Seeds of consensus

The potential role for information and communication technologies in development: Empowerment, appropriateness and measuring if needs really get met.

Keywords: Capacity building, basic needs, appropriate technology, information technology, internet, video, village pay phone, community radio, literacy, social capital, civil society.

Acknowledgements:
(Alphabetical) Carolyne Dennis, Mark Hodge, Naeem Khalid, Vikas Nath, Donal Savage and many others,
Alva Taghioff and Olivia Andersson deserve a special mention,
thank-you for being patient.

April 2001
Seminar in Advanced Methodologies and Professional Practice
School of Oriental and African Studies
University of London

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Chapter 1 : Introduction

Abstract

Information and Communication Technologies (ICTs) have emerged recently as an area of increasing academic interest alongside the rise of the internet. Donor agencies have focussed mainly on Information Technology (IT) in the form of Tele-centres. This approach is mainly focuses on IT, and so brings with it problems of outreach and literacy that are associated with the particular medium. The potential of other available media such as radio, video and telephony are thus neglected. Also underemphaisised are development discourses on appropriate technology and empowerment. This discussion hopes to attempt to address the role of ICTs in development with an integrated "multi – media" approach, taking into account the discussions on appropriate technology and empowerment.

The potential role of information and communication technologies (ICTs) in development: A first glimpse

"Give a man a fish and you can feed him for a day. Give a man a fishing rod and teach him how to fish, and you can feed him until the fishing rod breaks. Teach a man to fish, and then how to make a fishing rod from locally available materials, then he will eat for as long as there are fish to be caught. Organise the man and his neighbours into a common pool resource management scheme and they will be able to fish at sustainable levels. Support them in organising themselves, and they will be able to decide if they wish to earn their livelihood by fishing, or by some other means."

This adaptation of the classic development anecdote "teach a man to fish," loosely parallels the history of debate on local agency and empowerment within development discourses. From the direct provision of welfare services to the provision of the means of production; From the debates on local institutional and ecological sustainability to discussions on political and social empowerment, for practitioners the problems encountered in development have often centred on how to provide not only for immediate needs, but for the more strategic aims of increasing people's control over their own lives. This dissertation will attempt to explain how "appropriate" information and communication technologies (ICTs), as a component of supporting people in organising themselves, have a key role to play in development.

Defining and analysing ICTs

Information and Communications Technologies (ICTs) are sometimes defined as being distinct from media. This I believe is an attempt to distinguish ICTs from mass media, which are far more centralised and far less interactive in character. I believe that an integrated approach to information handling is required, due to the growing convergence between techniques (See TIME web-site in General web references.) I will include media such as radio, video and telephony within my definition of ICTs, and take the level of centralisation involved in techniques as a criterium for the analysis of them. Print based media will also be referred to somewhat, despite the severe limitations that literacy levels place upon their outreach. I use the term Information Technology (IT) to indicate that I am talking about computers, laptop or desktop, without reference to their connectivity to the internet or lack of it. I use the term internet to include certain commonly used internet services such as the use of email and the world wide web. It should be borne in mind that other services may become increasingly significant in the future. I define a "technique" as a technology along with the accompanying skills for using it, including to some extent, maintenance and repair. The context of social relations and institutions in which a technique has evolved, and is inevitably formed by, is not included in this definition, and is described as a form of "social capital." (see dedicated section later on in this chapter.)

Participation and Empowerment: The implications of viewing information as a form of consensus.

Within the discourses on development, the problems surrounding agency and empowerment in development have been discussed within the context of the "participation" of "recipients" in "development projects". All of

these terms have proved problematic, partly because they are seen to contradict one another in certain circumstances. One particular area of controversy has been the extent to which one can say that "recipients" can, wish to, or really do participate in an effort that is most often initiated by outsiders, and is, more often than not, planned by them.
Rahnema takes Paulo Friere's concepts of "empowerment as conscientisation" as a starting point for a critique of how participation was and is often practised within development circles. (Rahnema in Sachs, 1992) Friere's ideas centre around developing the critical faculties of oppressed groups, by engaging them in discussions as part of a communicative style of teaching within a literacy program. This was partly to empower them to access printed information. The core of his philosophy centred on the ability of these groups to articulate, reflect upon and then criticise their situation as the precondition for them organising to improve their situation. He frames empowerment as the awakening of such an articulate critical consciousness (Friere, 1970). Rahmena points out that whilst participation has served to restore legitimacy to the development sector after its dismal early record of achievement, especially in terms of poverty alleviation, consciousness raising and empowerment amongst participants has not really occurred. Friere's aim was to allow people to deconstruct the ideologies internalised by the oppressed that rendered them helpless within their own minds. Rahnema points out that development practitioners seldom examine if they carry such oppressive ideologies within themselves, and so are prone to merely replace one sense of helplessness and dependency amongst "recipients", with a sense of helplessness and dependency centered around them as a powerful outsider.
Rahnema's critique highlights the problems of facilitating local agency. This is greatly dependent on a practitioner's personal qualities, especially their understanding of their own influence on, and responses to, power relations, making the process very hit and miss. He advocates that such conscientisation be led from within to prevent the power distortions created by the presence of outsiders. Unfortunately this critique seems to set up outside intervention of as being fundamentally incompatible with empowerment (for more on this theme and the central role of communication in such problems see Hobart, 1993 and a response from Grillo, 1997). His solution ignores the fact that dis-empowerment may be a very entrenched phenomenon within the power relations local to the group, making such spontaneous empowerment unlikely. It does, however, indicate the possible value of a more "hands off" approach.
David Mosse engages with the issue of local power structures in the context of participatory community development exercises, which come under the heading of "Participatory Rural Appraisal" (PRA.) He points out the danger of assuming that the "informal" approach taken by outsiders in PRA will lead to a relaxed and open discussion involving the whole community and leading to an unbiased view of local conditions. He points out that, regardless of how practitioners behave, a gathering of the whole community in a public space to discuss issues that may affect the future material wellbeing of the group is bound to create a highly formal context, where the opinions of dominant members are very likely to be adhered to. Those in a less powerful position, especially women and poorer members, are likely to be inhibited from expressing their opinions in a public domain. Whilst such reticence might be overcome by a successful PRA process, he also points out that by putting the community on the spot in this way, the legitimacy of dominant groups might be enhanced: They may well be perceived as the only agents able to "play" the situation to the best advantage of the community, especially where previous contacts with outsiders with "official" interests have been negative. This tendency for the formation of a rigid consensus in such a formal setting, tending to exclude the views of less powerful groups, is seen as damaging the chances of PRA outcomes leading to general benefit for the community. His opinion seems to be that the risk is very high for this consensus to reflect the private interests of dominant groups, leading to them being able to co-opt whatever resources are on offer (1994).
The issue of the articulation of local practise, and the formation of consensus lies at the conceptual core of this discussion. Information has been defined as a special form of knowledge that can be transmitted via media (including the spoken word). Such articulated knowledge is distinct from tacit knowledge which is possessed by an individual or

