

# Perspectives on Business and Technology Alignment

Jiao (Joanna) Peng

*MSc in Information Systems and Digital Innovation  
Department of Management  
London School of Economics and Political Science*

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## ABSTRACT

The alignment between business and technology is considered important to the business. Yet, there is little agreement on how alignment can be managed in an organisation. There are two streams of opinions: alignment can be rationally planned and controlled; or alignment is fuzzy, improvised and cannot be entirely predicted. The differences between the perspectives result in different recommendations and observations from research. Literature based on the former perspective usually attempts to identify good alignment practices. It also emphasises the importance of good upfront planning. On the other hand, literature based on the latter perspective typically reflects on how alignment occurs and how to respond to unintended changes. Furthermore, with the pervasive use of digital technology in recent years, both streams of literature recognise the dynamism of technology. The view that alignment is an ongoing process has become more popular. Thus, it is essential to embed flexibility and adaptability in an organisation's strategic planning, structural design and operation.

## 1. Introduction

The alignment between technology and business has been researched for over three decades. It is also reported as a top concern for management and IT practitioners (Luftman et al., 2017). Then, what is alignment? Emergent from the search for strategic business and IT planning and IT-led organisational transformation techniques in the 1980s, alignment broadly refers to where an organisation uses technology appropriately given their situations, business needs and goals (Coltman et al., 2015; Luftman, 2000). Various terms have been used to express alignment, including 'linkage' (Henderson & Venkatraman, 1993), 'fusion' (Smaczny, 2001) and 'bridge' (Ciborra, 1997). The use of different terms indicates that there are different perspectives on how alignment can be pursued.

This essay reviews how alignment takes place in an organisation, how it can be managed, and what the different perspectives on this topic are. The differences between the perspectives influence the observations and recommendations from the research. There are two different streams of opinions: alignment can be rationally planned and controlled; or it is fuzzy, improvised and cannot be entirely predicted. Additionally, as technology develops over time, especially with the pervasive use of digital technology in recent years, the first stream can be further divided based on whether it views IT and business as distinctly separate or integrated. The view on alignment itself has also evolved from being a state or an outcome to being broadly recognised as

an ongoing process.

To view the different perspectives, research papers were selected mostly from top tier IS journals. Additionally, only papers with the main topic on alignment were selected. In order to understand how the research has evolved, both classical papers and recent research were included.

This paper is structured as follow. First, I discuss the different perspectives on alignment based on their underlying assumptions. I then discuss the connections between different perspectives, limitations and possible future research.

## 2. Different Perspectives on Business and Technology Alignment

### 2.1 Alignment can be rationally planned and controlled

The most common underlying assumption in the alignment literature is that alignment can be rationally planned and controlled. Recognising it is a complex organisational issue that management is highly interested in, many researchers have been working on providing guidance on how to manage better and achieve alignment. This research can be further categorised into two groups based on whether technology and business are viewed separately or at different levels.

#### 2.1.1 Business and technology are distinctly separate

The needs of alignment initially emergent from acknowledging technology are vital in helping business perform well, and technology and business are structurally separate. There is a large variety of

Corresponding Author  
Email Address: joannapeng@hotmail.com

research available in this category. One of the best-known models is the Strategic Alignment Model (SAM) by Henderson and Venkatraman (1993). According to SAM, there are four domains which require alignment: business strategy, IT strategy, business infrastructure and IT infrastructure. All four domains are cross related, and alignment is required for strategy, infrastructure and structure. SAM also recognises the importance of the relationship and interactions between business and technology and seeing alignment as making choices at each domain (Luftman et al., 2017; Peppard & Breu, 2003).

