

USER PARTICIPATION ON THE DEVELOPMENT OF INFORMATION SYSTEMS

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Abstract

The contribution of information systems (IS) to superior business performance is predicated on the dynamic coherence of business and information technology (IT) strategies and the underlying architectures and systems that support the strategy execution. The early participation of users on the system development process may contribute to the business-IS alignment. This paper explores the way how users may participate and promote their right involvement.

Keywords: *Strategic alignment, information systems development, information systems use, user satisfaction.*

1 INTRODUCTION

Despite the many well known success stories of the use of Information Technology to deliver benefits to organisation, there is considerable evidence that the implementation of IS can be hazardous. IS success is widely accepted throughout IS research as the principal criterion for evaluating information systems. However, theorists have not agreed the constructs that better represent IS success. The problem lies in the ambiguity of the concept. DeLone and Mclean (1992, 2003) construct a model looking for a unifying taxonomy that can be applied in the selection of IS success constructs for study.

It has long been argued by both practitioners and researchers in the information systems (IS) field that the contribution of large-scale IS deployment to superior business performance is predicated on the dynamic alignment of business and information technology (IT) strategies and the underlying architectures and systems that support the strategy execution.

This paper attempts to analyse one aspect that may contribute to help or hinder the successful strategic alignment of the IS development. We will focus on the analysis of the user participation during the development process. The introduction of this paper is followed by a literature-guided framework, which includes a brief review of the construct of strategic IS alignment. Then, we identify the information system users, and analyse the acceptance process of a new system. Later, we provide some suggestions that could contribute to a positive participation of users on the development process.

2 THEORETICAL BACKGROUND

The concept of strategic alignment between IS and business strategies is being analysed in the IS literature (Henderson and Venkatraman, 1991; Chan *et al.* 1997, Van der Zee and De Jong, 1999; Reich and Benbasat, 2000; Chan, 2002). Managers should ensure a clear link between business goals and the IS/IT strategies that support them in order to get significant value from investment in IT.

Strategic alignment between business and IT is influenced largely by social constructs such as the level of communication between business and IT executives, the level of connection between business and IT planning processes and the level of shared domain knowledge between business and IT executives (Reich and Benbasat, 2000). The difficulties for attaining strategic IS alignment may be due to several factors including organizational inertia, gaps in knowledge between IS and business managers, split responsibilities and a tendency for

underestimating the problems attendant to effecting IT-enabled organizational change (Hirschheim and Sabherwal, 2001).

Strategic IS alignment is hardly complex to attain in practice because IT is often deployed primarily for solving pressing functional and technical problems without regard for overall strategic considerations. Too often, managers fail to anticipate the broader implications for organizational change that the implementation of a new information system generates.

DeLone and Mclean (2003) synthesized a six factor taxonomy of IS success from the diversity of IS success measures used in the literature. The categories of the taxonomy are System Quality, Information Quality, Service Quality, Is Use, User Satisfaction and Net Profit.