group of individuals, but is not articulated in a way potentially comprehensible by others (Elliasson 1990). This is not a fully rigorous definition, but it serves to illustrate the relationship between information and consensus. Since the process of articulation almost always involves discussion with another, this is a process based on building a form of consensus, with all the political implications this involves. Where the other is from outside of an individual's "self identification groupings" (family, village, tribe, religious group etc…) there may then exist a process of representing that group to the outsider, with all the political implications that this carries.
Whilst social action within a group can be based on tacit knowledge, such shared "unspokens" suffer three disadvantages compared to articulated information. Firstly it is difficult to reflect upon and innovate around unspoken knowledge (Mosse, 1994) Secondly, as I have just outlined, it is difficult to represent such knowledge to the outside world, creating problems of political voice for the group. Thirdly it is hard to adapt and adopt new knowledge where existing knowledge(s) remain unspoken, as this limits the scope for comparison, and so makes it hard to integrate the new knowledges into the local context. The articulation of tacit knowledge into information carries with it the potential for three new types of empowerment, or, in other words, three new potential avenues for "capacity building." (See chapter 3, the role of intermediaries for more on this.) I will call the ability to reflect on practise and bring about change as "critical capacity," the ability to represent local knowledge to "others" as "political capacity" and the ability to fit new information from outside the community into existing practise as "learning capacity." These formulations might seem self evident. However by framing them in this way, attention is drawn to the power dynamics within the formation of knowledge. In addition, by acknowledging this process of consensus formation, these processes are presented as being deeply interconnected and dependent on levels of participation in communication processes.
Writing about recent agricultural reform in China, Elizabeth Croll makes it clear that access to novel forms of information can actually reduce the level of dominance by elite groups, by providing alternative routes of mediation with the outside world. In pre-reform communist China an absence of markets led to an lack of information exchange of any lasting character between production units. As such the elites, or "cadres," had a monopoly on information from outside the production unit, and the giving of information was a major part of the "gift economy" by which they secured political control. With the economic reforms of agriculture, farmers were expected to make more production decisions for themselves, and had contact with markets, alongside a freer media environment. This combination of necessity and opportunity resulted in a plurality of information exchanges and contributed to a lessening of the cadre's relative bargaining power (Croll, 1994).
For women in particular the opportunities offered by new means of communication for representation, innovation and opportunity capture are great, since normally their exclusion from formal and public discussion can greatly limit these capacities for them. Of course such new channels of communication are resources that elites may wish to co-opt for themselves (see Chambers, 1983 : 164) but where such communication resources are specifically directed towards women, they may prove highly effective in empowering them. (See the section on the Grameen Village Phone in chapter 2 for a case situated discussion of women's empowerment through ICTs.)

Information, trust and social capital

Social capital and trust have been emerging as areas of interdisciplinary interest within the social sciences recently (see Fukuyama, 1995 for an early popular account). It has been a discourse that emphasises the associational role of Civil Society (based on voluntarism) in development as a counterweight to the State (based on coercion) and a basis for transactions within the market (based on profit) (Skidmore, 2001). Social capital has been loosely defined as the economic value deriving not from natural or individual human resources, but from the operation of social norms. This is a somewhat hazy definition, and is not consistently adhered to in the literature. Trust has also been conceptualised in a variety of ways (see Furlong, 1996)

but the broad outline of the discourse centres around the role of social norms in reducing the risk of exploitative or opportunistic behaviour during transactions. This has economic value because it makes transactions possible without the costs of policing them through more formal instruments such as a legal system. More broad definitions have included the ability to take on new practices based on existing social practise. Since trust and social capital are derived from the build-up of social relations, it seems reasonable to wonder if ICTs might have a role in facilitating this process. In one attempt to quantify social capital (see Moser, 1998) the number of local language publications in an area was actually used as an indicator of social capital, since it is also an indicator of "civic involvement." This approach fits nicely with the view of information production and consumption as potentially empowering processes. Certainly some of the literature on ICTs has included discussions of "social capital" as being crucial to the failure or success of ICT applications (see the discussions in chapter 2 of Tele-centres and Village Pay Phones.)

Focussing the discussion

In this dissertation I am going to primarily focus on the role of grassroots empowerment via ICTs in the meeting of basic human needs, alongside longer term issues of empowerment . I will take the view on needs adopted by the human development report, primarily focussing on health, education and income (for example, (UNDP, 1996.) I choose to focus on immediate needs for four main reasons:

1. Resources are severely limited in developing countries, so the diversion of resources away from meeting immediate needs is problematic. As such the initial focus in introducing any new technique should be on how it will impact on the pressing needs of disadvantaged groups.
2. Communities are more likely to adopt practices that have an impact on their pressing needs, so an approach lacking a focus on immediate needs is in danger of failing to achieve longer term objectives of participation and empowerment. The sustainability of new practices may be questionable due to a lack of local support.
3. The longer term goals of a community tend to be addressed after they have successfully organised around meeting their pressing needs.
4. One main strategic goal is for communities to have a voice in how their needs should best be met within wider development debates. An approach that specifically addresses the evaluation of the impact of a technique on needs, in this case ICTs, is therefore a step in the right direction. ICTs have a particular advantage in this area because they are associated with the information handling capacities involved in such evaluation processes. They may represent a route to evaluation "capacity building" for communities, so strengthening grassroots based voices in development discourses in the longer term.

Since part of the focus in this discussion is on local empowerment, the discussion will centre on the role of ICTs in Civil Society. However ICTs can also contribute to empowerment via the market. Generally the relationship between information and the economy has been a growing area of academic interest (See Stonier et al., 1989 and Elliasson, 1990.) Market access has long been a problem for poorer communities. The lack of access to capital markets inhibits the start up of small businesses. The lack of access to markets to sell their products inhibits the growth of enterprises run by groups with less "social access" to those with purchasing power. Micro-credit has emerged as a response to the credit problem. One of the limitations on the provision of micro-credit was found to be the work-load of administrating many small loans (Yunis, 1999). This implies that ICTs may have a role to play in empowering groups in the information handling required. Indeed a web based platform for an existing micro-credit scheme is currently being set up in India (see Credit Watch under general web references, click on "empowering through IT" in the frame on the left) although literacy may limit access to this.

As for market access, ICTs may have implications in accessing global markets via e- marketing on the internet. The know-net initiative addresses this need by providing online tutorials on web design, and information on where to obtain free web-space (see under general web references.) On a more local level, travel to markets is costly, in terms of time and cash, and possibly risky. As such, information on prices can reduce the risks of such journeys to market. It may also reduce the reliance on middlemen as the sole sources of market information, reducing the opportunities for exploitation to occur. Such "transparency issues" are also an important part of the long term function of ICTs, in allowing Civil Society to monitor and document the activities of the State, and so limit coercive activities. This issue will be taken up in the discussion on "ICTs, Civil Society, Social Capital and the State" in chapter 2.

Whilst needs such as education and health are traditionally met by the State, local empowerment to influence such provision is of a strategic nature, stemming from the development of political voice by a community, via the media, legal or formal political means. I will not deal with these issues within this dissertation, defining them as being too long term to fit into my approach. The issue of income provision by the State is relevant in emergency situations such as drought. The importance of communications in such situations has been explored (Dreze and Sen 1989.) I will not go into the role of Media and ICTs in emergency situations, except that they are seen as growing in significance, especially in relation to the growing usage of mobile phones.

This leaves us with "the role of ICTs in Civil Society as a means to basic needs provision" as our main subject matter, alongside the market oriented issues, transparency issues and local level empowerment issues mentioned earlier. I will start by examining case studies of existing ICT applications, evaluating the appropriateness of the techniques used, and questioning if they contribute to providing the capacities and meeting the needs that I have outlined above. Then I will define an approach to ICTs that I consider appropriate in terms of empowerment and the meeting of needs. I will then round up by examining the issue of evaluating the impact of information.

