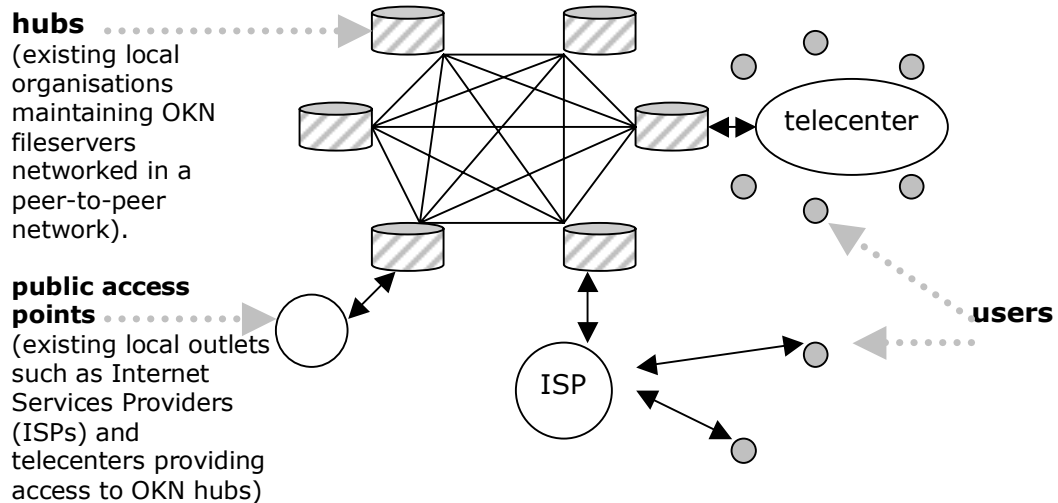


Figure 4. Design of Open Knowledge Network (simplified)

While knowledge-for-development is generally understood as a public good, the OKN conceptualises knowledge as public domain knowledge with public domain understood as a kind of social structure in which common goods are shared (see also Bollier, 2002). One of the OKN's challenges is to prevent 'the market' from privatising 'common good' local knowledge while at the same time protecting local hubs from possible liability for the infringement of copyrights.⁶

ICT to Share Open Knowledge

The OKN's approach is based on a peer-2-peer networking technical platform. It can be compared to file-sharing systems such as Napster or KaZaA (www.kazaa.com). There is no central database or 'command centre' that can manage or control the flow of information between the users of the system. The system does not present documents via web pages, as the Gateway does, but focuses on the connectivity of the users, providing files via different kinds of connections (Internet, radio, telephone, and offline access to users with expensive or slow Internet connectivity) and on the diversity of the users. It uses XML, a tagging system, to make documents in different formats and languages compatible

⁵ An example of how OKN functions can be found at http://www.dgroups.org/groups/OKN/docs/a_human_network.doc

⁶ The OKN will be offering the Open Knowledge License (OKL) for propriety materials shared over the OKN (OKN, 2003). It is working together with the Berkman Center for Internet & Society at Harvard Law School to develop a strategy to protect OKN hubs from possible liability for the dissemination of copyrighted or potentially libellous materials.

for sharing within one global structure. Participants in OKN need to install OKN software on their computers in order to be able the exchange files.⁷

The OKN's technical assessment (West, 2002) is based on the goal of facilitating knowledge sharing relevant to neighbourhoods and villages in developing countries in less than 10 minutes dial-up connectivity per connection. The focus is on local communities. Files are shared within so-called 'channels' and each channel is identified with an information-producing organisation.⁸ Hubs can 'subscribe' to channels if they deem the organisation and the information it produces reliable and relevant. The association between organisations and channels allow the formation of webs of trusts: for example, hub A adopts channels organisation B has adopted (from other organisations) because A has a high degree of trust in B.

