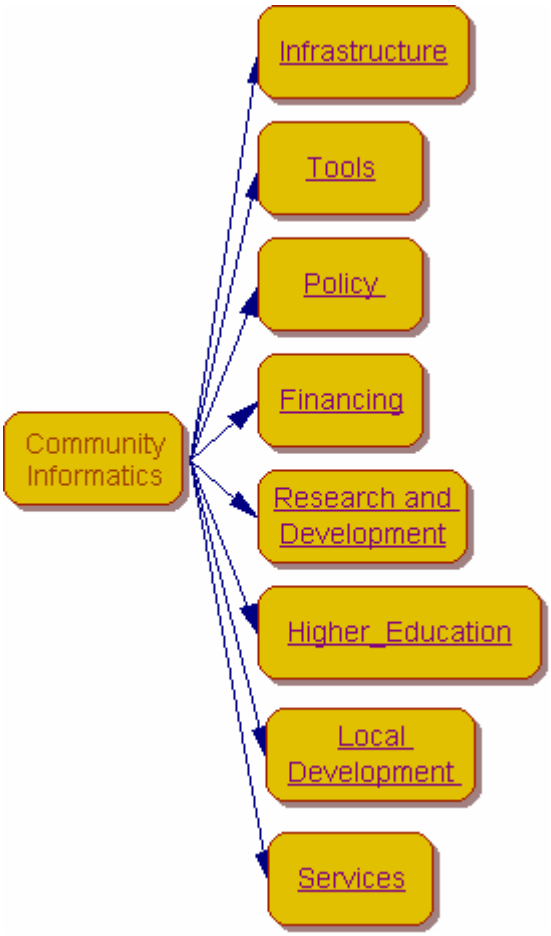
Community Information/Informatics Systems (CIS): Mapping the Sector

Overview and Rationale



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The Issue and Opportunity

The “Community Information/Informatics Sector” (CIS) is the broad framework which includes the range of community based information and communications technology (ICT) initiatives and the research, development, voluntary and employed participants, commercial suppliers, training and certification agencies, local infrastructure, and funding sources. The sector also can be seen as including the range of such community based ICT enabled application areas including local economic development and locally based e-commerce, community based e-health initiatives, locally controlled ICT environmental and resource management activities, ICT enabled local multi-media as applied to information and cultural production, local ICT enabled civic participation and social justice activism, community based ICT enabled education and training among others.

Pre-dating the emergence of the Internet, and growing in parallel ever since, have been substantial public and private investments involving thousands of small community-based information and communication technology (ICT) services and projects designed to benefit community social and economic development, community health and safety, public education, civic participation and social justice. Found in all parts of the world, these localized ICT systems, projects and services go by many labels: community networks, community technology centers, telecenters, digital villages, public or community access centers, community media centers, etc.

During the 1990s public sector financing that leveraged private, voluntary and community sector participation supported a considerable amount of pilot testing and evaluation of different community-based ICT models, applications and services while the Internet grew and underlying enabling technologies matured. During this early period, the emergent community based ICT – or Community Information/Informatics Systems (CIS) sector was highly fragmented and not generally recognized.

What was emerging however, was an organizational, technological, socio-economic and even political “space” where external public, foundation, university and occasionally private technology-oriented funding linked, sometimes successfully and sometimes not, with grass roots needs, initiatives and skills. These initiatives (often presented as “pilots” and “demonstrations”) were generally in advance of local understanding and expectations with respect to how technology might be usefully applied in the local context.. In practice, they were as much intended to demonstrate the opportunities that might be available as they were a response to an articulated community need.

Underlying these initiatives were three motivations, or goals:

1. The idealism of the early developers and implementers of the new technologies who saw them as a means for dramatically redistributing social, economic, and political access and power
2. The belief by governments, foundations and others that ICTs represented a new set of opportunities which should be as widely distributed as possible so as to avoid additional social and economic mal-distribution of resources and exclusion and also to facilitate the efficient delivery of existing services and

programs.

3. The expectation by the private sector and some governments that ICTs would become a significant factor in the larger economy and extending access for participation in this would lead to overall economic growth and development.

