

Alignment of Information Systems' projects with business strategy: Evolution of thinking and practice.**Anabel Gutierrez**

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Abstract: Despite numerous efforts to integrate business and IS strategic plans, organisations are not delivering the expected benefits from IS investment. IS alignment research has recognised that IS alignment at strategic level is not sufficient and therefore a continue process of reconciliation between strategy formulation and strategy implementation is required. Strategy implementation is realised through IS projects mainly using a traditional project management approach which again proved to be insufficient. IS projects are significantly impacted by the rapid change of technology, the organisational changes that its use produce and their complexity. Therefore, given the current literature in IS alignment, strategic management and IS project management, this research analyses the management thinking and practices when implementing IS projects. By assessing the level of alignment on five strategic IS projects in a large insurance organisation this study maps the key reasons for high or low alignment with the new principles of mind-set that managers need to cope with complex IS projects. Findings show that low levels of alignment can be overcome to produce a successful project when managers evolve their mind-set approach to IS projects.

Keywords: Project management; IS Alignment; Strategic alignment; Strategic management.

Note: This working paper is based upon the successful presentation of the subject at a recent conference and is under further development for a future journal paper. Any advice and comments from colleagues is warmly welcomed.

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1. Introduction

IS alignment has persisted as top concern for IT managers for almost 30 years, and first or second most important in the last 8 years (Luftman and Ben-Zvi, 2010). Despite all the contribution made to the field from different perspectives IS alignment continues to be difficult to exercise. Chan and Reich (2007) challenge academics and practitioners to build up on what has been learned and go beyond the recurrent research questions. On the other hand, Sauer and Reich (2009) challenge the traditional IT project management to incorporate other dimensions than the traditional objective of time, quality and budget and propose nine principles for the new mindset. Whilst it is clear there is no silver bullet to achieve alignment, integrating what has been learned could lead to a better understanding on how to apply the knowledge that has been produced. Most of IS alignment researchers agree that organisational culture and the mindset of managers has an important influence as alignment need to be culturally supported (Chan and Reich, 2007; Sauer and Reich, 2009; Luftman and Ben-Zvi, 2010). This paper integrates IS alignment, strategic management and project management with focus on IS projects alignment. The structure of the paper is organised as follows. Section 2 outlines the main argument behind IS project alignment. Next, the intertwining relationship between strategic management and strategic information systems planning is presented as a context for the new role of IT project management. In Section 4, the research strategy is explained together with the case study characteristics. Results and discussion of each project analysed are presented in Section 5. Finally, conclusions are outlined.

2. Information Systems Alignment

Defining alignment is a challenge not only for the many perspectives that have emerged but also for the multiple definitions that have been identified including integration (Weill and Broadbent, 1988); fit (Porter, 1996); strategic alignment (Henderson and Venkatraman, 1993); harmony (Luftman, 1996); bridge (Ciborra, 1997); fusion (Smaczny, 2001); business-IT alignment (Luftman, 2007a); IT alignment (Chan, 2007) and IS alignment (Chan et al., 2006; Benbya and McKelvey, 2006). All these definitions, though, focus on how to improve organisational capabilities through technology with subtle differences.

Broadbent and Weill (1993) define strategic alignment as the extent to which business strategies are enabled, supported and stimulated by information strategies. Similarly, Reich and Benbasat (1996) define alignment as the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives and plans. Luftman (2000) argues that achieving alignment is an evolutionary process, which requires strong support from senior management, good working relationships, strong leadership, appropriate prioritisation, trust, and effective communication, as well as a thorough understanding of the business and technical environments. Hirschheim and Sabherwal (2001) define alignment as the extent to which the IS function's strategies and structures support, and are supported by the business' strategies and structures. Most definitions emphasise the alignment dichotomy explained by Kearns and Lederer (2000), who argue that the IS plan should be aligned to the business plan (ISP-BP) and the business plan should be aligned to the IS plan (BP-ISP). Both perspectives of alignment increase the organisational understanding of IT that help to prioritise IS projects. Furthermore, it signifies better top manager understanding and commitment which are considered enablers of alignment (Luftman et al., 1999). Whilst some scholars regard alignment as an event others assume it is a continuous process. The following section describes the main alignment perspectives adopted in order to identify the key elements which define alignment.

