8-15-1997

Rethinking the Role of Information Systemsin a Changing Age: An Exploration

Ganesh Datt Bhatt
Austin Peay State University

Nikunj P. Dalal
Oklahoma State University, nik@osuunx.ucc.okstate.edu

Rethinking the Role of Information Systems in a Changing Age: An Exploration

Ganesh Datt Bhatt, Austin Peay State University, Clarksville, TN 37044, (615) 645-4358
Nikunj P. Dalal, Oklahoma State University, Stillwater, OK 74078, (405) 744-5089
Fax: (405) 744-5180, nik@osuunx.ucc.okstate.edu

Abstract

The purpose of this paper is to explore the impact of Information Systems (IS) on the fundamental questions of life. This paper presents a few of the many issues that lie at the intersection of IS, philosophy, and spirituality. Such issues include the need to incorporate meaning and values in the foundation of *IS;* the evolution of *IS* from transaction processing systems to virtual community networks; the distinction between data, information, knowledge, and wisdom; and the evolving role of *IS* in a changing context. A Web site will be created to enable further discussion of these significant issues.

Introduction

There is *no doubt* that continuing technological advances will cause phenomenal changes that will deeply affect every aspect of personal and organizational living. Emerging technologies (such as the World Wide Web) are making vast amounts of information available to every segment of society in an unprecedented manner. The search for things that are faster, stronger, and better has altered the pace and nature of existence. In this frenetic race, it is perhaps opportune to pause and rethink the foundation of Information Systems (IS) as a discipline, given that information systems have, in part, played an important role in effecting this revolution. The purpose of this paper is to explore the changing role of *IS* in the midst of rapid change and the impact of *IS* on the fundamental questions of life. At this stage, the paper poses complex issues without purporting to offer solutions. Many of these issues lie at the intersection of IS, philosophy, and spirituality. A Web site of these issues will be created to enable further discussion wnong concerned people.

Background

Traditionally, when the storage, computational, and distribution costs of information were high, a Icsyntactic" view of information as an economic resource was necessary to reduce costs. However, as the cost of information started decreasing, the meaning and values of information, that is, the semantic and pragmatic.

levels of information (Hedlund and Nonaka, 1993), became increasingly significant. This growing importance of semantics and pragmatics, not surprisingly, parallels the evolution of information systems - from transaction processing systems (focused *on data)* to management information systems (dealing *with information)* and further on to decision support and knowledge-based systems (that emphasize *decisions and knowledge).* However, many emerging systems are large virtual community networks and virtual distributed global organizations where meaning and values are as significant as the underlying information. It seems important then, that without excluding the past, the discipline of information systems is widened and strengthened to include the semantic and pragmatic aspects of information (Pawson, Bravard & Cameron, 1995). After all, the meaning and values that one attaches to information may have implications that go beyond organizational decision-making. For example, it is an observed fact that a religious book, such as the Bible, the Koran, or the Bhagvad Geeta, can provide a lot of meaning and values to many people. In this context, semantics would be the meaning of the stanzas or couplets in the religious book whereas pragmatics would be concerned with the use of the stanzas in day to-day life. Pragmatics would also include the values created by the religious work, which can be strong enough to affect daily decisions in various situations of personal and organizational life. (We are not debating religion here but observing the influence of spiritual information.)

Role of organizations

What is the role of organizations in this changing age? Traditional organizations have evolved over time. Taylorism represented the use of a scientific methodology that called for precision in using human power for the efficient production of work. Taylorism was efficient for increasing material gains in organizations but was not suited pretty to offer meanings, expressions, and creativity to individuals. As a reaction, the Human Relations school has emphasized the need to manage human psychology in organizations. However, as long as organizations are dominated by a profit motive, the Human Relations approach has been merely a means to the end of achieving higher profits. In contrast, emerging organizations, especially virtual social communities, may represent human goals for personal development, creativity, and experience. If traditional organizations are to capture human potential, they need a culture that is open and cooperative, a culture that encourages experimentation and learning, a culture that enables managers to grasp the realities of information at semantic and pragmatic levels. We may hope to see more intelligent, learning, and thinking organizations.

Understanding the human mind

A vital issue is the potential role of information systems in not merely supporting decision-making or providing more knowledge but in understanding the human mind. History provides evidence that despite all the technological advances, humankind is still divided by race, ideology, nationality, religion, income and so on. Attempts using information systems to mitigate the collective problems of society caused by these divisions, while desirable, are limited and are spread out thinly because they address the many symptoms but not the underlying root of all division - the individual human mind. Do information systems have a role (however small) to play in the transformation of the human psyche or is this on the far side of our mission? Do the answers to societal problems lie in generating and disseminating more infon-nation and knowledge, a task at which computers are particularly adept? Just as more information does not mean better decisions, can more knowledge produce more wisdom? Or is wisdom outside the realm of knowledge as some philosophers have suggested? For example, "We know too much, and that is why life eludes us; and the too much is too little. With that little' we meet the immense; and how can we measure the immeasurable? Our vanity dulls us, experience and knowledge bind us, and the waters of life pass us by (Krishnamurti, J., 1977, p. 210)."

These are open questions having implications for Information Systems as a discipline.

Problems

One of the problems that could arise as a result of incorporating semantic and pragmatic aspects of infon-nation in information systems is that values and meanings are subjective and actor-oriented, and hence, may pose unique problems of storage, knowledge representation, and verification for correctness, consistency, and clarity. However, it is clear that in a global divided world, there is a need to understand each others' values. To facilitate this understanding conceptually, it is important to differentiate between data, information, knowledge, and ultimately, wisdom. This task is an issue under study.

Presently, the World Wide Web can be thought as a means of meeting the expressions of people. But its potential is still limited in trying to express the semantic and pragmatic levels of information. One of the reasons that we are unable to use IT for transformation processes is that the foundation of Information Systems is purely mechanical. To use it for transformation, its foundation needs to encompass both human and organic views. Concepts relating to user involvement and human-computer interaction are the beginning; incorporating social views of transformation is the next step.

Conclusion

The purpose of this study is to explore the changing role of *IS* in the midst of rapid change and the impact of *IS* on the fundamental questions of life. At this stage, we are posing issues rather than attempting to resolve them. Such issues include the need to incorporate meaning and values in the foundation of *IS;* the evolution of *IS* from transaction processing systems to virtual community networks; the distinction between

data, information, knowledge, and wisdom; and the evolving role of *IS* in a changing context. Clearly, Information Systems as a discipline needs to evolve to meet these emerging issues.

References

Hedlund G., and Nonaka, 1. (I 993). Models of

Knowledge Management in West and Japan. In P.

Lorange, B. Chakravarthy, J. Roose, & A. Van de Van

(Eds.) Implementing Strategic Processes: Change,

Leaming and Co-operation (pp. 117-143). London:

Basil Blackwell.

Krishnainurti, J. (1977). Commentaries on Living.

London: Victor Gollancz Ltd.

Pawson, R., Bravard, J., & Cameron, L. (1995). The

Case of Expressive Systems. Sloan Management Review

Winter, 41-48.