In the some 10 years of experience with initiatives in this sector it is probably fair to say that goals “2” and “3” have been at least partially achieved but that goal “1”, remains as yet unrealized. As the use of the technology has become routinized it is the latter two objectives that have increasingly obscured the first

However, at the same time as this process has been occurring, the same technologies have been profoundly transforming huge segments of the broader national and global economies through introducing new organizational strategies and business models, dramatic changes in operating efficiencies, the redesign and redevelopment of information intensive products and services and most recently the rethinking of the role of “knowledge” as a component of the productive system.

In fact it is within the corporate sector that goal “1” has been most effectively and dramatically implemented.

The financial, pharmaceutical, defense and telecommunications sectors to name only a few, have been completely reshaped/transformed in the last ten years because of the introduction of an ICT platform. Meanwhile, the use by local communities of advanced information and communications technologies has plodded along with a demonstration project here and a local initiative there—poorly or inappropriately-funded, ill-researched, and unrecognized. All of the initial fears that communities and particularly marginalized communities would become further marginalized have been realized

It’s not as though there has been a complete lack of resources flowing into this area—governments at all levels, foundations and the private sector have each contributed significant amount of funding but this has been in a piecemeal, fragmented way with no strategy or larger vision or plan.

The Rationale—Why Are We Doing This?

It is widely recognized that “access” to the Internet and other ICTs is insufficient to significantly improve the life-chances of populations increasingly at risk from rapidly advancing technology change. However, the pre-occupation with the Digital Divide has crowded out any serious attention which might be given to how the widespread availability of Internet access might be effectively used by individuals and communities with histories of social or economic inequality. Equally there has been little effort to respond to the increasing imposition onto otherwise active and effective communities of the broadening impact of ICT generated economic dislocation, and the polarization in wealth and opportunity that is developing alongside. The question remains: How do we ensure the equitable distribution to local communities of the opportunities and benefits created by ICTs?

We are seeing an increasingly wide availability of Internet access unaccompanied by

an effective enabling of the use of these technologies to achieve actual local benefits—economic, social, cultural, environmental, civic and political. This is where a sophisticated infrastructure for CIS oriented research, application development and local deployment and training, can perhaps begin to link the currently fragmented, widely dispersed and ill-coordinated efforts of practitioners, researchers, academics and policy makers.

Digital technologies are introducing new operating efficiencies, speed and flexibilities into the retail, banking, and other sectors as well as unprecedented access by all sectors to customers and suppliers. Behind the scenes supporting these developments is an enormous global web of industry, financing, academic research, policy and practitioners— organized within the general framework of "Management Information Systems."[1] This well established interdisciplinary sector swiftly identifies, describes, automates and scales nearly any type of business process and are reshaping the competitive structures of whole industries virtually over-night. But these resources are not generally available to those working with communities.

It is for these reasons that we are proposing the co-ordination of response within an overall framework as for example would be made possible within the emerging interdisciplinary field of CIS where the concepts, instruments and techniques of wealth/value creation so effectively being deployed in the commercial sector may be adapted and re-purposed for use by those working in non-commercial, small business and community enterprises.

Building a Sector

With no guarantees, there are indicators of a renaissance in community based technology strategies (CTC's, wifi, broadband, Indymedia). It is possible that a sustainable CIS sector may emerge over the next 3-5 years, if linkages within the sector can be realized and if key investment gaps are addressed. There is, for example, a rapidly emerging recognition of wireless (community) broadband as a cost-effective last/first mile solution and a broad acceptance of open source technologies as enabling tools. Needs for content rich (and locally based) applications that utilize broadband capability are increasingly expressed by technology proponents of both the public and private sector. Internet access and use of personal computing devices increasingly cuts across the socio-economic spectrum of the United States and presents new opportunities to enable a range of useful community-based applications and services in such areas as health, safety, environmental quality, civic participation, social and economic development, social justice advocacy and life long learning.

