STRATEGIC ALIGNMENT: A PRACTITIONER'S PERSPECTIVE

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Abstract

Aligning information systems with organizational processes, goals and strategies is becoming increasingly important. Prior research has identified two dimensions of strategic alignment – the social and intellectual. The former focuses primarily on the people involved in achieving alignment, whilst the latter is more likely to be associated with the investigation of plans and planning methodologies. Until recently most research has concentrated on the intellectual dimension however the importance of the social dimension is being increasingly recognized. In most instances research is conducted on these two dimensions independently without consideration of the affect on the other.

The research presented here, involving the creation of a causal-loop diagram by six senior IS/IT managers, presents a systemic view of the development of alignment within a typical organization and emphasizes the relationship between the social and intellectual dimensions. It indicates that practitioners understand that a high level of connection between IS/IT and business planning processes may be dependent on the level of integration between the IS/IT group and other sections of the organization. However, it appears that the culture of many organizations is impeding the development of this integration.

Keywords: strategic alignment, strategy development, causal-loop diagram

1 INTRODUCTION

The importance of aligning the objectives and strategies of the information systems/technology (IS/IT) group within an organization and those of the organization have been recognized for some time (Chan, 2002, Chan and Huff, 1993, Henderson, 1990, Henderson, Venkatraman and Oldach, 1996, Kearns and Lederer, 2000, Lederer and Mendelow, 1986, Luftman, 1996, Reich and Benbasat, 2000) and is usually referred to as strategic alignment. The early research into strategic alignment tended to be theoretical in nature (Henderson and Venkatraman, 1990) providing the platform on which later work was developed. Based upon these early developments a number of dimensions of strategic alignment have emerged.

The social dimension of strategic alignment has been defined as "the state in which business and IT executives within an organizational unit understand and are committed to the business and IT mission, objectives, and plans" (Reich and Benbasat, 2000, p. 82). The intellectual dimension of strategic alignment is defined as "the state in which a high-quality set of interrelated IT and business plans exist" (Reich and Benbasat, 2000, p. 82). Put simply, research into the social dimension tends to "... focus on the people involved in the creation of alignment" (Reich and Benbasat, 1996) whilst the

intellectual dimension of alignment tends to "... concentrate on the content of plans and planning methodologies".

In this paper we will present findings from the first stage of a larger research project on IS/business alignment, where the processes giving rise to alignment are explored from the practitioners viewpoint. In doing this we seek to explore two main questions:

- Do IS/IT practitioners identify the same strategic alignment issues as those discussed within the literature on the topic?
- Do IS/IT practitioners attempt to achieve strategic alignment through the same avenues recommended in the literature?

The approach adopted utilizes the construction of causal-loop diagrams (Capra, 1996, Sterman, 2000) as a technique for both elucidating and illustrating the relationship between the different dimensions of alignment. This is based upon the perceptions of IS/IT managers from the Australian branches of large multi-national organizations. The model produced through this process dealt with a broad range of alignment issues, including:

- competitive advantage,
- effective communication between departments and individual personnel,
- the effect of IS/IT credibility and trust,
- the development of soft skills, and
- the involvement of top management in the process of alignment.

However, only those aspects relating to the two questions above will be dealt with in this paper.

The next section of the paper will describe the research methodology used, including the rationale for using causal loop diagrams. This is followed by the results gained through the modelling sessions and a discussion of their correlation with existing research on strategic alignment.

2 RESEARCH METHOD

The research described here used the focus group method for collecting data (Morgan, 1997). The selection of participants was purposive rather than forming a representative sample (Morgan, 1997). The session was recorded and then transcribed. Content analysis (Stewart and Shamdasani, 1990) was conducted utilizing grounded theory as the methodology (Strauss and Corbin, 1990). Further, the enquiry reflected a constructivist epistemology (Crotty, 1998).

