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Abstract

Executive Information Systems (EIS) implementations are political because they offer an opportunity to change the organizational power structure. EIS developers who ignore this issue when implementing an EIS are bound to fail. After all, these systems are targeted at the organization's most influential executives, and thus have profound commercial, organizational and political implications. The change in information availability brought about by an EIS implementation can, in turn, lead to feelings of resentment, concern and resistance among other members of the organization. Therefore, an important issue in EIS implementation is the organization's receptiveness to the changes which are likely to be effected by the EIS. This paper reports on the failure of two organizations to successfully implement an EIS against organizational resistance. What makes these cases interesting is not the issue of organizational resistance, but the fact that they failed against the will of its top executives, apparently brought about by the information systems' contradicting the prevailing *management* systems.

Research Method

In order to understand how organizational resistance affects EIS implementation, three Hong Kong organizations which had implemented EIS were studied. One represented a successful EIS implementation, the two others were failure EIS cases, where the EIS was abandoned after an initial (prototype) implementation. The research was conducted through a series of interviews with several key personnel in each organization. While many questions were open-ended, questionnaires were sent before the interview, thus ensuring that all interviews followed the same general format and that interviewees could provide more informative data.

Analysis of the Effects of Organizational Resistance on EIS

Overview of Companies and Systems

At the outset, all three studied organizations (Railway, Shipping, Utility) showed several similarities. All three organizations had large transaction volumes and all were using information systems extensively as part of their operations. While Shipping was the smallest of the three companies, with only hundreds of employees, it was the most international in its reach and part of a larger conglomerate. But beneath many superficial similarities lay more fundamental differences which the following case descriptions will indicate. To identify them, we will begin with a description of the only success case, which will serve as a benchmark for the subsequent failure discussions.

Railway Corporation

Several years ago, executives at the railway corporation became aware of the importance of having an IS strategy and decided to place significant investments (tens of millions of US$) into IS development. Clearly, the Railway Corporation was cash rich and willing to invest heavily into information technology. One of the major IS initiatives was the development of an EIS. The corporation began developing its EIS in that same year. The first phase was completed a few years later(!), for use by the Chairman and the heads of each division, altogether seventeen users. The corporation built its EIS in-house, instead of buying an off-the-shelf system, because seemingly no EIS package suited company needs. In other words, significant in-house expertise and development resources existed to create this relatively new technology application.

The international team of railway executives was willing to use new technology to help compile information. Before implementing an EIS, executives had spent much time in face to face or telephone contact with peers and subordinates. Most information was received in an unstructured way. After the EIS was implemented, executives spent less time reading highly structured information in reports or on computer screens. Most executives found the benefits of the EIS and increased use of the system as a consequence.

Since the whole idea of executives obtaining information directly from the computer was a novel concept, the corporation arranged computer training courses for executives and their support staff. In addition, the EIS committee demonstrated the EIS to executives in their offices. As a result, the executives became more computer literate and developed greater reliance on

information technology. This overcame the executives' initial hesitation to the EIS.

In order to overcome company staff members' resistance to loss of control over information, the corporation used education, persuasion and negotiation. The aim was to convince staff that, while management would access information directly, their roles would not be diminished and might actually be enhanced. The data providers were identified prominently on the screens displaying their data, and having been given the means to update, annotate and to provide interpretations of the information. Involvement of the data providers in these ways could seemingly enhance their influence rather than threaten it.

The high cost of introducing an EIS was not a major concern in the corporation. Obviously, the corporation had strong financial support for IS projects. Hence, although the implementation cost of the EIS was high, the corporation's Managing Board considered it worthwhile to develop the system, despite the fact that EIS benefits were difficult to quantify.

Analysis

The railway corporation made a strategic IS development decision and did what it take to complete the implementation. While one might argue that in-house development was not the most economical or fastest way to develop the EIS, the company had enough expertise, resources, and "stamina", as well as executive patience, to create a successful implementation.

There was resistance within the company against the new system, but this might be considered "normal" resistance which exists in organizations whenever a new significant system is launched. And this resistance was dealt with effectively, through training, negotiation/persuasion, and resources.

Shipping Company

The shipping company offers worldwide shipping services, plus trucking, container chartering, and other related services. The company's EIS project started in the mid-nineties, sponsored by the company's executive director. Motivated by the organization's rapid expansion over the previous years (with a 15-fold staff increase over 10 years), the executive director was seeking a way to monitor company activities more effectively. Hence. the EIS was developed with the aim of providing the ability to drill down into areas needing further examination to produce relevant information. The system was expected to be used for strategic, business and marketing planning at the most senior level. It was intended for all corporate directors and their immediate assistants.