2.1 Static and Dynamic Nature of Alignment

Despite efforts to align business strategy with IS strategy, alignment has proved difficult to achieve and the existence of integrated IS plans do not ensure alignment (Peppard et al., 2000; Sabherwal and Chan, 2001; Benbya and McKelvey, 2006). One reason for these difficulties is that alignment is not a 'state' that concludes with strategic planning but a journey with unpredictable challenges (Benbya and McKelvey, 2006). Additionally, the strategic process itself adds complexity to alignment due to the

fact that most of the models assume the existence of formal strategic processes and written plans. For example Ciborra (1994) concluded that the use of IS for competitive advantage is due more to serendipity than the result of formal planning. Orlikowski (1996) adopts a perspective of improvisation, this implies the planning process is the starting point and those plans will be continually adapted to respond to the realities of the changing environment that organisations face. Grant (2003) also characterises strategic planning as the reconciliation of top-down rational designs with bottom-up emergent processes. These arguments suggest that integration of business and IS plans is important but not enough and alignment should be pursued at all levels of the organisation (Benbya and McKelvey, 2006; Chan, 2007).

2.2 Intellectual and Social Dimensions of Alignment

The previous section highlights the relevance of having strategic plans although their existence does not ensure alignment. Moreover, Lederer and Mendelow (1988) show that only a small number of organisations gained a competitive advantage even though they aligned their information system plan (ISP) to the business plan. Reich and Benbasat (2000) propose that it is important to consider two dimensions of alignment namely social and intellectual dimensions. The intellectual dimension refers to the content of plans and planning methodologies that were the focus of early IS alignment studies. The social dimension focuses on the people involved in the creation of alignment. Although Reich and Benbasat recognised both dimensions are important and necessary to achieve high levels of alignment they emphasise the social dimension. Reich and Benbasat define alignment as the mutual understanding and commitment that IS and business executives have regarding each other mission, objectives and plans. Reich and Benbasat conclude that the most important predictor of is communication between business and IT executives, which is influenced by the shared domain knowledge and IT implementation success. Additionally, they also explain that line managers who have knowledge in both core business and information systems, are the catalysts in bringing innovation. In IT planning practices, they concluded that having a connection event for both business and IS together with a regular re-evaluation of priorities are influential in ensuring high levels of short-term alignment.

2.3 Structural Dimension of Alignment

Chan and Reich (2007) describe the structural dimension of alignment as the influence produced by the location of IT decision-making, reporting relationships, IS organisational structure, IS employee development and organisational culture. IS alignment is more likely to be considered as an enabler of business strategy when there are fewer levels between senior management and IS management (Pyburn, 1983; Luftman 2000). Most common arrangements of IS organisational structure have also been analysed: centralised, decentralised and federated. Luftman and Kempaiah (2007a) found that organisations with a federated structure achieve higher levels of alignment. However, the study by Sabherwal and Chan (2001) suggests that resources are better spent on improving the informal organisation than on aligning formal structures due to the high impact of informal relationships. Finally, the organisational culture and the mind-set of managers have an important influence as alignment need to be culturally supported (Chan and Reich, 2007; Sauer and Reich, 2009) and IS personnel need business skills to contribute to the business strategy (CIO insight Staff, 2004; Luftman and Kempaiah, 2007b; Sauer and Reich, 2009). In summary, all these structures influence the relationships between business and IS (social dimension) as well as the strategic plans (intellectual dimension).

3. Strategic Management

In an organisation the corporate strategy defines the businesses with which a company will compete and define the objectives, purposes, goals, plans for achieving such aims (De Wit and Meyer, 2004, p. 71). Corporate strategy is inseparable from the structure, behaviour and culture of the company in which it takes place. This aspect has been considered in the structural dimension of alignment. De Wit and Meyer (2004, p. 73) identify two main aspects of the corporate strategy process: formulation and implementation. The strategy formulation includes identifying opportunities and

threats in the company's environment. The implementation of strategy comprises management sub activities to allocate resources, monitoring, control and learning systems as well as incentives and staffing systems (De Wit and Meyer, 2004, p. 127). These sub activities allow the execution of specific plans, projects and business operations. Strategic process management is conducted by managers at different levels of decision-making. First senior managers formulate the corporate strategy to be used by the rest of the organisation. Corporate strategy is then refined by tactical managers in charge of the strategy implementation. This hierarchical strategy organisation then produces more detailed plans and specific projects to support the corporate strategy. The top-down approach only serves to illustrate the components involved in the strategic process although in practice the process involves complex interaction between all levels in a changing environment (De Wit and Meyer, 2004, p. 128). This complexity of the strategic process is then augmented by the need to integrate the IS strategy to the corporate strategy (Benbya and McKelvey, 2006) as explained in the following section.