Why is it important that CIS be recognized as a sector? What differentiates CIS from for example, the Management Information Systems (MIS) sector with its related university teaching and research programs, public and privately funded R&D

[1] For a somewhat technical but useful discussion of these changes see R. Kalakota and M. Robinson, e-Busines 2.0: Roadmap of Success, Addision Wesley, Boston, 2001 among many others.

activities, certification programs, commercial investments and enterprises? Recognition of CIS as a sector as compared to MIS might perhaps be understood as analogous to the emergence and recognition of organic agriculture as a sector alongside conventional agriculture. Sectoral recognition influences the marketplace, policy agendas, and creates a framework for R&D, post-secondary learning, and private and public sector investment.

An emerging but still fragmented "sector" (such as the early days of organic agriculture) is often characterized by high levels of trial and error, low levels of product investment or formal R&D, and an inability of consumers and the marketplace to understand and value what differentiates the new sector from the conventional. Over time, organic agriculture became more broadly accepted by consumers, researchers, government and the marketplace. Results of early trial and error and subsequent research funding began to improve practice, drive down costs and differentiate the sector from conventional agriculture. Government policy was influenced in the form of standards and certification which further differentiated the sector and enhanced its value.

All these factors have now combined into a virtuous cycle of increased sectoral recognition that improves food quality and public health, and drives increasing economic return to producers and markets thus leading to growth and expansion of the public benefits that the organic agriculture sector offers. In a similar manner, CIS is an emerging sector, related but sharply distinct from conventional management oriented (MIS) information systems. It is important to lay the groundwork for understanding the scope and unique benefits that a CIS sector can and does provide how it can be differentiated and developed in conjunction with, but parallel to, MIS. Through the use of CIS, local communities are provided with opportunities to establish horizontal (peer to peer) linkages regionally, nationally and globally. These critical linkages can foster information sharing for collaborative economic and political initiatives that help sustaining community and family. CIS can also provides local communities with the means to participate actively as both beneficiaries of and contributors to the broad and evolving structures of national and global innovation, to emerging opportunities for political participation and e-governance, for bringing the opportunities presented by ICTs to support for local economies and economic development initiatives.

Outcomes

One immediate result of the project could be to encourage a rapid reframing of the current debate concerning the Digital Divide and place the urgency to develop community technology as the priority. Such "reframing" would shift the grounds of discussion from the now largely "academic" issues of the numerical values of the Digital Divide and the current policy focus on access, to ones which addressed the qualitative issues of effective use of ICTs as a possible enabler of all aspects of community life but particularly for local economic development and democratic empowerment and advocacy. This reframing would recognize the degree to which ICTs and digital technology overall, transforms enterprise and community and find

ways to enable development of applications and strategies to achieve a parallel transformation—economic, social, cultural, and political.

The concern with respect to the DD is that there is a systematic exclusion of certain populations from access to the Internet. While this is certainly of relevant concern, it has been the widespread experience that where uses of the technology are available which engage the potential user in areas and activities which have real purpose and meaning, then the user will make the additional effort to obtain access. Additional opportunities for local communities are arising through the massive increase in capacity for digital communication presented by Broadband technologies. Broadband because of its requirement for access to local civic resources (for example rights of way) and through the emerging business model based on aggregation of local demand built on the public sector as the core users will present significant new opportunities for local development and resources both financial and technical to civic authorities for undertaking local technology economic and social development initiatives.

The world is being transformed with ICTs. However, the early promise of the Internet as providing an alternative to centralized concentrations of power and as a means for widely dispersing economic opportunity has faded to be replaced first by the DotCom bubble and then by the current drive to make the Internet an adjunct to existing commercial interests. The early vision of the Network as an enabler of communities; of the isolated; the disabled; those excluded because of location, income or physical capacity; seems to have disappeared along with public efforts supporting the Net as a tool and a resource for all, a democratizer and an equalizer of opportunity.

Now more than ever there is a need for those concerned with the public good to intervene and ensure that the opportunities presented by ICTs are made as available to enriching the capacities of local communities as they are in enriching the range of consumer choices and corporate efficiencies. This is perhaps the important public task of the coming decade. Widespread availability of Internet access is only the beginning. Enabling the use of these technologies to achieve local benefits—economic, social, cultural and political to provide foundations for local communities—caring communities and caring services—will require the concentrated efforts of technologists, researchers and community practitioners and overall, a political will to develop and implement these applications. Establishing CIS as a vital sector comparable to MIS will go far to achieving these ends.