Unlike most focus group research, the participants were then invited to develop a causal-loop diagram (Capra, 1996, Sterman, 2000) of the issues they had been discussing regarding alignment. This invitation subsequently led to three 2 hours sessions being conducted to develop the diagram.

Causal-loop diagrams have been used within the systems thinking arena, and especially within the system dynamics discipline, for some time. They are particularly good for:

- Quickly capturing your hypotheses about the causes of dynamics
- Eliciting and capturing the mental models of individuals or teams, and
- Communicating the important feedback loops you believe are responsible for a problem (Sterman, 2000).

They have often been used in the system dynamics discipline as an exploratory tool for complex, or messy, problems (Sterman, 2000, Vennix, 1996). Their role in this research was as a vehicle to illustrate the various relationships between the intellectual and social dimensions of alignment as understood by the participants. It is important to note that we approached the use of CLDs in this paper from a constructivist perspective. As such we do not assume that the CLDs produced represent an objective statement about the world but more closely "...our own constructions of the people's constructions of what they and their compatriots [were] up to (Geertz, 1973,9). This distinction is important as many previous uses of the technique have assumed more objectivist outcomes.

All participants were in positions within their organizations where they were attempting to implement mission statements and objectives, not form them. Their views, therefore, were drawn from the implementation of plans and alignment strategies, if they existed, rather than their development. The emergent model reflects this view.

The participants of the modelling sessions were senior, but not top, IS/IT managers within the Australian branches of multi-national organizations. Three of the participants had always worked within the IS/IT field whilst the remaining three had previous careers in general management but had transferred to their current IS/IT positions.

Participants were asked to develop a generic causal-loop diagram indicating how, in their experience, IS/business alignment could be achieved in an average business. The model was to include both the key enablers and inhibitors of IS/business alignments that the participants considered were most important. At the same time as the participants developed the model, they were encouraged to debate the different cause/effect pairs they considered important and the polarity of the causal loops connecting them. The results of this process are described in the next section.

3 RESULTS AND DISCUSSION

The first iteration, depicted in Figure 1 consisted of a single negative feedback loop.

The arrows connect cause/effect pairs and identify the direction of the cause and effect. The positive (+) or negative (-) symbols at the arrow head indicate the polarity of the cause and effect. A positive polarity indicates that any change in the cause will create a movement in the same direction in the effect beyond what it would otherwise have been (Sterman, 2000). For example in Figure 1, an increase in the *Ability to deliver* will cause an increase in *Successful projects* beyond the level it otherwise would have been. Similarly, a decrease in *Ability to deliver* will cause a corresponding decrease in *Successful projects* below what it would have been.

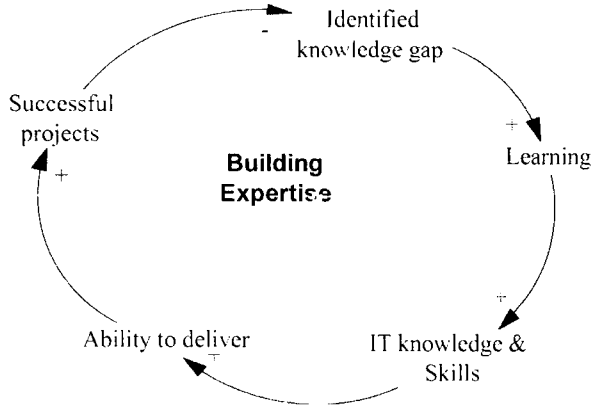

Figure 1. Causal-loop diagram consisting of a single negative feedback loop

A negative symbol indicates that the effect will move in the opposite direction to the cause. A decrease in *Successful projects* will cause an increase in *Knowledge gap*, beyond what it would have been, as participants attempt to find out why their project was unsuccessful. The participants in this research also believe that *Successful projects* result in little critical reflection and therefore the *Identified knowledge gap* will decrease, resulting in a decrease in *Learning* and a relative decrease in *IS/IT knowledge and skills*. This, then, results in a reduced *Ability to deliver* completing the loop. Although this loop is a simple representation, the participants believed that it captured their experience of IS/IT performance and they did not wish to elaborate further.