SAM was considered a radical idea at the time (Coltman et al., 2015). It inspired people to move away from planning IT investments and operations in isolation and thinking about their linkage with business strategy (Coltman et al., 2015). It also considers alignment not only required at the strategy level but also at the operation level (Chan & Reich, 2007). However, SAM is a conceptual model with four static components. Therefore, it does not provide sufficient insights into how alignments are achieved (Coltman et al., 2015; Luftman et al., 2017). This has motivated further research conducted in this area. One example is Luftman's series of papers on alignment enablers, inhibitors and maturity assessment (Luftman, 1996, 2000; Luftman et al., 2017). In their most recent Strategic Alignment Maturity assessment research, Luftman et al. (2017) view alignment as a series of activities carried out by IT and business jointly. The authors identify how activities from six categories: communications, value analytics, IT governance, partnering, dynamic IT scope and business and IT skills development, can impact alignment. A successful alignment requires business and IT teams to consider all these six categories together.

It is worthwhile noting that alignment research is not limited to models and key success factors. There is also research focusing on how the choice of stakeholders, their degree of involvement, and methods of communication and decision making influence alignment (Karpovsky & Galliers, 2015). Reich and Benbasat (2000) found that a shared understanding between business and technology can influence both long term and short term alignment. Additionally, IT implementation success, communication between business and technology executives, and connections between business and IT planning impact alignment on a short-term basis. Schlosser et al.'s (2015) research revealed similar findings – the shared understanding between business and technology could influence alignment positively. Their research also found that informal governance mechanisms, such as cross-functional events and cooperative activities, are more powerful in facilitating tacit knowledge sharing and developing better shared understanding.

### 2.1.2 Technology is embedded in business.

Despite suggesting IT can enable business, SAM views IT strategy as a functional level strategy and implies that business comes first, and technology needs to fit with business' needs (Bharadwaj et al., 2013; Smaczny, 2001). This view has been critiqued

for its appropriateness, given the speed and scale of technology development and usage in recent years (Bharadwaj et al., 2013). Smaczny (2001) also argues that one of the key drawbacks of the 'fit' view is the synchronisation required between business and IT takes time. Consequently, organisations may not be able to respond to changes rapidly. Additionally, the 'IT follows business' approach could result in business missing out on business opportunities that are inspired or enabled by technology (Bharadwaj et al., 2013; Smaczny, 2001).

Smaczny (2001) proposes the fusion view of business and technology. In other words, there is only one strategy that covers both business and technology, and only one set of operation plans. It is not about 'aligning' technology and business, but how to use technology strategically to enable and support the generation of business benefits. This view has attracted more attention in recent years as the use of digital technology arises. Digital technology is observed as integrated and pervasive in business (Bharadwaj et al., 2013). Additionally, it can shape business by bringing new and different ways to create and capture business value (Bharadwaj et al., 2013; Hess et al., 2016; Sebastian et al., 2017). To truly leverage the power of digital technology, Bharadwaj et al. (2013) suggest considering business and technology at an equal level and having a 'Digital Business Strategy' that integrates business and IT strategy. The authors call for a move beyond alignment, and deliberately think about the differential business values and competitive advantages that technologies can unlock.

In response to the needs of developing Digital Business Strategy, some scholars have suggested conceptual building blocks that management can follow. Sebastian et al. (2017) recommend that management focuses on either responding to or anticipating customers' needs. In order to achieve the chosen strategy, the business should have a robust technology operation infrastructure and a flexible digital platform that allows them to experiment. Furthermore, once the strategic focus is chosen, management should not change it in order to stay focused. Similarly, Hess et al. (2016) also emphasise the importance of creating a plan that can navigate firms through complexity and ambiguity. They proposed to develop such a plan by putting business' strategic goals at the centre, assessing possible use of technology, changes in business model and structure, and evaluating financial constraints. While both acknowledge the dynamic and emergent nature of digital technology and recognise that technology can drive business changes, they are not fundamentally different from the core concept of SAM. They both view strategy as a pre-determined plan that needs to be set up-front to lead business direction, then makes adjustments at the infrastructure and operational levels to support the execution of the strategy. However, given the high level of dynamism, the business could find it is challenging to define a rigid strategic plan upfront (Yeow et al., 2018).