Chapter 2
Existing applications of ICTs

The appropriateness of ICTs

This is a difficult issue. Since "appropriateness" in technology is supposed to measure among other things, how well a population can manage and reproduce a technology and its associated skills (which taken together I term as "technique") the capital intensity of the technology involved in ICTs raises problems (see Schumacher, 1973.) Some ICTs, such as video and radio equipment, might be produced within a country, but expertise for operating and repairing such equipment might be scarce. For computers these issues are even more crucial, due to the complicated nature of operating them, and their notorious capacity for developing faults in both software and hardware. Some of these issues are discussed within the case studies. Cost is a part of this issue, with higher technology equipment being more expensive, both initially and in terms of maintenance costs. Another key issue is outreach. Newspapers are generally excluded from this discussion due to the major limitation that low literacy levels place on their outreach (Dagron, 2001 also see Literacy.org under general web references). This limitation also applies to the use of the internet, even when integrating the use of the internet with broadcast media such as radio. Broadcast media are in themselves limited by the presence of receivers, and this makes radio generally preferable to television, although this is dependent on who the audience is. With learning-capacity-building, perhaps radio, with its broad outreach is preferable. But with representational capacity, perhaps television (or video), with its visual impact and broad audience amongst better placed groups, has certain advantages. Video has found a place as a lower cost alternative to television, with new technology rendering this technique ever more controllable at a small scale.

Access to infrastructure such as phone lines and electricity also place crucial limitations on ICT usage. A statistical snap-shot such as that provided in figure 1 goes some way to defining the scale of the outreach problem. The Village Pay Phone, solar techniques and wind-up radios are a range of responses to such problems, alongside the investigation of short to medium range two-way electromagnetic radiation based links (See chapter 3, the role of apex organisations.)

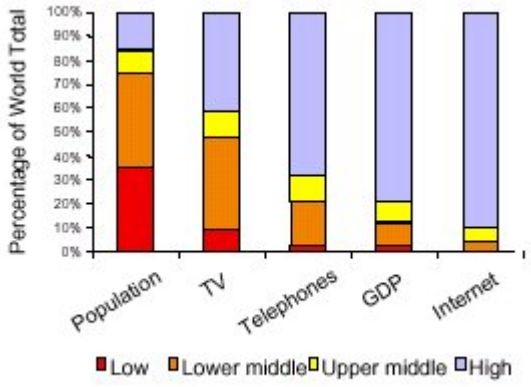

fig. 1 Comparing the analogue and digital divides, broken down by **national income** levels [1] (source: DOT force draft report, 2001)

Case Studies

I have selected case studies to represent the range of techniques available. I have tried to pick examples that illustrate the growing role of the internet alongside more familiar techniques. The case studies have been selected on the basis of them being examples of participatory communication. The Tele-centre examples are chosen due to the popularity of this approach within policy documents on this area (see SIDA, 2000 and World Bank, 1998.) These examples are mostly drawn from Alfonso G. Dagron's excellent book of case studies in this area, *Making Waves, stories of Participatory Communication for Social Change* (2001) with additional sources coming from the internet.

The Indian Satellite Instructional Television Experiment (SITE) is an early example of ICT use, where satellite technology was employed to deliver a mass literacy and health education campaign. However, the highly centralised, mass media nature of this approach places it far outside the notion of participation that this discussion is focussing on. Local level verbal communication networks (termed "oramedia" by Ugboajah) were used as part of the literacy education, but the development of a critical awareness is not mentioned as a feature of this State- led programme (Jefkins & Ugboajah, 1986).

Gasaleka & Mamelodi Tele-centres, South Africa.

Tele-centres have been taken up in South Africa as part of a national drive to provide IT training, supported by the World Bank and local NGOs. Gasaleka and Mamelodi Tele-centres are chosen because they are similarly equipped, each with nine computers, telephone lines, an email service, printers and fax machines. As such they are fairly representative of Tele-centre projects as envisioned by Donor agencies (for instance, see SIDA, 2000 pp 32-37). Gasaleka Tele-centre is situated in a Rural area containing 34 villages and around 30,000 inhabitants. Mamelodi Tele-centre is found near the centre of Mamelodi town, in an urban setting. In Mamelodi the centre is used mainly for reference, with people asking for directions to places and the addresses of people. As such, Mamelodi Telecentre has produced a directory of local services, and so is embarking on being an information production, as well as consumption, centre. According to the project director, Gasaleka suffers because "the people are not aware of what is happening in the Tele-centre." Seven agents are employed to go around and explain to the communities about the Tele-centre's facilities and the availability of information and training courses there. (ibid.)

The project director is attempting to overcome these problems by engaging in information production towards the needs of the community. A newsletter is planned. The newsletter will have to grapple with literacy problems, and depend on literate members of the community to pass on information to those who cannot read. "It is true that illiterate people don't come and use the Tele-centre" reports the project director, highlighting a key problem encountered when focussing mainly on internet connectivity. The newsletter aims to overcome the other key problem of finding information on the internet relevant to the needs of the rural poor in lower income countries (ibid.)

The uptake of training courses is slight, with the main users of the Tele-centre being business people who contact clients via email, use the internet, produce documents and carry out their financial administration. Others tend to use it for basic telephony and sending faxes. As such, these Tele-centres at present amount to expensive "communication shops" and so their income does not cover their overheads, making them unsustainable once external funding is withdrawn (ibid.). However it should be noted that lower cost tele-centre models have been springing up spontaneously in low income country contexts, in the form of internet cafes. This has mainly occured in urban areas.

These problems have been picked up in the general academic literature on the evaluation of Tele-centres. For instance, in Mona Dahms and Peter Benjamins "Socialise the modem of production: the role of Tele-centres in development" it is suggested that the form of Tele-centres should be approached far more flexibly, perhaps opting for lower cost set-ups. They also suggest that the design of them should be participatory in character, and implementation should be designed to foster community ownership. They also point to the need for fostering the social systems or "social capital" that surround computer usage, to lay the ground for the introduction of such equipment (Benjamin and Dahms, 2000.)

Grameen Village Phone, Bangladesh

fig.2 Areas of Bangladesh currently or projected to be covered by Village Pay Phones.
(Source: Telecommons, 2000)

A good example of a highly decentralised low-cost project that is financially sustainable (it operates as a market-based initiative) is the Grameen Bank's Village Payphone Project (VPP) (see figure 2 for geographical coverage in 1998, with projections for 1999, 2000 and 2001.) Its relevance is illustrated by current uptake levels of in the region of 100,000 handset owners (Dagron, 2001.)

The Grameen Bank's approach to this project has grown out of its approach to Micro-credit. This involves using social capital and trust alongside encouraging community self-organisation as a means to reduce the cost of administrating and policing the many small loans involved in micro-credit schemes (Yunis, 1999). This has been a response, as mentioned earlier to problems of access to credit markets for poor people. Social capital is "levered into" the process by making loans to a group of people who know each other, with default by any one member damaging the credit record of the group as a whole. As such policing is carried out through "trust" within the group, and very high repayment rates are achieved with this minimal policing structure.