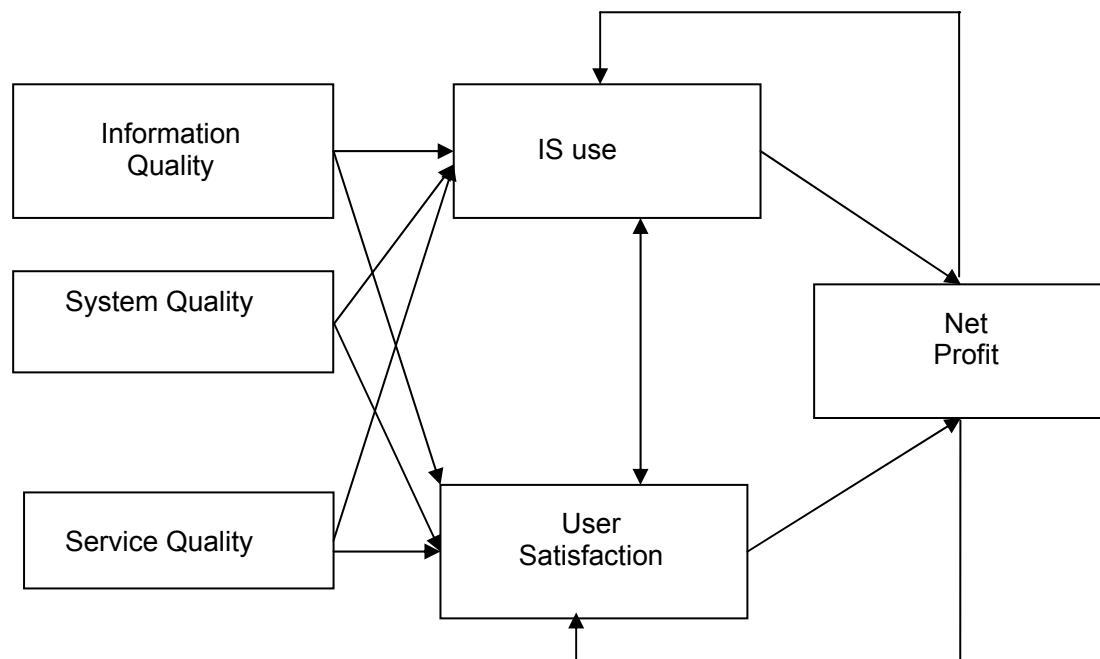


Figure 1: Information Systems Success Model (DeLone and McLean, 2003).

DeLone and McLean (2003) consider Use as an IS success variable. They label IS Use as the consumption of IS output, which they consider to be a precursor of individual impact. In this model, IS use is required to significantly impact realization of system benefits. Although, DeLone and McLean did not mention Perceived Usefulness in their taxonomy, we make the assumption that perceived usefulness is included on the taxonomy category, User Satisfaction. Perceptions on usefulness derive from personal valuations of an IS.

We may consider that an information system fails when the output it provides does not match its expectations, when it can not be developed under given budget constraints, when users show resistance to the system or they simply do not use it. Information systems researchers have documented widespread failures in the implementation of information systems (Bostrom and Hienen, 1977; Joshi, 2005).

Laudon and Laudon (2000) estimates that around an average of 75% of information system fails to get the objectives initially planned. It would be interesting to analyse the reasons for that high failure percentage. Although, we may find different kinds of reasons, which may influence on the failure/success of the information system: lack of support from top management (Newman and Sabherwal, 1996), poor management practices to create new procedures and roles to adapt to the new information system (Davenport, 1998), managing implementation (Joshi, 1991); in this paper we will focus on the lack of user participation during the information system development process.

3 USERS PARTICIPATION

Before a system is designed and implemented the future users must know how it is going to influence on their jobs. The implementation of an information system may be considered as a political process where the user's acceptance of the new system will play an important role on its success. MIS researchers recognize users acceptance of systems as a major objective of systems implementation (Ginzberg, 1981). We can analyse the user's acceptance process of a new information system from an equity theory perspective whose applicability has been already recognized on the organizational literature (Greenberg, 1982).

Equity theory suggests that individuals are concerned about their inputs, outcomes and the fairness of an innovation or change that is going to be implemented. Individuals are also constantly comparing themselves with others in their reference group to assess whether the relative gains are the same (Adams, 1963). If the individual perceives that the new information system will bring him a decline in his/her net gains, or inequity compared to others, then the individual will not accept the new system. On the other hand, if the individual perceives an increase in his/her equity is likely to welcome the new information system.

Now, a new question could arise: Does the end user involvement on the development process assures that he/she will perceive an increase in his/her equity? As any good question, it does not have a good answer. Nevertheless, we can say that the early involvement of the user on the information system development may provide a clear understanding of the consequences

it may have for him/her, and this will eliminate or at least reduce the suspicious side of the unknown. And, if the new system is going to bring an increase in his/her equity he/she will have a more positive predisposition and will be motivated to work hard on the development of the new information system.

User participation will allow understanding of the thinking behind the strategic IS plan and will resistance to change will be reduced. There is a trade-off in the number of people to involve. The more people you involve, the longer the elapsed time for the planning. However, the more people you involve, the greater understanding and support for the plan.

We can not say that getting the predisposition of users to participate on the development process will be a panacea. Once we reach this predisposition we have to see if its participation is going to be possible and if it is going to bring benefits to the process output. Land and Hirschheim (1983) review the problems that involving users on the information system development process may appear. They identified problems ranging broadly from political problems involving competing user groups to more operational ones such as the difficulty to develop system specifications understandable to the users.

Then user participation in systems development is believed to have positive effects on user acceptance, but it does not guarantee to bring positive benefits to the process helping to the success of the new system implementation. And even, as Gallivan and Keil (2003) say, it could be dangerous “to assume that user participation necessarily leads to successful project outcomes” (pp. 39).