Figure 1 represents a negative feedback, or balancing, loop. A feature of these loops is that they are stable, always attempting to return to equilibrium. The feedback mechanism will mean that a change in any variable will, after the effects are traced through the loop, cause that variable to then move in the opposite direction so cancelling its initial movement. The overall effect is that variables will tend to oscillate within a given range of values. Figure 1, taken in isolation, indicates that any quantum change in the performance of an IS/IT group is likely to be difficult.

It is also possible to have positive feedback loops. These are highly unstable. A change in any variable will cause changes in all other variables with the feedback reinforcing the change in the initial variable. They are known colloquially as "virtuous" or "vicious" cycles. A simple way to identify positive or negative feedback loops is to sum the number of negative connections within a loop. A positive sum indicates a positive feedback loop, whilst a negative sum indicates a negative feedback loop.

The complete model is shown at Figure 2 and is now discussed. Note that the loop just discussed has been highlighted in Figure 2.

We will consider the area of the model to the right of *IS/IT credibility* first. As noted previously the variables *Ability to deliver, Successful projects* and *Failures* will tend to oscillate within a given range. As these variables directly impact *IS/IT credibility,* this too, will tend to oscillate within a given range. The logic of this area of the model is that as *Ability to deliver* improves so *IS/IT credibility* will improve leading to an increase in *Requests for new projects* and, therefore, a decrease in the *Ability to deliver.* This assumes no additional resources are made available to the IS/IT department. Although simplistic this section captured the intent of the participants and they did not wish to elaborate.

