Understanding specific economic and operational benefits is critical to determine the best plan for your company to design and implement a new solution.

High ROI on Modern EIS

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1. Introduction

Back in the 1980s, the use of Decision Support Systems (DSS) and Executive Information Systems (EIS) reached a frenzied peak of interest by both practitioners and academic researchers. Companies scrambled to build user friendly analytic systems that could aid top level managers in their quest to crunch data and produce demonstrable business results. Academics studied the impact of DSS/EIS on users and carefully agonized over the best way to display complex corporate data in an informative manner.

DSS and EIS systems were being designed by a combination of users and Information Systems specialists, often jointly coordinating their efforts through the new organizational entity known as Information Centers (IC's). Users marched to the Information Center seeking assistance on the latest DSS/EIS building tools, and often found themselves becoming de facto programmers as they tried to make fourth generation languages do their bidding.

Much of the impetus for DSS/EIS came from the rise in popularity of desktop computing platforms, namely Personal Computers (PC's), and the realization that managers could directly access and manipulate data that previously required convoluted mainframe access and an army of technical specialists to make it all available. Where the old batch reports were once generated, managers could instead grab data, manipulate it, and produce their own various reports without seeking arcane approvals or suffering lengthy delays.

It seemed as though the future of DSS/EIS was bright and promising. Vendors of every imaginable software package suddenly declared themselves as DSS or EIS in nature. For example, statistical package vendors jumped onto the DSS/EIS bandwagon and tried to

convince buyers that the only sound support system was one that had the most exotic statistical techniques known to mankind.

Eventually, the frenzy subsided. Today, it is often difficult to even sharply delineate where a DSS or EIS actually differs from a good client/server application. As well, when Expert Systems (ES) emerged as a hot topic, a marriage was made with DSS and EIS, leading to expert DSS and EIS systems.

My preceding account of history does not suggest that DSS/EIS are gone or somehow forgotten. Indeed, I would argue that DSS/EIS are all around us, and I often see developers creating DSS/EIS oriented systems, sadly ignoring or blissfully proceeding unaware of the insights they could gain from the DSS/EIS rules-of-the-road collected over the last few decades.

As an example of what I consider a ``good'' DSS/EIS in today's state-of-the-art computing world, allow me a moment to share with you the characteristics of a system that my organization recently rolled out to a client company. My assembled team of builders were from both the old days of DSS/EIS and fresh-out-of-school DSS/EIS developers that came together to produce a robust system -- one that makes the users happy and made me proud of what can be done with modern technology.

2. ROI with EIS

The first step in developing any system is to listen to the targeted users of the system. In this case, the system was aimed at financial specialists, controllers, and corporate planning personnel from a large, international firm. We met with key users, and shared the collected requirements with other interested personnel around the world.

To keep costs of requirements determination to a minimum, we used phone, Fax, teleconferencing, and electronic mail to distribute and discuss the budding requirements. You can imagine the difficulties in getting consensus from users that are separated by distance (geography), time, language, culture, and level of computing expertise. The final arbitrator for difficult issues was corporate headquarters and a team consisting of the highest level executives of the firm.

Out of the requirements process we determined that the system would focus on the business planning process of the firm. This consisted of an annual budget preparation activity, a semi-annual budget preparation activity, a monthly tracking activity, and an overall strategy activity that continued throughout the year.

We further agreed that the system should provide a variety of user interface styles, allowing top level management a simple ``button pushing'' means to see important charts and financial figures, while allowing more in-depth analysis and manipulation by various

layers of financial and planning personnel. Thus, one interface was constructed that would allow the user to designate their skill level and then be provided on-screen capabilities commensurate with their skill and interests.

We also built the system to include an international switching capability. Here, the user indicates their designated country and the system switches to the appropriate country settings (including currencies). The system is PC-based, but allows connection into a pre-specified data mart that can be downloaded into the user's individual PC. For data sharing, we built-in a simple mechanism that allows a given user to share their data with another user by calling up their PC and conducting a data transfer directly from one PC to the other.

We added an encryption capability in the data transfer to provide some security in case the transmission should be corrupted (likely over great distances). The system itself does a self-check when first started in order to detect any tampering, either by a virus or by an intruder that might have played with the data while the user was away from their PC.

So far, we have found user reaction to be of great joy. In the past, much of the same activity was done via paper distribution, or via the exchanging of diskettes back-and-forth. Analyses being performed by various groups were essentially duplicated by other groups since they were not aware of the simulations already being conducted. The system incorporates the essential simulations being performed, and allows users to merely invoke the desired simulation component.

Though it is still a little early in the roll-out to claim complete success, users have already indicated that the business planning process has been shortened, and they have experienced less confusion about the plans and their status. Also, the cost of the ongoing plan and budget preparation has dropped, upper management has been receiving a more timely indication of how well actual business has been performing versus the planned business (giving them earlier reaction time), and users are examining more in-depth analyses than they had time to do before.

3. DSS/EIS Ingredients

I do not have space here to run through all of the agony and ecstasy involved in developing this particular system, but I would like to highlight some of the essential aspects of today's DSS/EIS that I urge both practitioners and academics to be investigating:

- INTERNATIONAL aspects of DSS/EIS are increasingly important as firms compete worldwide and expect all subsidiaries to be working as a teamþno

matter what other factors might separate them, the use of computing should help bring them together.

- MULTIPLE INTERFACES are needed in a single system so that users of differing skills and interests can navigate at their own desired pace and level in the system.
- COMMUNICATION of evolving data and simulations must be made readily available to users so that sharing can be done without laborious handling or costly delays.
- SECURITY of systems must be included as an important element in the system, especially as an internationally connected system is likely to encounter intruders or virus attacks.

These and other characteristics of a good state-of-the-art DSS/EIS are worthy of attention by practitioners who want to better exploit their computing investments, and is a ripe area of study by academics seeking to push the limits on connecting technology to decision makers and their decision-making process. DSS/EIS is still alive, and whatever name you decide to give to such systems, the principles of understanding what makes decision-making systems ticks is still an open area that is fruitful for achieving high levels of Return On Investment (ROI).