3.1 Strategic Information Systems Planning (SISP)

Several approaches have been used to integrate business strategy and information technology (IT) strategy. Most of these approaches are planning oriented (Smaczny, 2001) and assume structured environments under full control (Ciborra 1997, Maes 1999). These approaches contrast with the real environment organisations face where uncertainty, flexibility and changeability prevail (Peppard and Ward 2004). Even if some organisations do not have a formal planning process, they still need to be able to develop their business direction (Reich and Benbasat 2000). This direction should be clear enough to allow organisations to focus on those IS projects that add business value.

SISP involves a proactive search for competitive advantage and value creation (Grover and Segars, 2004) and includes the management of IT department activities, the technological infrastructure and technological scanning (Croteau and Bergeron, 2001). Grover and Segar (2004) consider that the SISP process evolves in three stages. In the preliminary stage top management allows SISP but provides limited information and there are no formal planning roles, therefore alignment is limited as the business goals are not well understood. During the evolving stage top managers start involving IS in the planning process. Finally, the mature stage is reflected by a more integrated planning that promotes a two-way flow of information and involvement. In order to be more effective, SISP requires rational elements of comprehensiveness and formalisation (structured methods, written guidelines, extensive budgeting, etc) whilst at the same time requires adaptable elements of participation and consistency across hierarchical levels and functions. The balance between rationality and adaptability varies depending on the organisation's context, industry and competitive environment. Netkirk and Lederer (2006) analysed the effectiveness of SISP under environmental uncertainty in the context of five IS planning phases: strategic awareness, situation analysis, strategy conception, strategy formulation, and strategy implementation. After measuring SISP success Netkirk and Lederer (2006) concluded that the strategy implementation phase had greater impact on SISP success regardless the environment, therefore efforts should be on improved action plans, change management, follow-up and control in order to improve SISP effectiveness. Similarly, Jenkin and Chan (2010) conclude the key alignment processes are found in executing the projects rather than during the planning process. The SISP process helps to identify IS strategies and IS projects from the requirements of each business unit and creates links between the strategic and the operational levels (Peak et al., 2005). Therefore, the IS projects act not only as the medium to implement the strategies but also as connections between strategic and operational levels that need constant review and adapt to maintain alignment with the corporate strategy.

3.2 Project Management

Whilst organisational projects represent the implementation of business strategies; IS projects represent the implementation of IS strategy and should be aligned with business strategies (Srivannaboon and Milosevic, 2006). However, the low percentage of successful IS projects suggests, among other reasons, a lack of alignment during the implementation stage (Peppard et al., 2000; Taylor, 2000; Hartman and Ashrafi, 2004). Research in the IT project management discipline also indicates a need to reduce the gap between project delivery and corporate strategy (Lycett, et al.,

2004). It is recognised that although IS projects share many characteristics with organisational projects, IS projects are significantly impacted by the rapid change of technology, the organisational changes that its use produce and their complexity (Johnstone et al, 2006; Sauer and Reich, 2009). Due to the scope and complexity of IS projects, management theory used for single projects should evolve to enable flexibility in a changing business environment. In addition, Srivannaboon (2006) suggests that alignment should be monitored during any project execution in order to provide feedback to management and allow for business strategy modifications. Moreover, Jenkin and Chan (2010) report that evolution and learning develops as the project execution drives the need for change and adaptation that is critical to keep the projects aligned with business strategy. Kearns and Sabherwal (2006) also draw attention to the relevance of incorporating IS project aspects into IS alignment by analysing how the planning and implementation of IS projects mediates the relationship between business-IT and the business effects of IT. Their results suggest that IS alignment enables improved IS project planning that increase the business effects of IT and therefore the relevance of IS project management for IS alignment. Consistently, Jenkin and Chan (2010) report key alignment processes were found during the projects execution rather than in the planning processes. From a practitioner's perspective collaboration between business and IS represents a prerequisite to achieve alignment and this collaboration must occur not only at strategic level but during the implementation of IS projects (Campbell et al., 2005).

