

Infomobilisation: Understanding and Making use of the Relationship between ICTs and Development

Despite the apparent enthusiasm among the major aid agencies and many developing country governments for the application of ICTs to the pressing needs of the poor, there is still a widespread misunderstanding about how substantial benefits can be derived from ICTs. Much of the difficulty that exists arises because the development community has yet to get in touch with the IT community in a meaningful dialogue that would help both bring to bear the many years of experience that corporations and organisations have had with ICTs in organisational settings. Many of the lessons that have been hard learned by the corporate world and the principles that can be derived from them can be transferred more or less intact to the development community. By applying them, we can note the following: -

- Alone, ICTs are insufficient for significant benefits to emerge.
- ICTs are best deployed to improve processes that are already working reasonably well.
- ICTs will not turn bad development into good development, but they can make good development better.
- Effective applications of ICTs comprise both a technological infrastructure and an information infrastructure.
- In rural settings in developing countries, (where the vast majority of poor people live) the technological infrastructure is always a challenge to install, but that task is relatively simple compared to establishing the information infrastructure.
- The application of ICTs in the absence of a development strategy that makes effective use of them will inevitably result in sub-optimal outcomes.
- Whilst ICTs provide opportunities for development, desirable outcomes always arise from the actions of people.

The general rule then is that the application of ICTs to development should always begin with a development strategy. From that, an information plan can be derived and only out of that should come a technology plan. It sounds simple and intuitive yet it is easy to find and recognise implementations that start the other way round, by beginning with the technology and working back to the development. It is these

projects that get ICTs a bad name, because whilst people are happy to take the credit for successes, it is usually the technology that gets blamed for sub-optimal outcomes.

When considering the use of ICTs for development it is essential to have a clear development strategy at the outset. Whilst the strategic thinking can be informed by an appreciation of the capabilities of ICTs, it is essential to have clear development targets before the form of use of the ICTs is defined. Additionally, in considering the development strategy, it is well to note that bottom-up, demand-driven development objectives are usually more preferable than top-down, supply-driven objectives, so that goals begin with an appreciation of the needs of development recipients, as they would themselves express them.

From an unambiguous articulation of the development strategy, an information plan is drawn. This will set down the information resources that will be required to achieve the development strategy. Again, this determination can be made against an informed background with regard to the capabilities of ICTs, but it should not be driven by the mere application of technology. Finally, a plan for the technology can be drawn up that will be capable of delivering the information resources required for achievement of the strategy. Whilst such an approach makes sense intuitively, there are many examples of technology related development projects that are technology-driven, top-down and supply-driven, and they often result in sub-optimal outcomes because of this.

So if technology of itself is insufficient, what else is required? Corporations talk of change management, sometimes an activity wrapped up in systems analysis and design, the process by which new methods and procedures (e.g. ICTs) are introduced into an organisation for good effect. It's a popular management topic; Amazon.com will give you more than 2,700 titles on the subject. Most address the thorny issue of getting people to change their habitual behaviours in line with some form of innovation, often manifested by the introduction of (more/new) ICTs. It seems a likely source of help for development professionals to understand how developing country communities might approach the same problem. How can change management be adapted to the needs of the protagonists of ICTs in development settings?

One such approach is a methodology called Infomobilisation. The methodology for Infomobilisation is based on socio-technical systems theory, which is an outgrowth of general systems theory and its application to the design of information systems in organisational settings. Socio-technical system theory claims that separate efforts to optimise the technical system and the social system will lead to sub-optimal results, and can even be infeasible. The observation is made that the same information system can be a success in one organisation/community but a failure in another, while the same organisation/community can experience success with one information system but fail with another. Hence, the information system and its context must be studied, understood, and managed together, not separately. Infomobilisation applies these theories to rural communities in developing countries, where they are seen to be even more applicable than in commercial or government organisations because community actions are influenced more by social factors and individual choices than are organisational actions.

The applicability of a socially based approach to information systems in communities arises from information technology being an *intellectual* technology, as opposed to an *industrial* technology. Industrial technologies, like a water pump or a generator, typically have a fixed set of functionalities. Information technologies, however, have functionalities that are not fixed at the outset, but can be innovated endlessly, depending on the interaction with the people who implement and use them. In the process of its implementation within an information system, a given set of information technology becomes subject to the shaping influence of the intellects of its implementers and users, who can end up creating an information system that the inventors and promoters of the technology never had in mind.

