

MANAGEMENT INFORMATION SYSTEMS

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INTRODUCTION

Management information systems encompass a broad and complex topic. To make this topic more manageable, boundaries will be defined. First, because of the vast number of activities relating to management information systems, a total review is not possible. Those discussed here is only a partial sampling of activities, reflecting the author's viewpoint of the more common and interesting developments. Likewise where there were multiple effects in a similar area of development, only selected ones will be used to illustrate concepts. This is not to imply one effort is more important than another. Also, the main focus of this paper will be on information systems for use at the farm level and to some lesser extent systems used to support researchers addressing farm level problems (e.g., simulation or optimization models, geographic information systems, etc.) and those used to support agribusiness firms that supply goods and services to agricultural producers and the supply chain beyond the production phase.

Secondly, there are several frameworks that can be used to define and describe management information systems. More than one will be used to discuss important concepts. Because more than one is used, it indicates the difficult of capturing the key concepts of what is a management information system. Indeed, what is viewed as an effective and useful management information system in one environment may not be of use or value in another.

Lastly, the historical perspective of management information systems cannot be ignored. This perspective gives a sense of how these systems have evolved, been refined and adapted as new technologies have emerged, and how changing economic conditions and other factors have influenced the use of information systems.

Before discussing management information systems, some time-tested concepts should be reviewed. Davis offers a commonly used concept in his distinction between data and information. Davis defines data as raw facts, figures, objects, etc. Information is used to make decisions. To transform data into information, processing is needed and it must be done while considering the context of a decision. We are often awash in data but lacking good information. However, the success achieved in supplying information to decision makers is highly variable. Barabba, expands this concept by also adding inference, knowledge and wisdom in his modification of Haechel's hierarchy which places wisdom at the highest level and data at the lowest. As one moves up the hierarchy, the value is increased and volume decreased. Thus, as one acquires knowledge and wisdom the decision making process is refined. Management information systems attempt to address all levels of Haechel's hierarchy as well as converting