3. Information, Knowledge and Diversity

In the above sections I have given a brief presentation of how knowledge is conceptualised in the Development Gateway. Civil society's critique of this concept points to issues of power, ownership and the diversity of knowledge. The example of the Open Knowledge Network was used to present an alternative technological solution for ICT-based knowledge sharing that proposes to address civil society's criticisms on the Gateway.

An investigation of the websites and related project documents of both systems show that they are based on a very 'loose' interpretation of the term knowledge, that is, without differentiation between knowledge and information. In our daily lives we have no problem with the distinction between information and knowledge. For example, we ask for information on how to repair a well, request information about how to apply for a grant, or we receive information on safe drinking water from a local health centre. If we are looking for knowledge, we usually ask about people. Who knows how to repair a well, how to apply for a grant or whether the water is safe to drink? This intuitive understating points to a distinction between knowledge and information: While information can be represented by oral and written signs, knowledge entails a knower (see also Braf, 2001; Brown and Duguid, 2000).

Ignoring the differences between information and knowledge may have consequences for development. First of all, when information is presented as knowledge, the diversity of this 'knowledge' can be reduced to the

⁷ This file-sharing can be compared with sharing files between folders or directories that are located on different computers. The software allows the user to select and copy a file at the hub and to transfer this file to her own computer or mobile telephone.

⁸ For example, 'oxfam.reports' may be the name of the channel identified with Oxfam, containing only reports published by Oxfam. Hubs that deem Oxfam a trusted organisation may subscribe to this channel in order to receive the files made available in this channel.

diversity of signs. For example, web pages in different languages with culturally appropriate design such as colours and images. In the case of knowledge-for-development, this 'knowledge' is then branded as objective and value-free and linked to notions of truth, obscuring the interests and values of the people, organisations and technologies producing or providing this 'knowledge'. Most importantly, ignoring the difference between information and knowledge also blurs the difference between learning, the process of becoming (more) knowledgeable, and information transfer, as part of the process of becoming (more) informed (see fig. 5).

Desired Outcomes	Input	Process	Output
A. Becoming informed	A.1 Information: oral or visual signs in the form of information objects	A.2 The process of being informed, which includes interpretation by the receiver which in turn is based on her pre-understanding information objects	A.3 An informed individual who knows something new or has verified something already known
B. Becoming knowledgeable	B.1 A knower: a person with comprehensive knowledge	B.2 The person applies her knowledge when acting	B.3 Via reflection on the knowledge used in action/analysis the person becomes more knowledgeable

Fig. 5. Becoming informed or becoming knowledgeable? (Based on Braf, 2001)

This is most noticeable in the Development Gateway, which is based on the assumption that knowledge *is* development. This linearity leads to two basic understandings that are supported by the Gateway's technical design (see figure 5 above): i) there is correlation between knowledge-for-development (A.1) and people becoming more knowledgeable (B.3); and ii) there is a need to 'sort through the cacophony of voices and alternative theories' and to provide credible knowledge-for-development.

The focus is thus on a controlled flow of knowledge-for-development, on the files and messages exchanged via the system. All the files have to be approved by topic guides or editors before they can be added to the central database and become available for distribution. The central file management system facilitates the management of the files in topic areas where reputable guides, editors and advisors help brand the Gateway as the source of credible knowledge-for-development. Content is mainly supply-driven.

The Open Knowledge Network is based on the understanding that there is correlation between providing local content (A.1) in a way that facilitates interpretation by the people receiving the information (A.2) and people becoming more informed (A.3). The OKN replaces the central database system with a decentralised file sharing system with editorial control taking

place at local organisations, thus locating transparency and credibility close to the users of the system. The focus is on knowers, on the local users of the OKN (A.2) who want to become better informed (A.3) in order to become more knowledgeable (B.3). The content is therefore mainly demand-driven, with the system facilitating file sharing in the languages appropriate for the local users, using a wide variety of formats and technologies, such as newspapers, telephones, satellites, computers, to disseminate information.

