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Chapter II

Requirements for a Regional Information Infrastructure for Sustainable Communities — The Case for Community Informatics

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Although many community informatics (CI) efforts to date have been successful (see e.g., Beamish, 1995), few appear to have been part of a strategic response to the "big" problems of the environment and society; typically they address specific needs of particular communities, and have limited influence outside their scope. Nevertheless, they have created a wealth of experience which may be used in new endeavors, since they have exercised numerous technologies and economic models. However, if the concept of "community" is going to play a more important role in establishing sustainable economic, ecological and cultural systems for the future, community informatics will need to develop not just better solutions, but a *strategy* to support the community ideal.

This chapter argues that the object of such a strategy should be a *regional information infrastructure* (RII), whose purpose is to provide a *knowledge-processing* context for physical communities. The definition of requirements for an RII is effectively an expression of a community ideal, or vision, in terms of a technological strategy. Technical architectures stemming from the requirements represent a repository of solution patterns which can be reused and evolved. Of course, any such strategy is predicated not only on a *certain kind* of community vision, but the idea that "community" is indeed an effective response to global and local problems; thus the themes of community and knowledge are firstly explored as a background to the discussion of the RII.

A strategic approach offers a number of advantages over formulating *ad hoc* solutions in response to specific problems: firstly, it provides a thinking framework within which CI can more effectively operate as a discipline; secondly, it constitutes a more holistic approach to using information technology (IT) for community development, and should result in more effective solutions.

With an information infrastructure in place, physical communities would have a place to express and explore their own identity, history and interests; as a result, self-aware communities would emerge where once there were disconnected individuals. Once on the path of self-development, communities could use the RII to support regional agriculture, trade, local governance, environmental monitoring, basic health and education, recycling and waste disposal, and social and cultural activities.

Self-management holds the promise of reducing unemployment, reversing rural decline, and greatly improving the prospects for the environment. Furthermore, a well-designed infrastructure might provide the means of better focussing government social expenditure at points of need, leading to better outcomes.

Most of the qualities of the RII presented here are essentially precepts for using existing information technologies, such as:

- Being knowledge-oriented rather than technology-oriented.
- Enabling geographical region-specific data-gathering and knowledge management.
- Emphasizing participatory rather than unidirectional communication.
- Close integration into the community rather than elitist IT centres.
- Having an inclusive user-base and removing barriers to access.
- Encouraging interdisciplinary construction and use of knowledge.

Correctly implemented, the RII should provide a means of reestablishing the interplay between local environment, economy and society in the minds of people locally, consequently encouraging more sustainable and diverse social structures, in which better management of human impact on the environment will be possible.

Background

The Role of Information Technology

There are two important landmarks in the social history of information technology: the advent of the affordable computer, and the Internet. The first put information processing and knowledge work within the economic reach of both corporations, with their hundreds of desktops, and home users. The second has provided the means for connecting users, regardless of geographical location.

Although there are possibly more technically important events in the history of computing, these are now primary drivers in the "information revolution," in the sense that they have made the information-related activities of communications and symbolic processing part of our daily lives; many people, in their *private* capacity, are now active users, transformers, and producers of information.

Prior to the Internet, the information revolution predominantly consisted of

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