The Village Pay Phone scheme is an extension of this approach, whereby loans are made to members who already have an existing successful business under the scheme, in order that they can purchase a cellular phone in order to provide a communications service that people within the village will pay for. Since the cost of the handset is low, when compared to other approaches ($420 compared to tens of thousands of dollars for Tele-centres), the approach is, from the outset, more likely to be financially sustainable (Dagron, 2001). There is a high level of demand for the communication service provided by the phone, also stemming largely from problems of market access for the rural poor. Since labour markets are often weak

locally, it becomes necessary for family members, usually men, to migrate in search of work, or for whole families to migrate, even internationally. The VPP provides a channel whereby social ties can be maintained with migrants, and remittance incomes can be secured. In addition, in order to buy and sell goods, travel to markets in regional centres may be required. Relatives in town may be consulted on prices in the markets or the conditions on the roads, and as mentioned before, by breaking the information monopoly of traders operating between these regional and local markets, the risks of exploitation are reduced. These pressing needs, which are mostly related to income, make willingness to pay for these services high, with 54 percent of VPP users indicating they are willing to pay between 100 to 300 Taka (US$ 2 – 6) for a three minute phone call involving a financial matter with a family member overseas (Dagron, 2001).
The Village Pay Phone addresses the perceived needs of end users directly, and so has a high rate of uptake and sustainability. Solar technologies allow outreach beyond electricity grids, and the erection of bamboo poles of 3-5 metres with high gain antennas can extend the reach of Cellular phone coverage, which is already greater than that of landline connections. Literacy problems are overcome by the nature of the medium and by the relative simplicity of the technology. It is also reliable, as it has no moving parts. However, whilst providing a much needed channel of communication, the lack of any centralised consensus forming precludes the formation of critical, political or learning capacities. Although new ideas may filter through the phone links, it is not until they prompt discussion within a community that a consensus is formed. Perhaps by providing a focal point for information exchange the VPP may encourage this, but the approach does not actively encourage the forms of community empowerment I have outlined.

The approach does explicitly address gender empowerment, by targeting the ownership of phones towards women where possible. Besides giving women control of a productive asset, and also placing an important information source within the "female domain" of a community, the presence of a phone is also gendered, in that constraints on market access generally weigh more heavily on women. Due to restrictions on travel away from home, that are often placed on women in lower income (and some higher income) countries due to their reproductive responsibilities, it is most often men who are able to migrate for work. The ability to maintain contact with migrants should, on the face of it, reduce the likelihood of families being "abandoned" and losing contact with the migrant. This is a question worthy of further investigation. These restrictions on movement also apply to travel to markets for trade, especially where this means staying away from home overnight. This may mean women need to send male relatives to market to sell their produce, and so accurate information about prices may, in principle, reduce the risk of exploitation, although in practise this is dependent on the relative bargaining positions of the individuals in question (Pottier, 1999).

Kothmale Community Radio, Sri Lanka

Community radio has a long history, especially in South America, where its application has often involved a high level of community participation (Dagron, 2001). It also has been applied in Africa, where it has been used to reach out to populations across huge geographical distances, where little or no infrastructure is available (Ugboajah, 1980). Since wind-up or solar powered radios are available for a relatively low cost ($26 is one price quoted in Dagron 2001 : 281) and literacy problems are avoided with this medium, and since the broadcast equipment is also relatively inexpensive compared to television, this medium has been one of choice in developing country settings. The complementarities between the outreach available through radio, and the research and data-basing opportunities available via IT and internet have been utilised in a number of community radio projects, of which Kothmale Radio is a notable example (see Dagron 2001 for case studies.)

Kothmale Community Radio Internet Project (KCRIP) in Sri Lanka aims to assess the potential benefits of new communications technologies to rural areas. Kothmale Community Radio (KCR) serves an area with a radius of around 25 km with an estimated population of more than 350,000 people. Anecdotal evidence from Tanya Nutley, a volunteer on the project suggests that KCR is well known and well regarded within this area (see Dagron, 2001 : 127) Letters to the station average 50 per day, including poetry, drama, history, songs and local events information. KCR was provided with computer equipment for the KCRIP by UNESCO. The Sri-Lankan government provided the internet connectivity through a dedicated 64 kilobyte line (which is a low capacity trunk connection by current high income country standards, although still faster than what most home users rely on.)

Three computer access points have been established in community centres in the area, with two way microwave links being employed where landline connectivity is lacking. The government is absorbing the connectivity costs of the KCRIP for two years, after which the KCR will need to find US$1000 per month to cover these extra costs. The KCRIP has, with help from the Institute of Computer Technology, incorporated web design training into its activities. KCR broadcasts a daily one hour programme based on queries from listeners that are answered by broadcasters with the help of the internet. A database of frequently requested information has been built up from this. The community internet access points are used as a portal for live broadcasts from within the community (Dagron, 2001).

Much needed health and income related information is drawn from the internet by the community. The formation of a community identity and consensus via community programming is contributing to a sense of empowerment and a level of critical capacity, in the form of an awareness of social problems in the area. The presence of Kothmale radio broadcast content on the internet, as part of a web-site written in three languages, (see Kothmale community radio web-site under general web references) has improved the political visibility of the community, and acts as a support for community radio within the region. The database of frequently requested information represents progress in the learning capacity of the community, and is also a resource contributing to the more general discussion of information needs and the provision of relevant content on the internet (see chapter 3 for more on this.)

The addition of internet connectivity to the station provides a channel for health and income related information, and educational opportunities, that is actually utilised by a community already empowered within a participatory communication process. However it is not certain that it will be financially sustainable: the initial investment of around $50,000 dollars alongside ongoing costs of around $1000 dollars per month may prove hard to bear, even for what is an example of a healthy community radio project, with 75% of its income derived from commercial programming. In addition the internet component is still mainly beneficial to those that own a phone line and can call in, are literate and can write in, or those that speak English and can browse the web for themselves (Dagron, 2001.) This suggests that telephone connectivity, postal service coverage and reliability, and literacy levels are a limit on the outreach of such

a scheme, and that English language education or web content in local languages is required. Direct access to the internet still requires literacy amongst end-users. As such the development of software that can overcome literacy barriers in IT use remains a priority, even where such integrated ICT approaches are taken (for more on this see chapter 3.)

Labour News Production, South Korea

Fig 3. Screen capture: (see Labour News Production in general web references.)

"Labour news production's main goal is to strengthen the democratic and progressive labour movement in Korea and world-wide and to play an important role in making the situation of media in the country more democratic." (Dagron, 2001 : 152)

Globalisation, in South Korea as in other countries, is causing serious problems for workers faced with harsh economic realities. The labour movement has a key role to play in such situations, but unfortunately many trade union organisations are not effective within current rapidly changing conditions. Labour News Production (LNP) approaches the social problems faced in Korea, especially in the wake of recent economic troubles, by focussing on a "social democratic" vision of democratic political processes coupled with decent living standards for working people. LNP wishes to be the driving force for using media in strengthening the progressive labour movement and also wants to make this movement internally participatory and democratic (Ibid.)

LNP has produced more than fifty video programmes of an educational and historical/documentary character. They have also built up more than 3000 hours of archive material. Since 1991 LNP has trained workers and citizens in video production and in the critical understanding of the mainstream media. This has led, amongst other things, to the production of six videos by workers collectives trained by LNP, so contributing to the build up of a network of information producers. Participation in the setting-up of international conferences such as Labour-Media 97 and Labour-Media 98 have broadened this networking activity (Ibid.)