Because technology is continuously evolving and the business environment is highly dynamic, instead of focusing on how to achieve an aligned state, some

research suggests studying the aligning process and activities (Karpovsky & Galliers, 2015; Peppard et al., 2014). This school of research views alignment or fusion of business and technology as an interactive and ongoing process. It is usually differentiated from the other types of study by using the term “strategising” or “aligning”. One of the example studies is Yeow, Soh and Hansen’s (2018) research based on the dynamic capabilities theory. Dynamic capabilities refer to a company’s ability to adjust and develop its resources and competences according to the environment in order to stay competitive (Yeow et al., 2018). Throughout the aligning journey, tensions are likely to arise from misalignment between resources and strategy. Organisations can take rational actions to resolve misalignment and tension, but these actions can trigger new tensions. For example, tension could occur when the existing business and IT resources do not meet the needs of newly emergent business needs; the aligning actions that reconfigure resources could resolve this tension but also create a new and unintended tension as they enlarge the gap between the enhanced or new resources and not-yet adapted strategy. The research highlights the complexity and dynamism of aligning and suggests a completely aligned state may not be possible to achieve. Therefore, it is more critical that enterprises stay adaptive and are able to manage both planned changes and emergent issues during the aligning process.

### 2.1.3 Section Summary

In summary, as a managerial topic, there is a large amount of literature that builds on the assumption that alignment can be rationally planned and controlled. The literature used to be dominated by the view that business and technology are distinctly separate, and technology needs to fit with business needs. In recent years, as the use of technology has become more pervasive, there is a rise of literature seeing business and technology as integrated. Common alignment guidance from both views is determining a strategic plan first, then adjusting the infrastructure and operations accordingly to support the implementation of the plan. However, guidance from the view that business and technology are integrated tends to place more emphasis on dynamism and recommends enterprises to consider this in their strategies, structures and resource designs, and operations.

### 2.2 Alignment is fuzzy and cannot be predicted

An alternative view is the relationships between technology and business are fuzzy and cannot be entirely controlled or predicted (Ciborra, 1997). Researchers who adopt this school of view see alignment as a dynamic, adaptive, multi-faceted process with an emphasis on its improvisation and unpredictability (Benbya & McKelvey, 2006; Chanas et al., 2019; Vessey & Ward, 2013). Researchers usually describe it as non-deterministic, non-linear relationship, and self-organised (Benbya & McKelvey, 2006; Peppard & Breu, 2003; Vessey & Ward, 2013). Additionally, recognising alignment is a social process, researchers believe study alignment in

context is essential, as it enriches the understanding of how and why it occurs (Benbya & McKelvey, 2006; Ciborra, 1997; Vessey & Ward, 2013). It is worth mentioning that despite this view has been around since the 1990s, it is not as prevalent as the first stream that considers alignment as rationally plannable and controllable (Peppard et al., 2014).

The fundamental belief that alignment is unpredictable and improvised has several implications. One of them is seeing strategy and its role differently. Instead of seeing strategy as a detailed plan created by an one-off top-down process upfront, researchers see it as an ongoing adaptive activity that evolves from interactions between learning and doing, between top-down planning and bottom-up emergent activities (Chanas et al., 2019; Marabelli & Galliers, 2017; Vessey & Ward, 2013). Chanas et al.’s (2019) study of a European financial service’s digital transformation journey is a good reflection of this view. In the case, management acknowledged they did not know what they could eventually achieve at the beginning. Instead of focusing on detailed analysis and planning upfront, they deliberately used a high-level strategy to set off the direction and allowed teams to explore and experiment, then continually developing and adapting the strategy based on the learning. Although strategy is still seen as important and necessary, it plays a much less deterministic role.

