Social Impact of Virtual Networking

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INTRODUCTION

Information has been defined as a set of data, facts, and figures that have been processed in such a way that they become meaningful. They make intelligence. When information is applied to doing something and is globally pertinent, it is said to have become knowledge.

Information flow can be treated as an alternate wealth for a developing society and knowledge networking through virtual communication processes can break the lags and leads of information barriers. It can create an appropriate tool for achieving and facilitating exchange of information and knowledge among development partners, academia, policymakers, and the civil society at local, national, and global level to design and implement plans for development (Rahman, 2000).

Virtual communities are the collection of online links to a particular node, examples of which are Yahoo!, eBay, Amazon, or smaller chat rooms or instant message buddy lists. These networks of links are freely chosen, democratic, unrestricted, and may even be anonymous or pseudonymous (Roberts, Smith, & Pollock, 2002).

The concept of the virtual enterprise has emerged in management literature as the result of the fusion of technological advances and a claimed major socioeconomic paradigm shift. The virtual enterprise can be seen as a temporary alliance of contracted individuals or companies linked together by ICTs, which assembles for the purpose of a specific business task. Advocates of the virtual enterprise believe that it will replace the conventional model of organization in the 21st century (Introna, More, & Cushman, 1999).

The virtual network is being increasingly promoted as a model for a new form of ICT-mediated communication endeavor. Initially, the concept of the virtual network and the supportive role of ICTs as conceived by its proponents need to be clarified. Based on the initial understanding, the establishment of community information centres as the existing instance of virtual enterprise needs to be done.

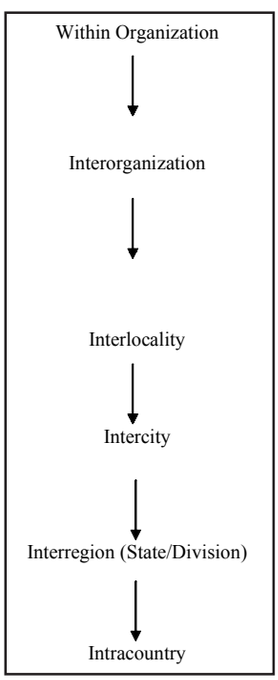
BACKGROUND

A virtual organization is a collection of geographically distributed, functionally, and/or culturally diverse entities that are linked by electronic forms of communication and rely on lateral, dynamic relationships for coordination. Despite its diffused nature, a common identity holds the organization together in the minds of members, customers, or other constituents (DeSanctis & Monge, 1998). *Virtual* is defined as "being in essence or effect but not in fact or name," and *network* as "an interconnected or interrelated chain, group, or system" (Lau & Hayward, 2000, p. 362).

To accelerate the development processes at the marginal communities, network hierarchies must reach remote places with easy access and availability, forming a robust intercommunication network. Figure 1 shows possible networking hierarchy within a country.

Rheingold (1994) defines virtual communities as "social aggregations that emerge from the Net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (p. 5). Integrating this concept along with economic, politics, and social aspects, networking among the virtual communities can be bonded to form a self-sustained en masse at the outset (Fisher, Sonn, & Bishop, 2002).

Figure 1. Networking hierarchy within a country



Communication is fundamental to any corner of the information coordinates but is preeminent in virtual organizations. In O'Hara-Devereaux and Johansen's (1994) view, without communication, the boundary-spanning among virtual entities would not be possible. Electronic communication enables parties to link across distance, time, culture, departments, and organizations, thereby creating "anyone/anytime/anyplace" alternatives to the traditional same-time, same-place, functionally centered, in-house forms of organizational experience.

Usually virtual networks are characterized by their (a) highly dynamic nature, (b) vibrant relationships among entities, (c) unrestricted boundaries, and (d) easily configurable structures. Relative to more traditional settings, communication processes that occur in virtual contexts are faster, customized, momentary, greater in volume, more informal, and more relationship based.

Barabasi (2002) presents a set of concepts which, taken together, comprise his science of networks. His theory addresses varied entities, from the microscopic cell to the macroscopic World Wide Web, as networks. It seems possible that his work offers to our discipline a new model, one that may address historic dichotomies of person/community, locale/relationship, gemeinshcaft/gesellschaft, and one/many. It may provide a path for virtual communities to become part of our ongoing research and conversation.

Enabling the remotely located dispersed communities with contents of their own need, at the times of their own demand, at the easy reach of their own are a few preconditions to enlighten themselves with knowledge and raise their capacity to contribute for the development of the society. Therefore, these forms of virtual networks, at the village/community level, create enormous opportunities to enhance the human capacity development processes and at the same time raise the economic platform of the community through diversified activities related to their livelihood.

METHODOLOGY

Networking minimizes the task of unoptimized searching and sequencing in distributed environment. Individual stations connected to cluster of networks and eventually interconnected together using similar infrastructures and optimized protocols are becoming popular throughout the virtual communities (Rahman, 2001).

Methods and approaches in organizing networked systems need intensive research, especially when the challenge is to implement information technology methodologies effectively to support organizational systems. Qureshi, Vreede, dG-J., and Vogel (2000) indicate that an understanding of organizational systems may be achieved through the use of research methods that (1) use theories to describe organizational systems, (2) provide sets of tools to enable real-world problems to be addressed, and (3) enable the researcher to interact with the organizational systems that they study.

For advanced information services, the powerful clusters/groups in society are provided with direct access to information. The information is then expected to trickle down to the majority at large. Quite often, research centres, for example, do not establish direct contact with all small farmers. They talk only to a small group of farmers to whom they offer information. They expect other community members to learn from this chosen group. Similar top-down information channel has been evolved in the information dissemination processes for social improvement of the community. Figure 2 shows a form of information channel.

In this top-down hierarchy, information on development issues does not flow directly to everyone in the community. The information flow is a multistep process. It flows first from the media, research team, and extension workers to opinion leaders or members of the information groups. From these small groups it flows to all the peasants and community members.

Numerous forms of ICT techniques exist that can support the communication of geographically dispersed communities. The article emphasized the dual nature of ICT, "which focuses attention on how information technology shapes human action through its provision of structural opportunities and constraints, while also recognizing that information technology is itself the product of human action and prior institutional properties" (Orlikowski & Robey, 1991, p. 148).

Activity of a typical information centre can be measured by the log in behavior of its clients. Usually, participants from city centres have better access to information than from village community centres. Similarly, city centre users have been found to login to the network (Internet) more frequently. Therefore, login frequencies of these two groups are different. Their behavior of login is shown in Table 1.

The degree of a social network gives an indication of how many entities a user interacts with. The average degree is calculated by:

$$\bar{d} = \frac{\sum_{i=1}^{n} d(nc)}{n}$$

where $d(n_i)$ = number of edges incident on node i
i = node as depicted in Figure 1.

Research studies indicate that degree of around unity in a typically medium network is acceptable, while degree