LNP has used video as a low cost, but high visibility, alternative to television, in order to build political capacity within the Korean labour movement. This political visibility has been enhanced through the use of the internet, with the creation of a web-site in English (see fig 3.) and the video streaming of LNP content over the internet (see General Web References). LNP has also involved the building up of a "communal narrative" (both within the video archive and the participatory discussion processes that are said to surround video production,) which is explicitly aimed at promoting critical capacity within the union movement. The training and education programmes have been aimed at promoting these video techniques. The awareness of the need for these techniques within labour movement probably arose from ongoing discussions within the union movement that framed the need for promoting such skills, facilitating the emergence of this learning capacity (Ibid.)

The project is largely self-sustaining; with 80% of revenues deriving from tape sales, production fees from co-production projects with trade unions and NGOs, and training fees from the training programme. Fifteen percent comes from public and international funding, which is rarely available, possibly due to the political sensitivity of the project. Five percent of revenues are derived from individual supporters. Since the project has emerged from an existing popular movement and is structured around the critical discussion of people's needs, it seems to have found the support it needs to render it

sustainable, even through the political turmoil during the 1990s in Korea (Ibid.)

ICTs, Civil Society, Social Capital and the State.

The information above should of course be framed as a possibly idealised view, since I have drawn only from Dagron on this topic, and he drew mainly from the leader of the movement, Myoung Joon Kim. However there is academic literature to support the view that a broadly based union movement can lead to democratisation coupled with improved standard of living. Patrick Heller in his article *Social Capital as a product of Class Mobilisation and State intervention: Industrial Workers in Kerala, India* points to the broadly based nature of union movements in Kerala. Organised along inclusive class interest lines, rather than smaller exclusive factions, they were key in leading to an effective movement for improved living standards, able to bargain collectively and also make economically necessary compromises with employers in order to improve productivity(1996). As mentioned earlier, Skidmore (2001) frames discourses on "social capital" within the framework of the debates on the value of Civil Society as a source of agency in National Development. Of interest to such discussions is an OECD study showing productivity being positively related to rates of unionisation, within a western European context (see Fig. 4.)

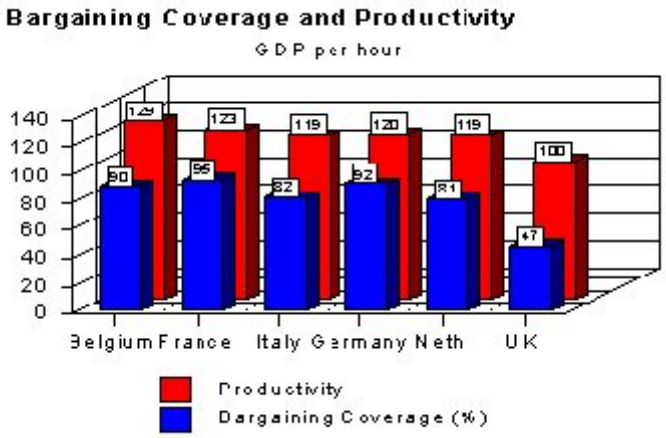

Fig. 4 Unionisation rates and productivity within Western Europe (Source: OECD in TUC partnership institute research page, General web references.)

This "social capital" expressed as the capacity for collective action is attributed to a long history of inclusive associational activity within Kerala. As mentioned before one major indicator of such associational capacity, employed in a study of social capital levels across Indian States (Morris, 1998,) is the number of periodical local language publications found within the State. Kerala scored highly in this, with its large number of publications seen as being indicative of its strong "civic culture." It should however be noted that media can be used divisively, as in the case of community radio projects controlled by evangelical religious sects (see Dagron, 2001 : 36).

These discussions seem to implicate the role of media in creating broad based movements for social change, and unions as being well placed to improve the living standards of workers, making Myoung Joon Kim's claims seem somewhat credible. This is part of a broader human rights and development debate around the possibilities for meeting economic, social and cultural rights through the exercise of civil and political Rights (for more on this topic see: Brownlie, 1994 and Sengupta, 2000) Other discussions within this category include that on public interest litigation (see Cottrell, 1993) and more general debates on the suitability of introducing formal democratic procedures and the observance of human rights as a part of "good governance" (see DFID, 2000 for a developed country government's recent treatment of these topics) in national development strategies (see Leftwich, 1993 and 1994 and also Donnely, 1989.) Dreze and Sen have also contributed to this debate in their comparisons of famine response in India and China (for one example see 1989.) One key rights area highly relevant to Civil Society as a whole is freedom of

association (for more on this see Caire, 1977 and Paul & Dias, 1992.) The role of the media and its relationships with Civil Society are implicated in all of these discussions. Certainly ICT approaches within Civil Society, often involving the use of video, have been used in checking the excesses of government, with Civil Society groups working to increase transparency. The case study of the Chiapas Media project, involving the extensive use of video, found in Dagron's (2001) book, is one example. The case studies found in Vikas Nath's website on digital governance focus on the role of the internet in increasing "transparency" especially in relation to the sometimes corrupt activities of the State (see under general web references.)

The availability of portable and affordable video production facilities due to advances in digital technology have encouraged, and will continue to encourage, ICT usage where such techniques become more accessible. Certainly IT has a role to play as a support technique for the information processing involved in both radio and video based work. However, cost remains an issue and the provision of low–cost hardware and the production of affordable or free software of a truly "multi-media" nature seems a priority, if production and training projects such as LNP and Kothmale radio are to be supported internationally.

[1]Income categories are in line with World Bank definitions (see appendix 1.)

Chapter 3
A suggested approach to ICTs in development and some issues in the measurement of the impact of information.

Some basic problems to be addressed.