From the outlined arguments, it is clear that alignment need to be analysed in a broader context from strategy formulation to strategy implementation having the IS project as unit of analysis to better understand the key alignment processes. However, IS projects have evolved and traditional project management is not sufficient to produce business value. A study conducted by Sauer and Reich (2009) proposed multiple process views of IT projects that expands the original framework to rethink the project management context that recognises the complexity of projects as shown in Figure 1.

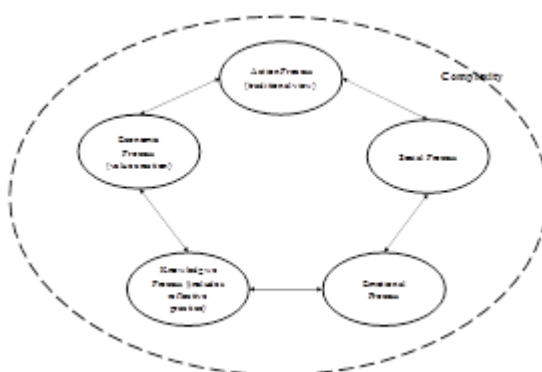


Figure 1. Multiple process views of IT projects (Source: Sauer and Reich, 2009)

This framework includes more processes to the traditional project management view called social process, economic process (value creation), the knowledge process and the emotional process. The social process moves the project perspective to include the influence of the group structure given that projects are socially constructed. The value creation changes the focus on time, cost and quality objective to the achievement of organisational benefits (value creation). The knowledge process includes formal and informal knowledge relating to the project organisation, politics, business context, technology and management which are all particularly relevant for the IS context. The emotional process was included to recognise the intense and stressful impact of projects that influence feelings such as trust.

Within this broader conceptualisation of project management Sauer and Reich (2009) conducted an analysis of the evolution of thinking and practice in IT project management. For the IT project context this framework implies a change of project managers' role from supporters for the main actors to become more influential and therefore being able to actively interact with strategic and tactical managers (Sauer and Reich, 2009). As part of their conclusions, Sauer and Reich (2009)

identified the nine principles of thought that characterise the new mindset required by IS Project Managers working with complex projects as summarise in Table I.

Principle	Description
Focus on ultimate value	Aligning the project with company strategy. Project managers use language of benefits and value, get involved earlier so as to understand the business need, stay on beyond implementation and adapt as necessary to achieve value
Deep personal identification with project goals	Belief that value-oriented project goals are appropriate with consequential enhanced level of personal ownership and commitment
Investment in trust	Recognition that relationships of trust are essential with all stakeholders. Involves sustained relationship development and management
Devolved, collective responsibility	Pushing decision-making to the individual/s who are best positioned/equipped to make informed decisions. Involving multiple members of the team in problem-solving and decision making.
Willingness to continually adapt	Explicit recognition that when the business changes, the project must adapt. Devises new techniques to support continuing adaptation
People development	Focus on developing individuals' competencies – specifically team members and clients- both for current projects and as an investment for the future
Learning orientation	Belief that we learn as we go. Willingness to invest in developing new knowledge for this project and beyond
Innovation and creativity	Development of home-grown management practices. Willingness to challenge the conventional wisdom.
Proactive view	Willingness to take initiatives in order to advance the project including breaking the rules where necessary

Table I. Principles of the new mindset (Source: Sauer and Reich, 2009)

The above discussion call for an integration of approaches to define and measure IS alignment from strategy formulation to strategy implementation. This paper aims to bring together well-known frameworks to better understand how to align IS projects with business strategy. Consequently, this paper assumes the definition of alignment given by Benbya and McKelvey (2006):

“IS alignment is a continuous coevolutionary process that reconciles top-down ‘rational designs’ and bottom-up ‘emergent processes’ of consciously and coherently interrelating all components of Business/IS relationships at three levels of analysis (strategic, operational and individual) in order to contribute to an organisation’s performance over time”. (p. 287).

Additionally, the validated assessment instrument (SAM instrument) developed by Sledgianowski et al. (2006) to assess the maturity levels of IS alignment will be used and adapted to assess the IS projects alignment (Gutierrez, 2009). Finally, the nine principles of new mindset for IS projects proposed by Sauer and Reich (2009) will be mapped with the assessment results to identify the impact of management thinking and practices on projects IS alignment.