When knowledge is understood as located in a knower, a more comprehensive understanding of diversity becomes possible. In the knowledge-for-development paradigm, knowledge is located in information, in the files shared in the Development Gateway. As discussed above, the diversity of this knowledge is thus expressed in language models and culturally appropriate designs and images. When knowledge is located in the knower, diversity refers to the plurality of ways in which people know. In other words, diversity is not just the plurality of ways in which we can express our knowledge but refers to different, sometimes even opposing or conflicting knowledges.

Neil Postman, the well-known media and technology critic who died recently, argued in his *Teaching as a Subversive Activity* (Postman and Weingartner, 1969) that

Since with two or three exceptions all texts are not only boring but based on the assumption that knowledge exists prior to, independent of, and altogether outside of the learner, they are either worthless or harmful.

ICT-based knowledge-sharing-for-development, and probably the majority of the internet's (hyper) texts, are based on that same assumption. The danger inherent in the use of ICT in knowledge for development is that it will facilitate the management and transfer of information as knowledge-for-development while ignoring knowledge that does not fit development's categories, policies, and the digitalisation of ICT. The result will be the reduction in the diversity of knowledge as well as the loss of the humanistic knowledge needed for development.

The challenge for ICT is to develop applications that facilitate the sharing of knowledge within the understanding of knowledge as situated and diverse. In the following and final section of this paper, I will propose the outline of a framework that can guide the development and use of ICT for knowledge sharing for development based on the diversity of and equality of knowledges.

4. Cognitive Justice

Above I have described the interrelationship between knowledge and ICT: understandings of knowledge guide the selection of technology for sharing knowledge and that same technology is not only an expression of a certain knowledge, it also shapes our understanding of knowledge. Knowledge

sharing for development needs to overcome the bias of knowledge, of power deciding whose knowledge matters, whose knowledge is credible.

As a start, I suggest we might consider an ethical framework that could guide initiatives in (ICT-based) knowledge sharing for development. I propose a framework based on the concept of cognitive justice. Cognitive justice was proposed by Shiv Visvanathan as a response to the negative impact of Western science on 'developing' countries. With cognitive justice, Visvanathan proposes an alternative to modernity as well as an alternative to proposed "revivalist" returns to indigenous knowledge and traditional technologies and solutions. Cognitive justice is based on six principles (Visvanathan, 2001; Visvanathan quoted in Kraak, 1999):

- *All forms of knowledge are valid and should co-exist in a dialogic relationship to each other.*
- *Cognitive justice implies the strengthening of the 'voice' of the defeated and marginalised.*
- *Traditional knowledges and technologies should not be 'museumized'.*
- *Every citizen is a scientist. Each layperson is an expert.*
- *Science should help the common man/woman.*
- *All competing sciences should be brought together into a positive heuristic for dialogue.*

Cognitive justice thus implies the conscious and active protection of knowledges, i.e. preventing the invalidation or loss of knowledge within a knowledge system as well as the invalidation or loss of its systems, categories, and diversity. It implies knowledge diversity instead of knowledge hierarchies and the rights of peoples and communities to communicate alternative views.

The problem of knowledge is not only the dominance of the Western/scientific knowledge but also its power to prevent the 'flourishing' of other knowledges (Lal, 2002). The solution to this problem doesn't lie simply in trying to overcome the dichotomy between indigenous and Western/scientific knowledge, but in a focus on the knowers and their environments in which knowledge is situated. Shiva (1997) equates this cultivation of diversity with the reclamation of the right to self-organise, to self-govern and to self-rule.