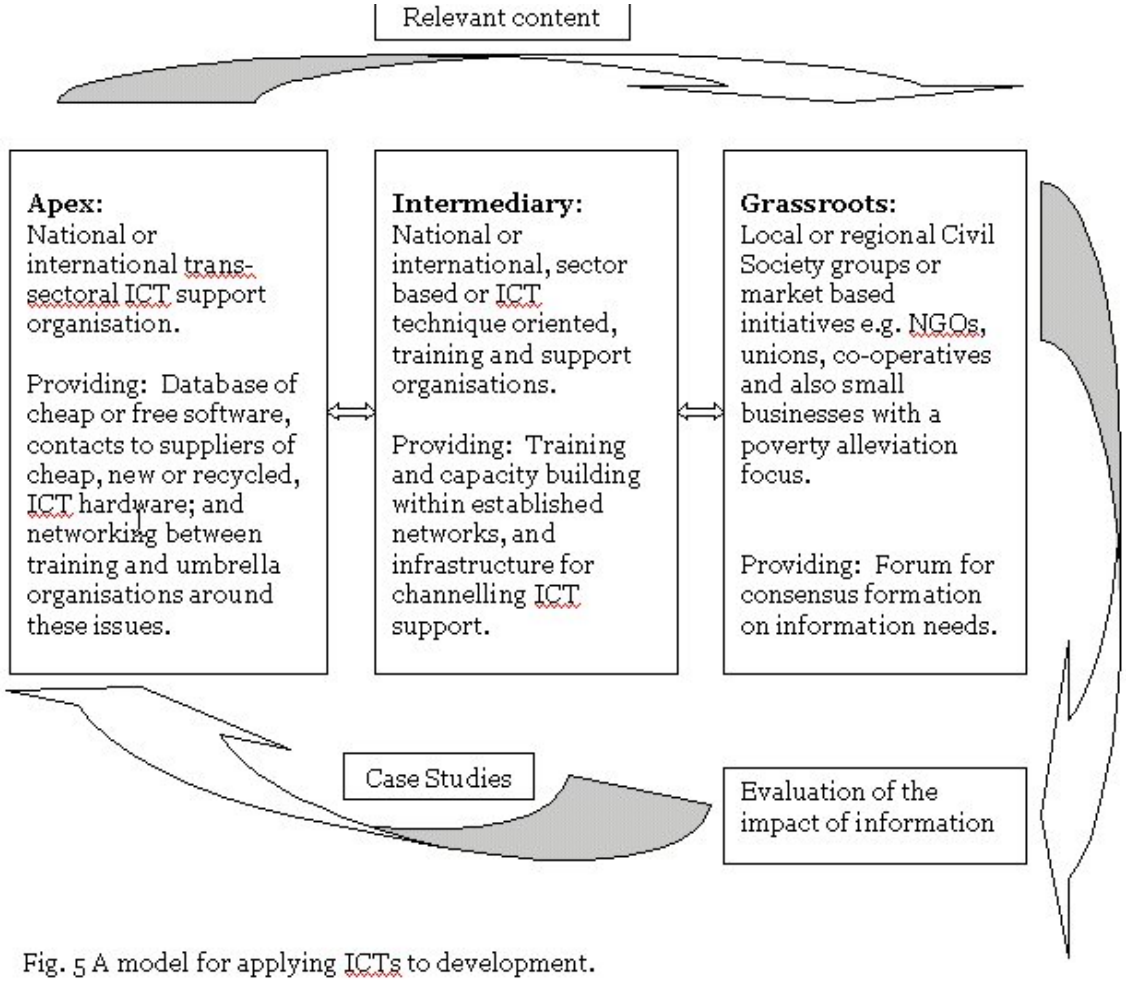

Fig. 5 A model for applying ICTs to development.

The proliferation of organisations claiming to be either practising development, or supporting others in doing so, raises questions like "do we really need all these organisations, or are they just soaking up scarce funds?" Such questions have been asked in relation to non governmental organisations (NGOs) and their support organisations (see Jolly, 1999.) They have received such scrutiny partly because they are widely recognised as a sector engaged in development. This discussion has also highlighted the dangers of NGOs seeing themselves as the only Civil Society groups engaged in development and ignoring other actors, often leading to mutual disadvantage (BOND, 1997). This is not just limited to ignoring other Civil Society groups: Dreze and Sen describe how Oxfam was completely unaware of relief efforts of a gigantic scale carried out by the State government in Maharashtra during the famine in the early 1970's, at the same time as their own activities actually worked somewhat at cross-purposes to them (1989).

I will attempt to justify the need for the three separate components in the model proposed, and then attempt to outline the categories I have set up in an inclusive manner, taking into account the variety of actors who might be interested in ICT support, and who might have valuable information to share with one another. The political problem of "will actors actually be interested in such collaborative efforts" is also important, but not one that I have space to deal with in detail here. The case studies I have outlined have gone some way towards showing that low-cost ICT projects tailored closely to needs tend to be taken up more enthusiastically, as people perceive the necessity for relevant information and political consensus all too keenly and are able to perform their own cost-benefit assessments. What these case studies have not addressed is how particular the conditions that gave rise to these success stories are. Superficially "participatory communication" seems key, but what other factors contributed to these successes, and what was absent in the failures that remain undiscussed?

Why are the components of this model necessary?

Why the three tier structure? Why all that paperwork and administration? I propose a three tier structure in order to meet three needs:

- Most importantly, for ICTs to be integrated into the existing information handling efforts of actors at the grassroots, both within Civil Society and the private sector. These actors already represent legitimate fora for the formation of consensus, which I have emphasised as being a key factor in empowerment. This also applies to State actors, who may turn to Civil Society for capacity building where their own capacities are weak.

- The skills of individuals within these organisations are key to the success of ICT usage, since ICT techniques tend to be skill intensive. As such the training capabilities of existing intermediary support organisations, that hopefully are already engaged with the grassroots actors in question, are an important means for delivering ICT support. Since ignorance of pre-existing social structures is a persistent criticism of development approaches (see BOND, 1997; Pottier, 1999) it seems important to work through and encourage existing support networks where possible (see Jolly, 1998 and Howes, 1999.)

- Since the value of ICTs in supporting self organisation is an issue that cuts across sectoral and national lines, it seems valuable to have apex organisations focussed on these issues where information about technique and examples of best practise in application can be collated and analysed. There are many existing organisations working as information centres around ICT development, although often with a strong bias towards IT and internet, rather than a "multi – media" approach as outlined here.

This means that existing actors, fulfilling functions relating to these needs to some extent, need to be found. I have dedicating appendix 2 to listing actors that might be appropriate for working in these three areas, although my lists are bound to only represent a small proportion of potential actors.
The notion of taking an approach supportive to the development of existing "grass roots" information handling activities rather than a more top-down modernisation-through-technology-transfer approach finds some support in Macro Level studies on ICTs as a national development issue. This is despite a general consensus that centres on IT provision, mainly through Tele-centres (see Chapter 2.) Stephen Corea, in his article *Cultivating Technological Innovation for Development* argues for the support and development of social practices that are conducive to profound social reorganisation. He argues that they represent the wellspring of innovation within a society, which translates into economic benefit. He argues that the introduction of ICTs is unlikely to benefit productive innovation levels unless these deeper processes are addressed directly (2000). Since ICT applications of a participatory nature are so intimately linked to consensus formation processes, they seem likely candidates for his category of "innovation inducing social practices" (2000).

What the actors in the model should provide.

The provision within this model is aimed at facilitating existing information handling and ICT use, and so the case studies in chapter 2 are used as a departure point for framing the support required. One major issue that arose, especially in the case of IT usage, was that of the cost of equipment and connectivity making the financial sustainability of projects questionable. Connectivity in developing countries is a difficult issue, being addressed both by governments and by some Civil Society and market actors (for an example from Civil Society see the Network Start-up Resource Centre in general web references). Apex organisations have a potential role in making ICT related hardware and software available on a least cost basis.

The role of apex organisations

Organisations such as the World Computer Exchange in the US and Computeraid in the UK work to provide recycled IT equipment to the developing world, with the major costs of such activities associated with shipping fees (see general web references). These organisations do not address the issue of software provision, with recipients expected to source these themselves. With the growing emphasis on intellectual property rights in international relations (Ringo, 1994), the importance of open source software as an alternative to the common practise of software piracy seems to be increasing. In addition, these organisations are not addressing the availability of non-IT ICT equipment. The discussions around the case studies explored how equipment

for handling visual and audio data is key to meeting needs via ICT, and the potential for recycling video and audio equipment must be quite large, since these types of equipment are widely used, and they display obsolescence cycles similar, if not quite so rapid, to those seen within IT (see Dicken, 1992 : 110). Early digital equipment should soon be entering into obsolescence phases, and the desirability of recycling such equipment, which is compatible with an integrated ICT strategy, seems great. Other technological problems that need addressing are those related to outreach and literacy. The idea of using radio modems is being explored in order to overcome the limitations placed by the extent of phone networks (see Pan Asia Networking in general web references.) A case study of their use is listed under Village Knowledge Centres in Dagron's book (2001.) Other areas of interest are around overcoming literacy problems. Northlight resource house is one technical approach to this, based on speech recognition software (general web references.) "The hole in the wall" project is another, based on touch-screen technology (Dagron, 2001 : 29, see under general web references) Open source and freely available MSDOS based software is an important avenue for ICT approaches, especially where international funding may be contingent on the legality of the software used by an initiative, under an increasingly stringent international regime. Web-sites such as CNET make freeware applications available for download, including many titles written under MSDOS (see General Web references). Operating systems such as Linux, free BSD and pico BSD offer free platforms (see under general web references), with a broad range of applications based on these operating systems available for download. These operating systems are surrounded by a certain technical mystique, and projects aimed at making them accessible to grassroots actors should consider local language tutorial systems and the bundling together of relevant software applications into tailored user-friendly packages. Whilst the variety of hardware available makes "turn-key" packages, which set themselves up from scratch, hard to produce, such avenues should be explored within the specific constraints of ICT empowerment.