4. Research Strategy

The research strategy focused on how to collect data that captures the views at different levels that are feasible to compare in order to find out the interrelations between the strategy formulation and the strategy implementation as well as the impact on strategic IT projects. A Case study allows capturing the knowledge of practitioners in their natural environment (Cavaye, 1996; Walsham, 2002; Benbasat et al., 2002) and was considered the most appropriate method of answering 'how' and 'why' questions which need to be traced over time and context rather than by frequency of incidence (Benbasat et al., 2002). Ideally, more than one source of information is needed to support

case research studies (Benbasat et al., 2002). From the several sources identified by Yin (2003) for the testing phase the following were selected:

- Archival records. Written information about the organisation's profile i.e. organisational charts, mission, business and IT objectives.
- Documentation. Project documentation for the IT projects involved in the case study.
- Interviews. Semi-structured interviews were conducted with key participants.
- Direct observation. At each meeting notes were taken on details, actions and subtleties within the field environment.
- Physical artefacts. A validated instrument was used to assess the maturity level of alignment at strategic level and adapted to assess the level of alignment of strategic IT projects selected from the views of tactical and operational managers.

The case study was conducted over a period of eight months. During this time documentation was reviewed prior to the face-to-face interviews and questionnaire application. The interviews were all recorded (28 participants from strategic, tactical and operational views) and notes were added about the field environment. The interviews were all transcribed and QSR NVivo 8 software was used to analyse the content. After the data was collected, the different sources of information were processed to calculate the level of maturity of the organisation at strategic, tactical and operational levels. Documentation and interview analysis provide in-depth understanding to provide the organisation with a summary of root causes for high or low levels of alignment as a roadmap for potential areas of improvement. Finally, the key issues identified for each project were mapped with the new principles of mindset described in Table I to identify the relationship between the levels of alignments and the managers' mindset.

4.1 Case Study: UK COMPANY

This study was conducted in a large company in the insurance and finance sector (UK COMPANY). UK COMPANY is a wholly owned subsidiary that operates in the UK and Ireland, and occupies a leading position in its main markets: life insurance, health insurance and general insurance. With more than 13,000 employees, UK COMPANY has been a well-established organisation for 200+ years. The organisation has recently started efforts to improve IS alignment and agreed to participate in the study involving two business units (A and B). Five IT projects defined as strategic for the organisation were selected within the business units as shown in Figure 2.

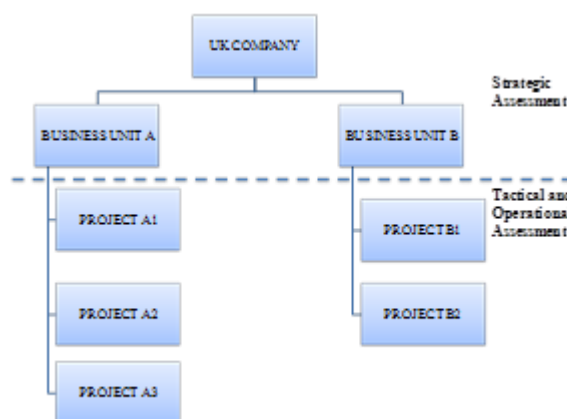


Figure 2. Study scope: Business units and related projects

Twenty seven face-to-face questionnaires were applied and semi-structured interviews were conducted with the same participants to analyse five strategic IT projects. One senior manager was interviewed at the end of the study to discuss the research outcomes. A total of 28 participants were involved in the case study. There is a balanced representation of business and IS participants who were classified for this study according their positions as follows:

- Strategic: The strategic level category includes participants who are closest to the corporate strategy and have director/head positions at corporate or business unit level (4 participants).
- Tactical: Participants in charge of the strategy implementation with director/head positions within the sub-business unit were selected for this category (8 participants).
- Operational: This category included managers who are closest to the detailed projects (16 participants). Their positions vary from project managers, IT managers, senior IT developer, product manager, customer service manager, project sponsor.

5. Results and Discussion

The overall alignment maturity obtained for UK COMPANY is 3.3 as shown in Table 2. This result is slightly higher than the average maturity alignment obtained by other organisations in the insurance industry (3.15) and finance industry (2.9) where similar assessment has been applied (Luftman and Kampaiah, 2007a).