Another key reflection derived from seeing alignment as improvised and unpredictable is the need for balancing flexibility and control (Benbya & McKelvey, 2006; Chanas et al., 2019; Vessey & Ward, 2013). This has different implications for different organisational components and organisation levels. For example, for business and IS resources allocation, management should consider the balance between exploitation and exploration resources in order to explore while maintaining a degree of stability (Vessey & Ward, 2013). For IS infrastructure, organisations may want to take advantage of modular IS design to enable a fast IS infrastructure adaptation (Benbya & McKelvey, 2006). For governance, while business should support explorations and empower those involved in making decisions, these activities and decisions should still be subject to certain formal governance and monitoring systems, such as steering committees to ensure appropriate controls can evolve simultaneously and clear roles and responsibilities remain (Vessey & Ward, 2013). Because of the characteristics of non-linear relationships and unpredictability, having a good degree of flexibility while maintaining control could help enterprise adapt rapidly when new challenges and opportunities are observed.

Similar to the other stream of literature, most research from this stream is conducted at an organisation level. There is little research focus on the individuals involved in aligning activities, and how their day-to-day practices influence the alignment (Karpovsky & Galliers, 2015). In the limited literature I could locate, Marabelli and Galliers (2017) studied power and its influences in strategising. They noted that different forms of power co-exist and they do not occur in sequence; instead, they “co-mangle” (Marabelli & Galliers, 2017, p.359). Hierarchical power is good

at starting an initiative and can be used to promote empowering, and performative power is essential in keeping alignment sustainable. Thus, enterprises should consider utilising both.

In summary, studies build on the belief that alignment is a dynamic process with improvisation and unpredictability believe it cannot be entirely planned and controlled. Instead of developing a detailed strategic plan up-front and using it to manage alignment, it is more important to support business, technology, and their alignment to evolve over time. Enterprises need to have both flexibility and control in order to explore and adapt while remaining stable. Additionally, Enterprises should consider utilising different forms of power that co-exist and influence alignment differently.

### 3. Conclusion

In this literature review, different perspectives on business and technology alignment were reviewed. The different motivations behind the research influence the focus of the research. The stream of literature that builds on the assumption that alignment can be rationally planned and controlled focuses on identifying good practices, tools, and frameworks to manage alignment better. On the other hand, the research that believes alignment is improvised and cannot be entirely predicted and controlled focuses on gaining a deeper understanding of how and why it occurs. Both streams of literature reviewed in this paper are important to understand and manage business and technology alignment.

Although developed on different assumptions, there are similar findings from both streams of researches, especially in recent years. For example, both streams of research noted alignment is highly dynamic, and there is an increased number of researchers who suggest seeing it as an ongoing process instead of a one-off event. As a result, enterprises need to be able to adapt to changes quickly, and their structural designs also need to support the desires of exploring and experimenting. Furthermore, research from both streams considers not only tools and methods, but also the human actors involved in the process and their activities' influences on alignment. For instance, shared understanding and communication between business and technology. The biggest critique of the literature developed on the assumption that alignment can be planned and controlled is that it oversimplifies the complex real world, and it is a challenge to unpack and implement the guidance in reality (Ciborra, 1997). Luftman (2017) also commented that one of the limitations of his own research was lack of consideration of environmental, political and cognitive factors. Omitting these factors could result in incomplete guidances. On the other hand, the literature developed based on the assumption that alignment is improvised and cannot be entirely controlled usually considers the alignment context; however, context vary, and this needs to be taken into account when applying the reflections.

Moreover, although a variety of research is in place, there are still areas that could be studied further. Most alignment research is conducted at the organisation

level (Karpovsky & Galliers, 2015). Vessey and Ward (2013) see alignment as an organisational activity that requires changes beyond the individual level. However, there is value in understanding individuals' engagement in alignment in detail, as alignment is unfolded through their day-to-day practice (Karpovsky & Galliers, 2015; Marabelli & Galliers, 2017). Additionally, there is limited research on the industry context. Nonetheless, Mithas, Tafti and Michell (2013) studied how the extent digital technology is used in an industry could influence a firm's choice on the use of technology. These studies provide different insights into alignment and would be interesting to investigate further.

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