Knowledge sharing within the knowledge-for-development paradigm focuses on the knowledge poor people lack instead of on the knowledge they do have⁹. Cognitive justice gives meaning to the relationships between the different knowledges and knowledge systems as it acknowledges the plurality of knowledge. In this sense, knowledge sharing

⁹ In development, culture is generally understood as an obstacle to development, not as knowledge. If people with new knowledge are not behaving as expected, it is their culture that obstructs change. Culture is not perceived as a position from which one sees, knows, act, but as *culture-as-tradition* (Jensen, 2000).

is more than knowledge transfer – bringing knowledge from where it is available to where it is needed. Knowledge sharing takes place within a dialogue of knowledges in which knowers exchange experiences, values and ideas.

The Bias of ICT

If ICT is used to support knowledge sharing for development, we need to overcome the bias of ICT. Based on the work of Carey (1989) and Innes (1991), Menzies (1996) shows how ICT promotes a transmission model in which communication is seen as product delivery, moving information around over long distances as fast as possible, focussing on connectivity, speed and packaging. This model is developed to support the global economy: “it provides cheap, fast, long-distance communication that will strengthen the relations between centres and margins while weaken everything in between; it supports centralised decision-making and authority while decentralising ‘location’, i.e. work; it will go further and faster while saying less about more” (Menzies, 1996:146).

Model	Transmission model	Ritual model
Basic metaphor	Transportation	Ceremony
Participants role	Sender & receiver	Participants
Role of meaning	Sent & received	Created & recreated
Criterion of success	Receiver “gets it” (accuracy of transmission)	Shared experience (sense of community)
Basic function	Influence across space	Community across time

Figure 6: Carey’s Communication models (1989a)

Carey (1989) distinguishes two models for communication (see fig. 6). In contrast to the product delivery of the transmission model, the ritual model perceives communication as a social and cultural process. Menzies (1996) argues that the biases of ICT can only be overcome if its structures are redesigned and renegotiated on the bases of a ritual or communitarian model with its more spiritual and cultural values.

It seems apparent that the Development Gateway, with its repackaging and delivery of knowledge goods for development, is closer to the transmission model than to the ritual model. If ICT-based knowledge sharing tools and systems would be built on the ritual model, they would – as the Open Knowledge Network proposes to do – focus on the communities of knowers, provide space for dialogues of knowledges within a framework of cognitive justice, and perceive its users more as creators than as consumers of knowledge.

The Development Gateway comes forth out of the World Bank’s need to establish hegemonic development knowledge. After severe civil society criticism, it has legitimised this effort by providing the Gateway with an independent governance structure, the Development Gateway Foundation, and an Editorial Committee with well-respected representatives from civil

society organisations. However, it has been unwilling to replace its technological platform with one that would decentralise content management and editorial control. Centralised management and control is needed as part of the process of branding 'credible' knowledge for development.

ICT has become an important tool for communication, networking and information exchange. ICTs can strengthen self-organisation (Escobar, 2003) by facilitating connectedness and spaces for co-operation, dialogues and learning. But tools for justice can become tools of oppression when the technology obscures the human and social nature of communication and when control and ownership hinders democratic participation. Only when people take charge of the technology, its 'spaces of vulnerability' (Smith, 1996) will become visible, and people can transform technology into powerful tools for social justice, democracy and empowerment.

In the age of 'knowledge societies', 'knowledge economies' and 'knowledge-based aid, development policies, technologies and practices should be critically assessed on their effects of on the cognitive rights of the people and communities they affect. As Shiva (1993, 1997) has shown, practice must actively and consciously cultivate diversity and self-organisation. Giving 'voice' to knowers, or being 'tolerant' of alternative knowledge, is not enough. Cognitive justice can provide an ethical framework for a knowledge paradigm that advances a decentralised, non-hierarchical, locally controlled approach to development, providing tools and techniques that are directly relevant to people's daily struggles for survival and inclusion.

ICT-based tools for knowledge sharing for development need to be built on a knowledge concept that acknowledges the plurality and diversity of knowers and their knowledges and understands users as knowers, as the producers, creators and owners of knowledge. Their embedded and embodied knowledge should be the starting point and final objective in the development process of building more knowledgeable societies.

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