The particular information handling requirements of participatory ICT approaches need to be addressed. Freely available video and audio editing software is one area that needs addressing, as is freely available integrated ICT archiving software, able to handle both audio, video and text based files (for one example of the current state of the art in open source text data-basing software see SQL under General web references). Of course the traditional administrative needs of small organisations need to be met, but this is an information handling mode already well represented within software applications (for instance see Star Office under General web references for a free downloadable full feature office package.) It is important to show restraint before producing new software. A prior stage is to collate the software that is already available into a dedicated database relevant and accessible to grassroots ICT initiatives (my thanks to Vikas Nath for

pointing this out to me.) With the problems associated with downloading large files being even more severe in areas with less sophisticated connectivity, the option of putting software onto CD ROMs, which can be sent by post, might be worth investigating. More and more obsolete IT hardware now includes CD ROM readers, and write-able CDs are now inexpensive to buy.

A huge amount of content is available via the internet, a small proportion of which is relevant to the meeting of basic needs. In terms of health there have been moves towards the direct provision of information via the internet (see "health information" in general web references.) In terms of livelihood and income, the provision of information relevant to agriculture has been a priority area (see under "agricultural information" in general web references) making the Food and Agricultural Organisation (FAO) the UN body most involved in working with ICTs, ahead of the United Nations Educational, Scientific and Cultural Organisation(UNESCO) (Dagron, 2001 : 21-22.) The internet has been envisioned by many as an educational resource, although relevance remains an issue even within this broader context (See "educational initiatives" under general web references").

The role of intermediaries in "capacity building"

Intermediary organisations should focus on providing the necessary "capacity building" required to support ICT usage, and should in turn have their "capacity built" in order that they may do so. "Capacity building" of course begs definition. Alan Fowler (1997) frames "Capacity Building" as the process by which an organisation reorganises itself in order to fulfil its goals more effectively. In order to do so the organisation needs to first define its goals clearly. Then it needs to define the role of each of its members in reaching its goals and then define how its external relations contribute to meeting its goals. This type of process is supposed to frame the consensus required for organisational change and development, and is somewhat related to the notions of empowerment employed within this discussion. Training efforts are then framed within this consensus in order to ensure that the new skills fit with the trajectory of the organisation.
Interestingly Fowler highlights the requirement of a catalyst for such change processes, due to a natural reluctance towards upheaval shown within organisational settings. Within developed countries ICTs, especially IT and the internet, have had a catalytic effect, prompting wide-spread reorganisation especially within market based organisations who have adopted them rapidly (Elliasson, 1990) Whilst I don't have literature to cite on ICTs and reorganisation within Civil Society, personal experience indicates that many small Civil Society organisations would not be viable without the information support provided by IT, and that ICTs in general are key to these organisations "getting their message across." As such there should be a

base of IT, internet and possibly ICT training capacity to work from within intermediary level support or umbrella organisations, and ICTs represent an avenue by which existing organisations can rethink how they go about their work. This could either initiate capacity building and/or prompt organisations to build upon existing critical, learning and political capacities.

Some issues in the measurement of the impact of information

Grassroots level organisations will ideally provide the forum for consensus on how to meet their needs, either through information provision, ICT support or through other means. This rests on the assumption of a participatory approach being followed, with all the problems that accompanying this (For more in depth treatment of the problems surrounding participatory research see Pottier, 1995) . The ways in which the evaluation of ICT initiatives is carried out also becomes a crucial issue, especially since ICTs are a relatively new area. This is especially true when considering the level of interest it now receives due to the growth of IT and the internet. Case studies form the bulk of current knowledge in this area. Since training is a key element in this approach, the production of training materials from case studies is a priority requiring in-depth evaluation, preferably with some standardisation in place to allow for comparison between cases. This would involve close collaboration between apex and grassroots organisations, with some delicacy involved in balancing participatory evaluation objectives with the requirement for somewhat standardised detailed information as a basis for training materials and also as a basis for designing future support activities.

I have come across one text dedicated to the evaluation of the impact of information (McConnel, 1995.) Unfortunately it focuses almost exclusively on IT and the internet, so is of limited value to this discussion. One interesting article within the collection is entitled *Measuring the effects of Information on Development* by Warren Thorngate. He is a social psychologist, and he describes the view on information drawn from his area. He points out that information cannot be captured adequately within the narrow definitions found within information science, such as those around reducing uncertainty. He points to the social functions of information, in line with the approach taken here. He argues that one way of viewing information is as a trade off between time spent in terms of attention, and time saved through more efficient activity.

The importance of measuring the impact of information related projects cannot be underestimated both due to the intangiable nature of information and the fact that it is largely a means to an end and not an end in itself, when it comes to meeting needs such as income and health (but not education.) "Management by output" techniques, such as the construction of logical frames, in order to set up indicators of impact before a project is implemented are important when working in this area (see Gosling and

Edwards, 1995 pp. 178-193 for more on this, and page 207 – 216 for an example of evaluating participation.) These indicators should be drawn up in a participatory manner: hopefully there would be a willingness to get involved in evaluation when it is clear that it will contribute to supporting other ICT initiatives through the production of training materials.
Since, as mentioned before, this is an area where capacity in the evaluation of a project may well be facilitated by the success of the project itself. If consensus formation processes are actually set in motion this type of approach may contribute to increased voice for grassroots actors in development debates. Certainly the dominance of voices from northern, rather than southern, Civil Society in international discussions raises ethical problems around who is really being represented (Jordan and Von Tuijl, 2000). Multilateral agencies are also in need of their evaluation processes occurring far more frequently at or near the grassroots (Pratt and Stone,1994).

Carolyne Dennis summed up these problems for me: "If these processes are not focussed around meeting needs, then they are just parasitic really, aren't they?" Whilst some work has been done on assessing the impact of information on needs (see "Tele-centre evaluations" and "Internet and IT evaluations" in General Web references) as mentioned earlier, there are major gaps, especially in the context of integrated "multi-media" approaches and empowerment. It seems that a lot of work still lies ahead.