In this regard, it is well to appreciate some aspects of personal computers because they have come in for some criticism recently in the context of poverty alleviation. The PC admittedly is less than an ideal device for any of the tasks that it performs; yet we are still to hit the ceiling of tasks that it might be capable of performing. We should remember that the PC was never designed as a; communication device, an internet terminal, a network terminal, an entertainment centre, a graphic workstation, a design workstation, a photograph editor, a document publisher, a video post-

production processor, a hi-fi centre, etc. Yet it performs all these tasks quite well. What new functions for the PC are still to be invented that we have not thought of yet? The inappropriateness of the PC to any given task is the very key to its versatility and hence its endurance and to its prominence as an intellectual technology. Attempts to replace the PC with a device that is more focussed on some pre-defined functionality run the risk of jettisoning the very adaptability that brought us to the device in the first place.

Information technology then, once installed, can react with and extend the intellects of its implementers and users, who can then turn their transformed intellect to innovating even more functionalities for the technology, setting in motion an endless iterative sequence of action and learning. It has thus been shown that work systems are most effective when technology systems and social systems are closely aligned. Studies have also shown that when technology is used to enable new work systems where both social and technical systems change through a participative process, significant group performance improvement can be realized.

In Infomobilisation, the focus is on concurrent processes of technological and social change and on the joint optimisation of human and technical processes within communities. Infomobilisation is an organic process of change in which collaborative groups explore and learn about problems and solutions in an iterative manner.

The implication of Infomobilisation for the implementation of ICTs in development is that incremental and iterative development allows for a collaborative learning process based on evolving community needs. A large number of small projects are quickly implemented, rather than a few longer-term larger and riskier projects. Infomobilisation differs from change management in that it involves; adaptive planning, continuing change, community learning, disjointed incrementalism, adaptive learning, alignment of social and technological systems, participative values (as opposed to coercive), organic change (as opposed to directed change), discretionary coalitions, social and stakeholder groups, and outside/inside activists (as opposed to outside change agents).

Infomobilisation confronts communities with their information requirements. It addresses the design, delivery and utilisation of community information systems by;

- Defining community information requirements based on needs and priorities that have been expressed by the communities themselves,
- Igniting community aspirations and empowering communities with appropriate skills for fostering local development that is information-based,
- Expanding a community's social capital through enhanced access to communication facilities and information resources,
- Embedding community based ICT services within existing economic, governance and social structures,
- Infusing enhanced capability for information access within communities,
- Achieving sustainability; of financing, service delivery and operating functionality,
- Ensuring that benefits arising are not usurped by existing elites, and are equitably disseminated among the socially and economically disadvantaged groups,
- Extending and intensifying existing development programmes that carry a significant potential for additional community benefit from enhanced information management capabilities that are based on ICTs.

The methodology consists of the actions necessary to ensure that ICTs have optimal impacts for development within communities in developing countries.

The process is made up of;

- Familiarising communities with their existing use and sources of information as well as with the gaps that exist between existing and desired information resources,
- Alerting communities to the potential application of information to their problem-solving efforts and to their development aspirations,
- Sensitising communities to the existence and accessibility of abundant information resources and to the capabilities of ICTs for accessing and manipulating information,
- Propelling communities towards the acquisition of the new knowledge they will require in order to exploit the power of ICTs,
- Empowering communities with information literacy; the skills necessary for the mastery of new media, the internet and multi-media,

- Motivating communities to apply ICTs to the new opportunities that become possible from their relationship with ICTs,
- Encouraging the collection, classification, preservation and dissemination of indigenous knowledge and cultural information artefacts,
- Fostering appropriate local mechanisms for sustaining the equipment, services and operations of community based ICTs.

Infomobilisation uses various participatory mechanisms for community engagement, including; household surveys, including base-line, community focus groups, group dynamics, user committees, training and orientation sessions and demonstrations, facilitated community conferences.

These techniques comprise a community learning system, whereby the community starts by learning about its information needs, then begins to satisfy those needs and as a result of the experience becomes increasingly capable of understanding and satisfying information needs of a higher order. The progression can be depicted as an iterative process of action – evaluation of outcomes – learning – knowledge – further action.

Admittedly, ICTs may not help with some development problems, but it is foolhardy to claim that they can solve all problems and as a criticism, this arises in response to the claims of misinformed pundits who parade ICTs as a panacea for development. The history of ICTs is a graveyard of predictions that never materialised made by eminent people who seemed to be in the know. And yes we all have to grapple with puzzling interfaces that change with every needless upgrade, not to mention a keyboard design hardly changed from its 19th century origins. As to the cost of telecommunications and equipment, it is not inevitable that these should be expensive and the best case for realising reductions is made by effectively demonstrating how ICTs can be made to achieve development rather than focussing on poorly designed implementations as examples of why they don't. ICTs that are assigned to communities that have not been infomobilised will be destined to deliver sub-optimal outcomes, but it won't be their fault.