Because the cost of acquiring an EIS software package was considered high and a limiting factor to further growth, the decision was made to develop an in-house EIS. This was viewed as a less expensive alternative. At that time, key decision makers did not realize the full cost to develop a complete system, and the substantial subsequent costs to support it. With full top executive support, the company began its EIS project, hired a new project manager, and immediately started the development.

As the implementation progressed, it also became clear that subordinate line managers who traditionally provided information to the directors, were not willing to co-operate with the EIS project to define the data needs for the system. The middle management felt threatened by the possibility of a diminished role in supplying information to executives. They also feared that their operations would become too visible to top management. Their lack of co-operation extended the development period.

Furthermore, a lack of development staff slowed down progress even more. Six months after the introduction of EIS (prototype), the EIS project manager reported that it was difficult to get adequate data for the EIS. The executive director, who initially had strongly supported the project did not realize any benefits from it and became reluctant in further providing his requirements. The EIS project manager subsequently was drawn into another, more urgent project, and the executive director, after some discussion, decided to cease the project. No effort was made thereafter to resurrect any kind of EIS.

Analysis

Several factors seemed to have "derailed" the EIS in the shipping company, including an inaccurate assessment of resource requirements and staff shortages. Yet in any organization there are projects competing for staff resources and those deemed strategic by the organization will get the necessary support, while others will not. Here, the highest level of management considered the project strategic, but clearly not middle management. The middle management did not want to co-operate with the EIS team, out of fear that their importance would be diminished once executives could get information from computers instead of them. In addition, since they were not the users of the EIS, they could not see any personal benefit from the system. Therefore, they were not willing to spend time to help the EIS development team, thus dragging out the development process to the point were senior executive interests had finally shifted.

Utility

The utility had a long history in its business and was serving over a million customers. Given the large customer base, the company also processed millions of

transactions per months, but still, information systems had a predominantly operational ("backbone") focus. The interest in EIS was initiated by the Managing Director. He requested the IT department to pilot an EIS, to serve him and other senior executives, in all about 15 users. The senior executives felt that there was "too much information circulating within the organization". They expected that the EIS could help them to improve quality of data and eliminate unnecessary distribution of information.

As the utility did not have any experience concerning EIS development, it was decided that there would be no attempt to develop an EIS in-house, but to customize a vendor solution. Based on its reputation, the Comshare software was selected.

A Working Committee was set up, comprised of the Managing director, other key executives, their assistants, and consultants. Their role was to define executives' requirements and develop a prototype. Over a period of several months, the committee met on a regular basis to precisely define information needs and presentation formats to best support executive decision making. However, the Managing Director found that he did not have time to oversee the whole EIS project, and therefore delegated the planning tasks to other executives.

It turned out that defining users' information needs was difficult. The team had a problem to arrange time with the executives because they were very busy. And although executive users were interviewed, they were often vague and uncertain about their information needs.

Consequently, after the vendor had built full prototypes of the EIS and let the users browse the contents of the system, they reported that the system did not satisfy their needs. Unclear about the system's objectives, they could not see any great benefit in their continued use of the EIS. Thereafter, further EIS development was quickly abandoned.

Analysis

At the utility, executive culture was not ready for the capabilities an EIS could offer. Some executive users were reluctant to embrace the technology because they decided that the system was too complicated to operate and access information. The Managing Director, who had clear objectives for the EIS, delegated oversight of its development to other executives who lacked this vision who lacked a regard for the value of information systems. Their resistance to the system directly affected the EIS development. However, this resistance was not managed by the EIS team at the utility. Furthermore, in an organization where information systems traditionally were operational (transaction processing), creating a strategic vision for information systems required significant extra effort. The apparent shift in the Managing Director's focus away from the system's development signalled just the opposite to other members of the executive team.

Conclusion

EIS introduce a completely new reporting structure in an organization. They can shift the balance of power within an organization, thus resulting in resistance by those who fear negative effects of that power change. To successfully install an EIS, sponsors and designers must anticipate and manage this resistance, as it is a common cause of implementation failure (Rockart and DeLong 1988).

Although all three studied organizations had to deal with resistance against the EIS, one, the Railway company exhibited just "normal" resistance, which was managed effectively within the company. The two failure cases showed abnormal resistance, with either the middle management, or members of the executive team not supporting the implementation if not fighting its success.

Interestingly enough, the two failure cases occurred in companies with a Chinese management system. In the Chinese management system, the owner typically makes all strategic and major personnel decisions and the delegation to middle management is low. Direct supervision of work and personal reporting relations are more important forms of control, and the formal information system is often ignored and bypassed. Information then becomes a "currency of power and influence", rather than the necessary input for line managers to make good decisions. An EIS directly violates all these principles of the management system and therefore will require great changes in the management system, or will face great obstacles. Yet with the Chinese management culture, staff members also tend to be more conservative, unwilling to accept changes and new ideas. Thus, EIS success is not at all certain.

References

Available upon request from the authors.