	Strategic Assessment	Tactical and Operational Assessment					Overall IS alignment maturity
	Enterprise	Business Unit A			Business Unit B		
		Project A1	Project A2	Project A3	Project B1	Project B2	
Factors affecting alignment		(3 participants)	(8 participants)	(4 participants)	(4 participants)	(4 participants)	
COMMUNICATION	2.7	3.9	3.2	3.3	2.9	2.8	3.0
IT VALUE	2.5	3.8	3.4	3.1	3.0	2.7	2.9
IT GOVERNANCE	3.8	4.1	3.7	3.0	3.2	3.5	3.9
PARTNERSHIP	2.7	4.2	3.5	3.0	3.7	3.0	3.3
SCOPE AND ARCHITECTURE	2.7	3.4	3.3	3.5	3.2	2.5	3.2
HUMAN RESOURCES SKILLS	2.6	3.6	3.3	3.1	2.9	2.7	2.9
Overall business-IT alignment maturity:	2.9	3.8	3.4	3.2	3.1	3.0	3.2

Table 2. IS alignment maturity per assessment and overall

Using these results as reference for levels of IS alignment, the next section explain the results of the qualitative analysis for each project.

5.1 Projects Analysis

As explained in Section 4.1 the case study involved two business units (A and B). Three projects belong to Business Unit A, namely Project A1, A2 and A3 respectively. Two projects belong to Business Unit B, namely Project B1 and Project B2. The description of each project is provided below together with the main issues identified.

Project A1

Project A1 is a financial business proposition that includes a technological solution as one of its key elements. The project is at an early stage and eight participants completed the alignment maturity questionnaire. This project achieves the highest maturity alignment within UK COMPANY.

The elements of success seen as important by the participants were:

- Business managers have a higher level of IT environment understanding than in other projects.
- The business case represents a balanced metric that brings together business and IS.
- Business and IS work together to develop the business case as a team enhancing understanding and partnership.
- Top managers have a clear intention to promote partnership between all the participants in the projects, including people from IS central function and third parties.

- There is a clear message and actions to “remove the supplier-customer relationship between the IT and business function”.
- The organisational structure was designed to bring business and IS together.
- Co-allocation of business and IS in the same physical areas allows better integration and interaction.

On this project the principles of focus on ultimate value and deep personal identification with project goals was very evident as all the participants were clear about the business objectives in both business and IS views.

Business view:

“Another thing that makes a difference is that we don’t typically use the normal life cycle process for development ... this is different we say this is the market challenge we got the business and IT people to redefine the business, building the proposition so we start to get involved to come up with a solution ...”

IS view:

“The success of this business is based around the business case. The business case is a very much an IT and business related case. We are not actually saying this business has a value and IT makes a part of it. What we are saying is business and IT are one...”

The same management practice, business case, helps also to develop collective responsibility which is a relevant principle on the new mindset due the high complexity of projects requires different expertise to be integrated. Innovation and creativity is inherited by the nature of the project and reinforce by the managers mindset who believe the traditional mindset would not work for their business project. Finally, there is also evidence in this project that managers have a learning orientation through constant knowledge sharing that has been enhanced by co-allocation of business and IS. Consequently, trusts and people development is achieved.

Project A2

Project A2 is quite a technical project that aims to simplify and improve the IT infrastructure for the whole corporation. The project is at an early stage and four participants completed the questionnaire. Overall Project A2 is positioned as the second most mature project, however, huge inconsistencies were found between the participants. Drawing on the interviews the core elements related to the differences are:

- Business perception of IT value varies from cost of doing business to partner with the business that brings value to the firm.
- IS is seen as a service provider due the centralised IT model.
- Merging of two cultures remains an issue (Business Unit A acquisition of other company).
- Complicated IT landscape due the merger.
- Conflicts in coordination with other areas within the business unit.

Despite the fact that this project received the second highest level of IS alignment, the manager mindset do not show clear evidence of using any of the principles under analysis. Furthermore, the complexity of the projects is augmented by mergers, acquisitions and cross functional scope.

The nature of the project demands a high level of investment in trust and collective responsibility in order to be able to align the project with company strategy in a way that all the business units involved are committed to the changes. However, lack of collective responsibility could prevent trust to be developed. This project is an example of good level of management practices in place that allows high levels of IS alignment with low evidence of new mindset among the participants.

Project A3

Project A3 involves a system development for a new financial product. The project was in the final stage and four participants gave their opinions. Despite the adoption of similar mechanisms to those in Project A1 in order to improve the partnership between business and IS, the results show significant differences and conflict between business and IS. From participants' views the following aspects were identified as contributing to the low level of alignment:

- Business managers mainly consider IS as the cost of doing business.
- Business is just starting to get more involved in understanding the IT environment which is critical for decision-making processes.
- IS also recognises they are not perceived as partners.
- Risks and rewards are not shared.
- Conflicts in coordination within the business unit and also with integration at corporate level.
- Business cases are only used as a mechanism to approve the project and control the progress rather than as a means of bringing business and IS together.

