

# Executive Information Systems

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## INTRODUCTION

An executive information system (EIS) is a computer-based system that serves the information needs of top executives. Also known as executive support systems (ESSs), EISs are essential for a business to succeed in today's highly competitive corporate environment. EISs gained popularity in the 1990s and became a staple in almost all large organizations. Today the focus is more on performance management and things like the ever-popular *balance scorecard* (Kaplan & Norton, 1992; Smith, 2006). However, even though very few articles are being written about EISs, they still exist because companies, quite frankly, have a need for EISs, as the need for executive information remains. As Power (2003) indicated, EISs may continue to take different shapes over the next few years but the basic principles of an EIS will remain the same.

## BACKGROUND

EISs evolved from decision support systems (DSSs) that were originated in 1965 almost in tangent with the development of more affordable mainframe computing. The DSSs were designed to assist managers with their decision making process. In 1979, John Rockart of the Harvard Business School broke the mold of DSSs when he published his groundbreaking article that led to the development of EIS. Rockart has written many articles on the topic since. Even though leading edge companies like Lockheed-Georgia and Northwest Industries began development of what would be EIS today, at the time fell under the category of DSS or a management information and decision support system (MIDS), John Rockart is credited with creating the concept of EIS, although not without controversy (Bhargava & Power, 2001). EISs

are said to have evolved from a single user model-driven decision support system the used predefined information screens that were maintained by analysts for senior executives. The early EISs were DOS and text based. The point and click functionality was not prevalent until the mid 1980s when a company called Pilot Software introduced the first Windows-based EIS platform. The advent of the Internet allowed an EIS to not only gather information from the companies' existing Intranet but also externally through the World Wide Web, and as a result they became even more useful in the 1990s (Basu, Poindexter, Drosen, & Addo, 2000; Power, 2003 ).

In keeping with Kelly (1994), the primary purpose of EISs is to support learning about an organization, its work processes, and its interaction with the external environment. Kelly feels that informed managers can make better decisions and supports his conclusion by referencing other related items. He feels that a secondary purpose of an EIS is to allow timely access to information. Although managers may be able to access the same information through traditional platforms, time constraints inhibit a manager from doing so. The third and final purpose of an EIS Kelly (1994) mentions is to point managers to specific areas that need attention or specific business problems. Although he feels that this ability can be commonly misperceived as an opportunity to discipline subordinates, these same subordinates spend time trying to outwit and discredit the system, and, as a result, overall productivity drops. When using an EIS for this purpose, managers must be careful not to focus on things that are irrelevant or that are important, but at the exclusion of things that are equally important.

Watson, Rainer, and Koh (1991) described the following characteristics of an EIS. They are:

- Tailored to individual executive users
- Extract, filter, compress, and track critical data
- Provide online status access, trend analysis, exception reporting, and drill-down capability
- Access and integrate a broad range of internal and external data
- Are user-friendly and require minimal or no training to use
- Are used directly by executives without intermediaries
- Present graphical, tabular, and/or textual information

EISs differ from traditional management information systems because of their ease of use and in the way they are tailored to executives needs. They are designed to enable a senior manager to obtain pertinent information at the touch of a button. They are very user-friendly even for the executives with subpar computer skills. An EIS can access data about specific issues and problems that are specific to an executive's information needs. They can provide aggregate reports, present information in graphical form, as well as provide extensive online analysis tools, including trend analysis, exception reporting and "drill-down" capability. They are intended to be used by executives without assistance and can easily be navigated with a mouse or a touch screen (Kelly, 1994; Marcus, 2006).

## **MAIN FOCUS**

### **Critical Success Factors**

Poon and Wagner (2001) combined the works of Rockart and others to come up with 10 critical success factors of an EIS. They are listed below:

- A committed and informed executive sponsor
- An operating sponsor
- Appropriate IS staff
- Appropriate technology
- Management of data
- Clear link to business objectives
- Management of organizational resistance
- Management of system evolution and spread
- Use of an evolutionary/prototyping approach
- Carefully defined information and systems requirements

Poon and Wagner (2001) used these 10 critical success factors in their case studies of six different companies. They discovered that three companies that meet all of the criteria had successful EIS, one was not resolved and two were complete failures. They also noticed a pattern, the three successful cases managed all of the measures right and the two failures managed all of them wrong. Although the sample set was not large enough to draw any conclusions, it did indicate that meeting one of these measures leads to satisfaction of the others and vice versa. However, in both cases that failed it did appear to Poon and Wagner (2001) that they wanted the system to fail. Although they were able to confirm the applicability of all 10 critical success factors, which include the original 8 from Rockart and De Long (1988), they did feel that organizations may "get it right" simply by managing 3 factors, championing, resources, and linking the system to your business objectives. They also saw that these systems have to be able to work side by side with the prevailing management system. Companies will likely succeed if they do not rely on an EIS to solve their problems, but use it to translate business goals into corresponding information needs and then into a well managed system.

An EIS is a flexible tool that provides broad and deep information support and analytic capability that help executives make decisions. They also are able to access external information. The data can come from a variety of sources including transaction processing systems, financial reporting systems, commercial information sources, text files, and manual data collection. They contain a variety of information depending upon the organization; they can include financial, marketing and sales, human resources, manufacturing, operations, and various types of external competitive benchmarks. There are many different reasons why executives use an EIS, some use them for performance monitoring or to keep abreast of current developments, other reasons are to do "what-if" analysis, trend spotting, and problem identification and resolution. The investments required to implement and maintain an EIS are substantial and ongoing.

We think that in order for an EIS to be successful it has to provide as much information as fast as possible. It has to be a system that is user friendly and displays data that can easily be explained to others so users do not become frustrated and unhappy with the system. It must be able to mine data from many years so it can

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