On Some Issues of Information Resource Management in the 1990s

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The basic objective of this paper is to provide an overview of key information resource management (IRM) concepts. This is done using a three-stage framework for its implementation. The discussion focuses on three areas: planning for the acquisition, organizing, and control of information resources in an organization. A concise strategy for the planning process is also presented here. While the underlying IRM concepts are relatively simple, we have to be aware of some hindrances that are likely to be encountered during planning and implementation. We offer some guidelines, on the basis of our own experience and existing literature, as to how these issues can be resolved. Finally, any new IRM initiative has to consider the changing role of computing technology and its practice. Therefore, a separate section has been researched into to provide details of the new technology of the 1990’s and its influence over all aspects of IRM.

Information resource management (IRM) is a relatively new management concept that emerged in the past decade. It is concerned with the management and use of information technologies. IRM regards data, information, and the computer with its accessories, as an integrated collection of valuable organizational resources. It aims to provide guidance for their efficient and effective management. The principal advantage with IRM is the availability of timely, high quality information, and improved overall productivity. This is achieved by (Corbin, 1988)

(a) maximizing the use of existing resources,
(b) providing compatible computing systems,
(c) managing distributed information resources satisfactorily,
(d) increasing computing support to all users.

In the U.S. Federal government, IRM is a legislated edict and, in the commercial sector, it simply makes good business sense; both continue to invest heavily in information systems technologies and IRM holds the promise of maximizing these investments (Owen, 1987).

Before we discuss the various issues of IRM, a clarification of some basic information management concepts and terminology is in order.
Data, Information, Knowledge and their Relationship

Every organization relies upon knowledge and information to make decisions. This aspect of an Information System is explained in this section.

Management decisions, regardless of nature and scope, are based on data such as market statistics, cost and revenue estimates, inventory levels, shop floor operating data and many other factors, both quantitative and qualitative. Data in raw form, however, are not of much use for management decision making, though raw data are sometimes used for certain kinds of operating functions. It is necessary to subject the data to various processing activities such as comparison, classification, analysis, verification, calculation, summarization and communication so that they become factual information and of value to management. Information is a collection of data and facts processed in such a way that it provides the management with sufficient insight about a decision problem to which a solution is sought.

Although in everyday life the terms data, information and knowledge are used very casually and often interchangeably, in this paper we strive to make some distinction. Horton (1979) states that, “we have three levels, knowledge resources, information resources, and data resources, each with its special niche”. This will serve to acknowledge the different role played by each as an organizational resource.

Technically, the definitions of data and information according to the International Federation for Information Processing (IFIP, 1966) are as follows:

Data: A representation of facts or ideas in a formalized manner, capable of being communicated or manipulated by some process.

Information: The meaning that a human expresses in or extracts from data by means of the known conventions of the representations used.

Due to expert systems, the terms knowledge and knowledge-base have also become popular. To define the term knowledge we refer to the definition provided by the National Commission on Libraries and Information Science (NCLIS, 1975).

Knowledge: Information in a highly processed form.

Even though the distinction between the terms information and knowledge could get fuzzy at times, one way to distinguish them, however, is to consider that knowledge can be captured, documented and implemented as an expert system for decision making. It is therefore convenient to think of information and knowledge as two distinct resources.

From the above definitions, it is clear that the relation between data and information is that of raw materials to finished products. In much the same way that a finished product is of greater value than the raw materials of which it is made, information is of more value to management than the raw data from which it is extracted. And using the same analogy, we can regard knowledge as the finished product that is processed and refined even more. Such a distinction between information and knowledge is especially useful in the context of the knowledge-base of a firm - as residing in expert systems.

We can further define information in the context of management as a form of processed data that conveys to the recipient meaningful messages which are valuable in actions and decisions. Thus the value of information is recognized in a specific decision and in motivation, model construction and background building affecting current and future actions and decisions.

Information Resources

The electronic digital computer has proven to be, by far, the most powerful and useful data and information processing tool ever in-