For this project, although all the participants recognised the relevance of the project the mindset of the managers did not show evidence of the new mindset principles. Conversely, there was no personal identification with the projects goals or collective responsibility as demonstrated with the following examples:

Business view:

"This is a business lead process and IT involvement in the strategy will be limited ... We get a quote for what we want to build, they build it and we pay them"

IT view:

"From an IT perspective, although we see we contribute to deliver a solution which then provides some benefits to the business we don't actually measure the benefits, that sits with the business ... we provide them with the IT system but we are not actually accountable for measuring it once it's in place. The metrics that we have though are more concerned with our development processes..."

For Project A1, managers have adopted a partnership style with IS and they share the responsibility of delivering the business case benefits. Conversely, for Project A3, the IS function is perceived as a service provider. The original proposal for Project A3 was rejected at the corporate level as they saw it as too complex, too expensive and not strategic. Consequently, different mechanisms were established to promote partnership between business and IS. By the end of the Project A3, when the alignment assessment was conducted, the partnership was still low and the project had been put on hold by corporate level.

Project B1

This project addresses legacy systems problems by developing front-end system to process customers' claims. The project had finished and the system is currently in use. Four participants completed the questionnaire and no significant inconsistency was found among the participants. Through the interviews the following issues were identified:

- Team members had worked for a long time for UK COMPANY and had high personal commitment, reflected as high trust relationships within the project team.
- Tactical managers do not get very involved in IS decisions and few understand the core IT environment.
- Risks and rewards are not shared.
- Despite the high level of governance, each area employs its own metrics.
- Business cases are only used as a mechanism to approve the project and control the progress rather than as a means of bringing business and IS together.

All the participants were clear that this project was part of the corporate strategy and therefore were willing adapt to achieve value:

“A committee with about 12 representatives looks at every project that comes through and looks at the business case, cost of IT, impact for the customers and looks at the benefits to the Sigma scores they have got to produce and to improve customer service and determine whether they want to do the project or not. I think that is something that I believe is not in place in the other business units but it’s been in this business unit (Business Unit B) for some time. That committee links all the projects that IT does with the business strategy”.

Strong personal identification with the projects goals together with proactive attitude by the IT manager help to develop high levels of trust as manifested by a business manager in this project.

“... the IT program manager of this Project (B1) was brilliant, he spent most of his time, especially during the implementation, looking to the people ... so he was so involved and you hardly see any other IT guy that involved in the business ... it makes a big difference”.

Although this project had low levels of IS alignment, the mindset of the managers allowed them to overcome the difficulties they encounter during the implementation. By the time this case study was conducted, the project was finished, in use and evaluated as very successful.

Project B2

This project is a front-end system for the quotation process. The project had been launched and four participants completed the questionnaire. Similar to Project B1, two main areas of concern were limited understanding of IT by business and no clear metrics to measure IT contribution. Drawing from the interviews the key aspects of this project are:

- Partnership developed as the project progressed.
- Risks and rewards are not shared.
- Interaction was complicated due different location of business and IS teams.
- People overcome the location problem as they knew each other from other projects.
- Business cases are only used as a mechanism to approve the project and control the progress rather than as a means of bringing business and IS together

The scale of this project was smaller than the other four projects. Despite there is no formal investment in developing trust, the participants learning orientation helped them to build trust and personal identification with the project:

“... at the beginning of the project I would say there was no relationship with IT, ... because we haven’t worked together before. I think the relationship grew very quickly during the project, the communication is very good. At the end of the project I think we built up a strong relationship with IT”

One of the participants indicated that two members of the team have worked together in other projects, helping to develop trust among the team. Otherwise, they would have encountered problems as they were located in different cities. This project scored the lowest level of alignment, facing serious problems due lack of collective responsibility and clear business and IT separation, not only in organisational structure but physical location. However, the launch of the project was considered successful and they were planning a new project to enhance the system due new business requirements.