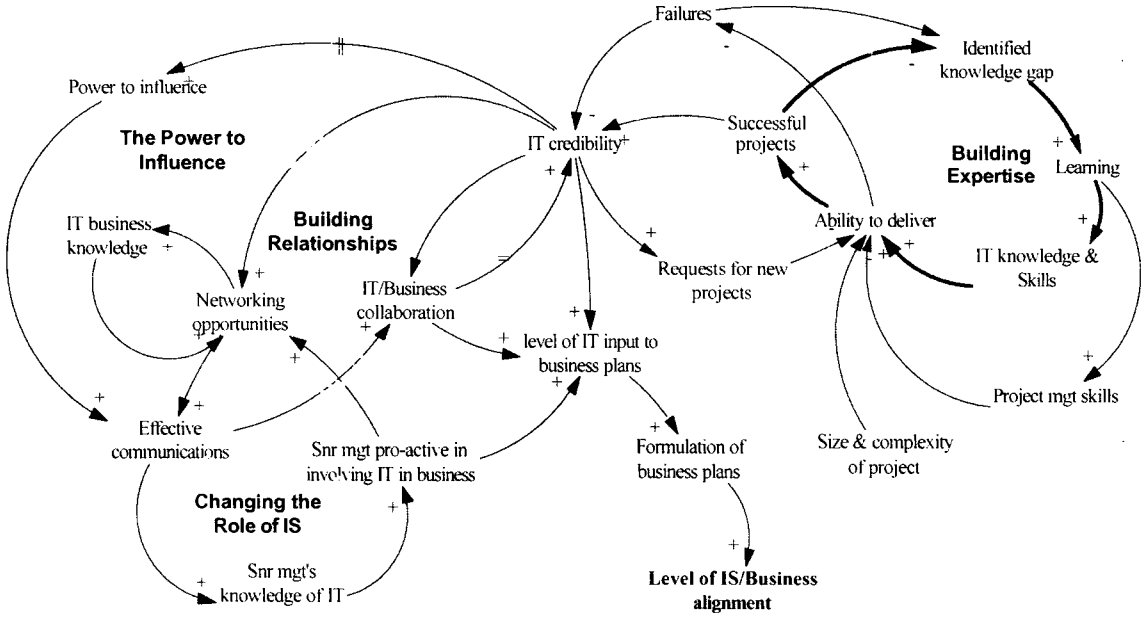

Figure 2. Causal-Loop Diagram of IS/Business Alignment

The participants did, however, indicate that they spent most of their working lives in this section of the model, attempting to improve IS/IT performance and, therefore, *IS/IT credibility*. This conforms with earlier research that indicates most IS/IT personnel believe that their credibility is derived from their technical knowledge and ability to deliver (Bashien and Markus, 1997). This model may help to explain why this is not a particularly effective tactic to gain credibility, as it indicates that this variable too will tend to oscillate within a relatively narrow band of possible values

Earlier research has indicated that mutual trust and mutual influence are antecedents to shared domain knowledge, or cross-functional shared knowledge (Nelson and Cooprider, 1996), and that this in turn, positively affects IS/IT performance (Nelson and Cooprider, 1996). The area of the model in Figure 2 to the left of IS/IT credibility indicates that these practitioners have a general understanding of this construct, but not a detailed knowledge of how it works. In their worldview, an improvement in their credibility improves their *Power to influence* and so creates *Effective communications*. This in turn improves *IS/IT/Business collaboration*, where IS/IT and the business work together to improve the business. This is analogous to Nelson and Cooprider's IT performance. However, this construct ignores mutual trust which is a prerequisite to shared domain knowledge (Nelson and Cooprider, 1996). When questioned about this the participants indicated emphatically that trust was an integral part of *IS/IT credibility*. Although implicitly recognising the importance of mutual trust, the participants did not give it the prominence that research indicates it should be given.

This general section of the model also indicates that the participants have a general understanding that communications, shared domain knowledge and collaboration all affect IS/IT credibility. As the participants indicated that trust was an integral part of IS/IT credibility it indicates that they understand that communications, domain knowledge and collaboration all affect their general trustworthiness. It is these attributes that managers use to evaluate the credibility of IS/IT personnel, not their technical knowledge or ability to deliver (Bashien and Markus, 1997). Although these practitioners implicitly understood the importance of the loops indicated in the left hand side of the model they indicated that they rarely addressed these issues at work. This has further implications.

Again, the model indicates that the participants implicitly understood the connections between *IS/IT credibility*, *Effective communications*, *domain knowledge* and fully integrated strategic IS/IT/business planning (Teo and Ang, 1999). It has also been shown that shared domain knowledge, IS/IT implementation success, communication between IS/IT and business executives, connections between IS/IT and business planning processes and long term business strategies all affect strategic alignment. However, only the first and last of these affect long term alignment (Reich and Benbasat, 2000). The model in Figure 2 indicates that practitioners understand this at a conceptual level.

A major surprise for the facilitators was that the only input to *Level of IS/Business alignment* is *Formulation of business plans*. This construct is not correct from a causal-loop modelling perspective but the participants wished to include the latter variable to emphasize their view that alignment does not exist until fully integrated planning has occurred. This view is at odds with some of the literature, but is supported by other research. A significant amount of literature exists using the level of integration of IS/IT and business plans to measure the level of alignment (King and Teo, 2000, Teo and Ang, 1999, Teo and King, 1996, Teo and King, 1997). This implies that the sophistication, or level, of IS/IT planning is a surrogate measure for the level of IS/business alignment. However, writers such as Chan (2002) and Reich and Benbasat (2000) indicate that alignment can be achieved via other, more social, means. The current construct indicates that the full integration of business and IS/IT plans, whether these be formal or informal, within a single planning process is a major component of alignment. This supports earlier research that indicates that long-term business strategies are one of only two prerequisites to long-term alignment. The other was shared domain knowledge (Reich and Benbasat, 2000). The only added proviso is that the intent of these plans is then enacted at all levels of the organization, an assumption that is difficult to defend in practice.

