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Abstract. Information in an organization is increasingly being recognized as a resource independent of the technology used to manipulate it. One implication of this recognition is the further recognition that information is the cohesive element that holds the organization together. Because of its importance to an organization it is crucial to highlight the significant differences between this resource and others when developing a management framework. Since information is so pervasive in organizations a holistic perspective is called for. This would result in changes in traditional management approaches to such information activities as computer/communications, data/word processing, internal/external databases, and formal/informal communications.

INTRODUCTION

Slowly, but surely, information in an organization is being **recognized** as a resource independent from the technology that is used to collect, store, manipulate, and communicate it. The impact of this changing attitude is felt throughout organizations as information is increasingly being recognized as the cohesive element that holds an organization together.

While data processing is certainly an important use made of the **information** resource, it need not be viewed as **the** only one. External data bases, special libraries, word processing systems, telecommunications, and internal memoranda are all examples of current uses of information in organizations. In addition, the technological advances exemplified in the automated office continue to erase the logical distinctions between the various categories of information processing. In keeping with this integration of information processing technology, new organizational perspectives are called for. Thus, it might no longer be appropriate to consider the data processing center as the sole or primary locus of information processing activity. Information processing can be looked at as an activity that goes on in every department. As such, everyone in an organization must recognize the importance of effective management of this resource. In addition, managers and traditional data processing people (programmers, analysts) must come to understand the implications of this broader perspective on their respective roles.

THE NATURE OF THE INFORMATION RESOURCE

It is in vogue these days to use the expression "the information resource". On a superficial level, one conjures up notions of an organizational asset that is, somehow, very important. But in probing beneath the surface

of this expression one finds a radical departure from traditional thinking about information processing. This is because the **information** resource is significantly different in nature from the other organizational resources: **financial**, personnel, and material.

First, while the other resources have a **physical** dimension, information does not. It is intangible. The data, or the raw material from which the information results is tangible, but the end product is not. In order to accept this property of information, one must also accept that there is a difference between data and **information**: information is the product of intelligence. This usually means that information is a human phenomenon. The final property of information also derives from its first property. Since information is intangible it is also not depleted with use. To the contrary, often, the more information one tries to communicate, the more one ends up possessing. (Consider the last time you tried to convey a difficult concept to someone.)

While the properties of information have not changed, what has changed is the degree of dependence upon information. Because of our quickly changing world decisions that an **organization** must make are more difficult. There is less likelihood today that a decision **setting** will be similar to one that has already occurred. Many more decisions that a company **makes** are first-time or one-time decisions. Thus, the need for the right information is more important than ever. For this reason information has been described as the cohesive element that holds an organization together. Or as Colin Cherry expressed it, society can be described as "people in communication". (1)

Because of the growing dependence upon information in an organization, those who control it, quite naturally, are in a position of power. Increasingly, the diagram of a company's information flows might be a better indication of the chain of real authority than the official organization chart.

Recognition of the differences between information and the other resources coupled with the recognition of its importance to an organization, then, results in new perspectives on the role of information. Traditional notions of information as a static commodity that gets manipulated by machines gives way to newer **attitudes** about how information is and should **be** processed in an organization. An overriding implication is for the management of this activity.

MANAGING INFORMATION FROM A HOLISTIC PERSPECTIVE

One management implication is motivated

by factors beyond the recognition of the importance of information. Changes in the management of information technology are also being forced by the convergence of the technologies. Two areas clearly point this out. The literature is replete with discussions of the computer/communications interface. New terminology has also emerged. Here in the United States, the term "communication" has been used to describe this phenomenon that abroad has been called "informatics". (2) The management aspects of this new information technology have also been addressed, albeit mainly at the national level. (3) For the organization this suggests that policies regarding either data processing or communications (whether voice or data) should not be established without taking the other into account. Satellite-based, digital-video-voice networks currently being developed give evidence that this fact is being recognized. (4)

The other significant area of convergence is that of data/word processing. Despite the fact that data processing revolves around machines whose origins are computational and word processing has evolved from machines whose scope is textual, both currently depend upon computers. As software for traditional computers includes increasingly sophisticated text editors and as traditional typewriters get "smarter" any clear distinction between the two areas of information processing fades. Given that this is the case, an information management schema should recognize both data processing and word processing as information activities within its scope.

The kinds of decisions being made and the role of information relative to them suggests that the information storage and retrieval function also requires alteration. Typically, the internal operational, financial, and personnel information is in the domain of the data processing department while the external information of a research and environmental nature resides in the corporate library. As external conditions continue to impact on internal operations the motivation to coordinate if not integrate both data bases grows. Some movement in this direction is evidenced in the offering of hardware that would facilitate such interaction. (5) But that much more needs to be done is exemplified in educational approaches toward the different information professionals. Students in the computer science sphere understand data bases to mean internal data bases while students of library science are given to understand data bases as they exist commercially.

A third area is perhaps the most difficult to approach from a managerial perspective. This is the integration of informal and formal information. The need to manage the processing of formal information is a recognized fact. This is the activity of data processing, traditionally. But the burgeoning amount of paperwork and human communication has motivated the computer industry to enter the other area of information processing as well. Witness the growth of word processing and electronic mail systems. The significant management issue does not lie in the acquisition of appropriate tech-

nology, however, it derives from the second property of information mentioned earlier. Since information is a human phenomenon, successful management approaches will be those that pay adequate attention to the behavioral domain. While behavioral considerations are important to all areas of information processing management they are especially important when dealing with informal information. How will people feel about having their research-in-progress stored in a computer and to which others might get access? Will people want their internal memoranda perpetrated throughout a company network? Isn't something of a human's uniqueness lost if every piece of information is reduced to bits and bytes? Can and should all information be stored in machine readable form? The answers to such questions must be answered within the context of information as a vital organizational resource. A balance must be struck between the cohesive role of information and the recognition of the power that information wields.

CONCLUSION

The information manager has no easy task. It has been suggested, here, that a successful management approach to information processing be based on a holistic perspective. This requires an outlook capable of integrating the diversity of information technologies and activities within an organization. In addition, the nature of the key elements in information processing (the people, the technology, and the information) must be taken into account.

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