The relationship between IS alignment and the principles of new mindset explained for each project is summarised in Table 3. A plus sign represents that most of the participants followed the principle and therefore there is a clear evidence of its relevance for the project. The minus sign represents the opposite case, most of the managers mindset are around the traditional roles inhibiting progress in IS alignment. Empty cells were left when the participants demonstrate high variance in their mindset, and therefore was not clear the positive or negative impact in the overall IS alignment of the project.

The mapping between the principles of new mindset and the levels of IS alignment reveal that organisation should evolve their management practices at the same time that evolve the mindset of their managers. In this case study, IT governance was the stronger factor that triggers the

communication and partnership between business and IT at different organisational levels. Collective responsibility is an important challenge for most of the projects. This case study shows that a management practice such as business case development can have different outcomes in the same organisation depending on the managers' mindset.

Level of IS Alignment	3.8	3.4	3.2	3.1	3.0
Principle of new mindset	Project A1	Project A2	Project A3	Project B1	Project B2
Focus on ultimate value	+	+	-	+	+
Deep personal identification with project goals	+			+	
Investment in trust	+	-	-	+	+
Devolved, collective responsibility	+	-	-	-	-
Willingness to continually adapt					+
People development	+				
Learning orientation	+				+
Innovation and creativity					
Proactive view					

Table 2. IS alignment maturity relationship with managers' mindset principles

The analysis of the data showed that projects at an early stage of implementation obtained higher maturity than finished projects that have had to deal with all the difficulties encountered during project execution. In the early stages the assessment process allowed identification of possible areas of risk. Whereas in completed projects a key element that was identified was the development of trust between participants in the team. This trust relationship allowed them to overcome the limited understanding of IT by business and a lack of collective responsibility. At the earliest stage it is important that participants' mindset is aligned to ensure the team will evolve and overcome difficulties. Of the five projects studied, two (projects A1 and A2) were at an early stage and obtained high levels of IS alignment maturity. However, the magnitude of the project can impact on the levels of consistency between participants' views. The scale of Project A1 was smaller (approximately 150 people) than project A2 that impacted on more than 1000 people. Consequently, there were more variations that need adjustment to avoid a negative impact. On the other hand, three of the projects analysed (projects A3, B1 and B2) had been completed at the time of the assessment, and all of these obtained lower levels of IS alignment maturity. Nevertheless, one of these completed projects (B1) was considered very successful as it had achieved the expected business benefits defined in the business case. A key element that was identified in this successful project was the relationship of trust developed between the core team during the implementation phase and the close interaction and clear connections between the business unit and corporate strategy. Constant interaction with and commitment to the main goal (corporate strategy) allowed the team to overcome the misalignment in some areas. Whilst ownership of the business case improves levels of trust, not sharing rewards at the same level inhibited full commitment and partnership between business and IS.

6. Conclusions

Alignment has been mainly researched through the views of senior managers, and whilst they represent the most informed participants in organisations, the views of managers at tactical and operational level reflect the reality people face in day-to-day implementation of the strategies. Both views need to be understood to reduce the gap between strategy formulation and strategy implementation. Projects where IS was included at the inception of the project in order to understand and contribute to the business case development resulted in higher maturity. The reason for this effect is that participants from both business and IS increase their understanding of each other's environment and develop ownership of the business case goals. Consequently, levels of communication and partnership improve. A key element in this partnership improvement is the relationship of trust required for the project team to deliver business value.

From the above discussion it can be concluded that instead of aiming for IS alignment equilibrium as other models propose, managers mindset should evolve to perceive change positively and learn to adapt as the business environment change. This research illustrates that business and IS relationship evolves as the project progresses but also the level of alignment is impacted by problems faced during the project's execution. By identifying the areas of concern at different stages of the project, managers can leverage the factors affecting alignment to produce a positive adaptation. However, a key element to create positive adaptation is the managers, both business and IS, have evolve their thinking towards the new mindset principles studied in this paper.

This research assumed that IS alignment is an evolutionary process and this evolution is also evident during the lifetime of the project. Project AI shows high levels of IS alignment and managers mindset are in line with the new principles under analysis which denotes a correlation between the management practices and managers mindset. However, as mentioned before, this project was analysed in early stages and therefore the levels of IS alignment could vary as the project progress. It would be interesting to investigate in a longitudinal study, if the managers' mindset would enable to overcome misalignment as suggested by this paper. Further research is proposed to investigate the evolution of IT project alignment focused on value creation or business benefit delivery and an analysis of variables like project lifespan, scale and nature.

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