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(FAO Projects)
http://www.fao.org/sd/cddirect/cdpub/SDREpub.htm

http://www.fao.org/WAICENT/FAOINFO/ECONOMIC/esn/field/fieldpro.htm
(FAO Soil mapping)
http://geoweb.fao.org/GBR/GeoWEB.exe$ChooseCtry
(Costa Rica)
http://www.infoagro.go.cr/
(Weather information)
http://nav.webring.yahoo.com/hub?ring=weather&list
Capacity building web-sites (A few examples):
(Oneworld)
http://www.oneworld.org/euforic/by_theme/120.htm
(INTRAC)
http://www.intrac.org/train-sc.htm
(Capacity.org)
http://www.capacity.org
CNET software download web-site:

http://download.cnet.com/downloads/0-10000-50-2070919.html
Computer Aid:
http://www.computer-aid.org/
Credit Watch web-site:

http://www.prism.gatech.edu/~rc166/creditwatch_frames_new.htm
Digital Governance web-site:
http://www.cddc.vt.edu/digitalgov/gov-publications.html
Educational initiatives:
(Tony Blair's pet project)
http://www.imfundo.org/
(Acrobat format report on the UNESCO Institute for Information Technologies in Education IITE)
http://unesdoc.unesco.org/images/0011/001169/116997e.pdf -xml=http://unesdoc.unesco.org/ulis/cgi-bin/ulis.pl?database=ged&set=3ADF
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http://www.unesco.org/webworld/wcir/en/index.html
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http://www.globalknowledge.org.my/index_main.htm
Health information (a couple of examples)
(Information for health managers)
http://erc.msh.org/
(Satellife project)
http://www.healthnet.org/
Hole in the wall project: short report and photos
http://www.indiansunset.com/dispatches/dis_03.htm
Internet and IT Evaluations:
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Kothmale Radio web-site:
http://www.kirana.lk
Labour News Production(LNP) web-site:
http://www.lnp89.org/english.html
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http://www.literacy.org/
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(Africa)
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(Pico BSD)
http://people.freebsd.org/~picobsd/
(Free BSD Webring)
http://nav.webring.yahoo.com/hub?ring=freebsdring&list
(Linux)
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http://www.panasianetworking.org/

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http://www.healthnet.org/
SQL sites:
(Download)
http://www.mysql.com/downloads/index.html
(Documentation)
http://www.mysql.com/documentation/index.html
Star-office download site:
http://www.sun.co.uk/promotions/software/staroffice/get.html
Tele-centre evaluations:
(IDRC resource page)
http://www.idrc.ca/reports/
(Electronic Journal of Information Systems in Developing Countries Vol. 4)
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Appendix 1:
World Bank national income categories
Figures quoted relate to GDP per capita:
Low income country (LIC): < US$470
Lower Middle Income Country (LMIC): US$ 470 –1190
Upper Middle Income Country (UMIC): US$ 1190 – 4650
High Income country (HIC): > US$ 4650
It should be noted that "income level" and "development" are not synonymous.

Appendix 2:
Potential actors within the model suggested.
Apex organisations
FAO
http://www.fao.org
IDRC
http://www.idrc.ca/
Netaid
http://www.netaid.org/
Oneworld
http://www.oneworld.org/
SNDP
http://www.sdnp.undp.org/
Tele-commons Development Group
http://www.telecommons.com/
World-space foundation
http://www.worldspace.org/
Intermediary organisations
This list is only a small selection of organisations, mainly relevant for the UK . The organisations listed should be in

contact with partner or parallel organisations in developing countries. Co-operatives, unions and the wide variety of other Civil Society actors should not be overlooked, despite under-representation in this list.

BOND
http://www.bond.org.uk/aboutus/index.html
BEARR Trust
Email: info@bearr.org.uk
Co-operative movement:
(US) http://www.ncba.org/
(Internationally) http://www.coop.org/welcome.htm
Charities Aid Foundation (CAF)
http://www.cafonline.org/uk_default.cfm
INTRAC
http://www.intrac.org/
TUC (Contact with unions overseas, see also National Education Centre.)
http://www.tuc.org.uk

Grassroots organisations

Even listing support organisations is a somewhat futile task, never mind the unmeasured number of grassroots organisations. Most of the apex and all of the intermediary organisations listed should have their own list of contacts to draw from.

Again it should be stresses that unions, co-operatives and other groups outside of the formal NGO sector are under-represented. Even within the NGO sector there is a bias towards organisations based within high income countries.

See also:

Arias, Pedro & Eide, Deborah (1995) *The Oxfam Handbook of Development and Relief Volume 3: Resources Directory for Development and Relief NGOs*; Oxfam: Oxford

A search of the Development Search engine Eldis (http://nt1.ids.ac.uk/eldis/eldsea.htm) using the keywords: "NGO directories" turned up this:

Various agencies are creating databases on non-governmental organizations (NGOs), including:

(a) Idealist / Action Without Borders: directory of some 16,000 organisations. http://www.idealist.org

(b) CharityNet: UK plus some international. http://www.charitynet.org

(c) USAID: directories of USA and non-USA NGO's (international and indigenous) registered with USAID. http://intranet.dimen-intl.com/usaid/index.html

(a) United Nations Non-Governmental Liaison Service (NGLS): database on developing countries NGOs with c.1600 entries. Information on contact address and subject interest. NGLS is also working on databases of NGOs accredited to the major UN conferences (lists of these are also issued with the supporting documents for each meeting); NGOs from the transition countries of East and Central

Europe; Women's organisations world-wide. WWW:
http://www.un.org/MoreInfo/ngolink/welcome.htm
(b) International Council of Voluntary Agencies (ICVA): Creating a
world-wide NGO database (possibly with support from NGLS on
developing countries): http://www.icva.ch/
(d) World Bank: Database of some 6,000 NGOs, may be out-of date.
Contact: John Clark, World Bank.
(e) IDIN institutions database: includes some of the more research
orientated NGOs (see separate entry)
(f) CRIES CDRom: includes database of research NGOs in Central
America and Caribbean (see separate entry)
(g) EDET database: organisations involved in environmental education
and training (see separate entry)
(h) UN Department of Humanitarian Affairs (DHA): directory of NGOs
providing humanitarian aid, emergency relief, food aid, refugee
support, etc. Available of Humanitarian Crisis Web, part of UNIENET
(see separate entry)
P
(i) OECD Development Centre: produced a general printed directory of
(1) development related NGOs in OECD countries in 1990, plus updated
sectoral directories on (2) the environment (1992), (3) human
rights, refugees and migrants (1993), (4) Population and Development
(1994: also available on CDROM), (5) Habitat and urban development
(1997). The information on European NGOs working on sustainable
development was [partly] updated in 1996 and issued on both print
and CDROM disc. These are not yet available online, but you can
request searches on the database by subject/country/organisation
etc. by contacting the External Cooperation Programme of the OECD
Development Centre. Fax: 33 1 45 24 79 43.
(j) NGO directory for Eastern and Central Europe: See separate
entry. Available via Cedar WWW
(k) Carter Centre WWW site has a listing of NGO's which they work
with in various countries (see separate entry)
(l) Housmans World Peace Directory (see separate entry)
(m) WHO has a directory of NGOs which are in liaison with WHO.

Available on their WWW server:
http://www.who.org/programmes/ina/ngo/1index.htm
(n) World Directory of Development Organizations and Programs: WWW directory of NGOs, some entries include information on countries/sectors in which they fund projects (see separate entry for more details). WWW: http://www.energ.polimi.it/development/
(o) Interaction Directory of African NGO Networks, 1998: http://www.ourdays.com/ngodir/infopage.htm
(p) NGO Exchange: host site or directory for a number of major developing country NGOs. http://www.ecouncil.ac.cr/ngoexch/index.htm