The current model is also supported in intent if not detail by earlier work that found, contrary to popular belief, there was a strong link between IS/IT performance and IS/IT involvement in the development of business plans (Sabherwal, 1999).

It should also be noted that many of the critical success factors for the integration of IS/IT and business plans (Teo and Ang, 1999) are included, implicitly or explicitly within the causal-loop diagram.

It appears, then, that practitioners have an implicit understanding of the connections between all these variables even if they do not have a detailed understanding of the construction. So why, in their own

words, do they consistently ignore operating in that part of the system represented in the left side of Figure 2? This is important as research to date indicates that it is this part of the system that has the most effect on strategic alignment. The answer lies partly in a conundrum that faced the participants involved in developing the model.

Throughout each modelling session the participants wished to include another variable but could not identify where it resided within the model. That variable was "Culture" and they resolved their problem by having it written in large letters on the whiteboard being used to develop the model so that it took prime position. According to these practitioners leadership style and culture are the prime factors that influence the behaviour of the left hand side of the system shown in Figure 2. The organizations that they worked in, the Australian business units of multi-national corporations had a culture that did not encourage communication or collaboration between the business and IS/IT functions, nor between the business units themselves. In fact the organizational cultures encouraged competition and conflict between departments and personnel rather than collaboration.

For example participants related the following:

> So there's a bunker mentality – New South Wales branch against Victoria branch. I've come across this a lot in the last few months, and I'm just thinking it makes no sense. So, as far as IT and business alignment goes one of the main inhibitors may well be divisions within the business as well, not just IT.
>
> ... I believe the current philosophy in our group is....very conflict oriented. There's a whole history of things that have gone sour and people...many (IT) managers are extremely defensive.

The lack of communication means that the development of trust is severely impeded (Campbell, 2003, Creed and Miles, 1996). This, then, affects the development of shared domain knowledge (Nelson and Cooprider, 1996) which, in turn, affects long term strategic alignment (Reich and Benbasat, 2000). The construct of the model in Figure 2 indicates that it also affects the development of integrated IS/Business plans and strategies.

An associated factor that influences culture is the structure of the organization. The organizations in which the participants worked tended to separate the IS/IT function from the remainder of the business. This allowed the development of sub-cultures and varying "norms" between IS/IT and the business. The resulting differences between groups then affects IS/IT credibility (Bashien and Markus, 1997) and then the development of trust (Creed and Miles, 1996).

4 CONCLUSION

This paper has reported on the perceptions of IS/ IT managers on strategic alignment between the IS/IT and business functions of organisations. The goal was to explore how closely the perceptions of these managers matched the literature on the topic.

This was achieved through the development of a causal loop model of strategic alignment by the participants over three focus group workshops. It became clear through this process that the sample of IS/IT managers involved in the focus groups held similar perceptions to the literature regarding strategic alignment. However, we found, in regard to the second question on how strategic alignment is achieved, that there was little correlation between the literature and the practices of IS/IT managers.

The dilemma arises when attempting to achieve alignment. Although they believed that strategic alignment generally depends upon communication, collaboration, the development of trust and shared domain knowledge as suggested in the literature, actually achieving these prerequisites is problematic. In many organizations, including those of the participants in this study, activities supporting the development of these prerequisites were either poorly supported or actively discouraged. This was

primarily due to the prevalent culture in many organizations that, in part, promoted competition between departments.

The model presented in Figure 2 indicates that achieving alignment is a system. As researchers we can't afford to study the intellectual dimension of alignment or the social dimension of alignment separately. We need to study the intellectual and social dimensions together. They are inextricably linked in a web of cause and effect.

Management needs to be aware of the effect of culture and structure on alignment and, if they are serious about achieving it, attempt to create a working environment that encourages communication and collaboration.

IS practitioners need to make an effort to develop relationships with their business peers. Research has already indicated the effectiveness of informal structures on strategic alignment

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