Newman and Sabherwal (1996) consider that user participation in software development is beneficial because it improves the requirements determination process and keeps user informed about progress. These two reasons may lead users to perceive a greater equity leading to higher levels of user satisfaction and system usage. But, the benefits of user participation will be moderated by other factors, such as the generally assumed fact that there will be an effective communication between users and software developers in order to identify the system requirements. In order to get the benefits of user participation on the development process it will be necessary an effective communication between both parties. “Effective user-developer communication does not occur, either because information is not transmitted between the two groups or because information that is transmitted is somehow misleading or distorted” (Gallivan and Keil, 2003; pp. 42). Land and Hirschheim (1983) pointed the difficulty for developing system specifications understandable to users as a disadvantage with involving users in the design process.

Gallivan and Keil (2003) propose a process model that delineates four stages for the communication between users and software developers. This model suggests that software developers have to look beyond reading between lines the information content that users provide. User participation is a generally desirable condition for successful project outcomes, but its mere involvement is not a “magic bullet” technique that is able to overcome the high failure rate. It requires to be properly managed to ensure that there will be an effective communication between users and software developers to identify the system requirements that will allow the strategic alignment of the new information system.

4 GUIDELINES FOR STRATEGIC ALIGNMENT OF INFORMATION SYSTEM DEVELOPMENT

When developing an information system, too often companies think they are merely putting in a computer system, and they do not spend enough time to analyse the strategic implications of the new system. They also do not realize that their IS can have significant implications for the way the company is organized and the day-to-day culture of the organization and often they make simplistic assumptions about how the system will change the culture as if by magic (Davenport, 2000).

Effective IS implementation seems to be associated with firms that have superior capabilities for orchestrating the design, deployment, management and use of the required system.

4.1 Ensure organizational climate

It is essential that those who will be affected by the change share values and visions. The greater the extent of the change the more important it is that values and visions are shared. With strategic IS planning the focus is on articulating a vision of the role of IS in the organization and developing a strategic envelope that defines the parameters for strategic application of IT systems. Strategic IS planning should be constructed as a dynamic process. Traditional top-down IS planning is no longer suitable. IS/IT planning processes must become more iterative, goal oriented and evolutionary and involve a continuous process of organizational learning (Van der Zee and De Jong, 1999).

In many companies, the IS plan is developed by a few people, often from the IT Department and some consultants. Then, the plan is presented to the organization and not surprisingly the plan runs into immediate resistance. People do not understand the thinking that went into the plan. A better approach is to involve not just several more IT staff and managers, but also

business managers and their employees who will become the main users of the new developed system.

4.2 Ensure the understanding of all stakeholders

The introduction of a new information system is hampered by uncertainty. A typical reaction to the uncertainty engendered by change is anxiety accompanied by actions to resist the change. Some of the required information that may help all stakeholders to understand is related to:

- The reasons and motivations for change
- What pay-offs can be expected from the change, even if these are negative for the stakeholder in question
- The process of change, including the role the stakeholder is expected to carry out, the new skills required and the training that will be followed

4.3 Set up organization to manage change

It is important to identify the obstacles which may hold back the implementation of the project. Usually, obstacles come from the little ability of the organisation to absorb the changes required by the new system. The organization must be prepared to handle the change that will imply the new information system. In order to manage change it will be recommended to establish channels throughout the organisation which enable stakeholders at any level to communicate their concern and knowledge. Usually, resistance to change arises from the non-availability of communication channels.

It is highly recommended that organization charismatic leaders are identified and legitimised to guarantee their support to the project.

5 CONCLUDING REMARKS

Achieving alignment between business and IS/IT is not a trivial task. Senior executives should articulate a comprehensible vision and strategy for IT within the business. This will provide the central reference point for all decisions about IS/IT investments. Senior executives should not only articulate the vision but also need to take the steps necessary for ensuring that the vision is diffused throughout the organization. Managers should also ensure that business and IT are dynamically aligned at both the strategy and execution levels (Grant,

2003). In order to achieve this both business and IT must form effective collaborative partnerships at all levels. Managers must be willing to bring about the complex organizational changes necessary for facilitating the appropriate deployment and effective use of the systems and the information they produce.

In order for organizations to derive significant value from investment in information Technology (IT), managers have to ensure a clear link between business goals and the IS/IT strategies that support them. Literature reveals a high percentage of failure on the implementation of information systems. Lack of user participation on the development process is one of the factors that may cause a system to fail. Early involvement of users on the on the IS development process will allow to understand the thinking behind the strategic IS plan and will contribute to reduce resistance to the changes that a new information system would bring to the organization.

User participation is a generally desirable condition for successful project outcomes, but its mere involvement is not a “magic bullet” technique that is able to overcome the high failure rate. It requires to be properly managed to ensure that there will be an effective communication between users and software developers to identify the system requirements.

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