11-20-2008

A Theoretical Framework for Sustained Strategic Alignment and an Agenda for Research

Jeff Baker
Texas Tech University, jeff.baker@ttu.edu

Donald Jones
Texas Tech University, donald.jones@ttu.edu

芽|Sprouts Working Papers on Information Systems ISSN 1535-6078

A Theoretical Framework for Sustained Strategic Alignment and an Agenda for Research

Jeff Baker
Texas Tech University, USA

Donald Jones
Texas Tech University, USA

Abstract
This paper addresses the question, "How do organizations sustain alignment between organizational strategy and IT strategy over time?" We begin our investigation of this question by reviewing the literature on alignment. From this vantage point, we develop a model of sustained strategic alignment over time that integrates the two primary perspectives on alignment, alignment as an end state and alignment as a process. Our model is built upon the Dynamic Capabilities Framework, an extension of the well-known Resource-Based View of the Firm, and explains how an organization's ability to achieve a high degree of strategic alignment is an enduring competency that allows the organization to respond to the rapidly changing competitive environment. By developing a strategic alignment competency, organizations are able to sustain alignment over time. We conclude our paper by suggesting a research agenda to test our model of sustained strategic alignment and our theoretical propositions. Our paper contributes to research on strategic alignment by (1) integrating the end-state and process perspectives on alignment, (2) providing the Dynamic Capabilities Framework as a theoretical base for strategic alignment research, and (3)explaining how strategic alignment can be understood as an enduring capability that enables organizations to sustain alignment over time.

Keywords: strategic alignment, organizational performance, contingency theory,resource-based view of the firm

Permanent URL: http://sprouts.aisnet.org/8-16

Reference: Baker, J., Jones, D. (2008). "A Theoretical Framework for Sustained Strategic Alignment and an Agenda for Research," Proceedings > Proceedings of JAIS Theory Development Workshop . *Sprouts: Working Papers on Information Systems*, 8(16). http://sprouts.aisnet.org/8-16

A Theoretical Framework for Sustained Strategic Alignment and an Agenda for Research

Abstract

This paper addresses the question, "How do organizations sustain alignment between organizational strategy and IT strategy over time?" We begin our investigation of this question by reviewing the literature on alignment. From this vantage point, we develop a model of sustained strategic alignment over time that integrates the two primary perspectives on alignment, alignment as an end state and alignment as a process. Our model is built upon the Dynamic Capabilities Framework, an extension of the well-known Resource-Based View of the Firm, and explains how an organization's ability to achieve a high degree of strategic alignment is an enduring competency that allows the organization to respond to the rapidly changing competitive environment. By developing a strategic alignment competency, organizations are able to sustain alignment over time. We conclude our paper by suggesting a research agenda to test our model of sustained strategic alignment and our theoretical propositions. Our paper contributes to research on strategic alignment by (1) integrating the end-state and process perspectives on alignment, (2) providing the Dynamic Capabilities Framework as a theoretical base for strategic alignment research, and (3) explaining how strategic alignment can be understood as an enduring capability that enables organizations to sustain alignment over time.

Keywords: strategic alignment, organizational performance, contingency theory, resource-based view of the firm

Introduction

Aligning IT strategy with business strategy is vitally important to both executives and researchers. CEOs are taking a more active interest in IT and CIOs are increasingly being called upon to help formulate not only IT strategy, but organizational strategy as well [Tam, 2007]. Strategic alignment has remained among the top concerns of executives and managers for over two decades [Brancheau et al., 1996, Chan and Reich, 2007, Dickson et al., 1984, Luftman et al., 2005]. As CEOs focus more on IT and CIOs move into an expanded strategic role, their need to understand how to align IT strategy and business strategy to improve business performance will remain strong. Given this interest from practitioners, it is unsurprising that strategic alignment has been one of the most-frequently examined topics in IS research [Chan and Reich, 2007]. In light of the enduring interest in alignment among both practitioners and researchers, it seems likely that strategic alignment research will continue to be an important research agenda.

The specific issue this paper examines within the strategic alignment research stream is, "How do organizations sustain alignment between organizational strategy and IT strategy over time?" Researchers have demonstrated repeatedly that firms' financial performance can be improved when organizations are able to align IT strategy with business strategy; this conclusion has become virtually axiomatic within IS research [Reich and Benbasat, 1996, Reich and Benbasat, 2000, Sabherwal and Chan, 2001]. Here, we explain how strategic alignment can be sustained at a high level.

We discuss sustained alignment over time, linking the two primary perspectives on alignment: alignment as an end state and alignment as a process. When alignment is viewed as an end state, factor models can be developed that describe the antecedents of alignment and the outcomes of that alignment [Brown and Magill, 1994, Chan and Reich, 2007, Chan et al., 2006, Reich and Benbasat, 2000]. When alignment is viewed as a process, though, alignment is described as a goal that can never be completely achieved, and one that necessitates frequent adjustments within the organization to move towards alignment [Baets, 1992, Broadbent and Weill, 1993, Chan and Reich, 2007, Henderson and Venkatraman, 1993, Powell, 1992]. As we link these two perspectives, we explain that the end goal of alignment does indeed exist and that progress towards it can be quantified. Nevertheless, because the business environment is dynamic, alignment is also a process that requires changes to be made over time. The synthesis of these two perspectives on strategic alignment is the first contribution of this paper.

In the process of discussing sustained alignment over time, we also explain how the Dynamic Capabilities Framework, an extension of the well-known Resource-Based View of the Firm (RBV) underlies our assertions regarding sustained strategic alignment. The explanation of how this theory can undergird strategic alignment research is a second contribution of our paper, and one that is presented in response to the frequent criticism that research into strategic alignment is largely atheoretic [Chan and Reich, 2007]. Following from this theoretical explanation, we argue that strategic alignment can be understood as

an enduring competency that allows the organization to respond to the rapidly changing competitive environment. When organizations have developed this competency, they are well-positioned to sustain strategic alignment over time. This is our third contribution.

This paper will proceed in the following manner. First, literature on alignment will be reviewed, noting the roots of alignment research in strategic management literature and focusing on how that work has been developed in IS research. The various types of alignment that have been described in extant research will be noted. Second, we will develop our conceptual model and our proposition that sustained alignment can be understood as a dynamic capability that enables an organization to continue to attain high levels of alignment over time. Along with this initial proposition are others that suggest factors that promote sustained strategic alignment over time. Third, we will present a research agenda to test our propositions about sustained strategic alignment. Our agenda employs multiple methodologies, including surveys and archival research. Fourth and finally, we will summarize and review our potential contributions in the Conclusion.

A Model of Alignment

Alignment is a broad topic, one that has arisen from the idea that organizations should strive to "match", "align," or "fit" their organizational resources to the competitive context in which the organization is situated [Andrews, 1971,

Chandler, 1962, Venkatraman and Camillus, 1984][1]. A general definition of alignment has been offered as "the degree to which the needs, demands, goals, objectives, and/or structure of one component are consistent with the needs, demands, goals, objectives, and/or structure of another component." [Nadler and Tushman, 1980, p. 40]. This or any other single definition for alignment is difficult to apply in all settings because several specific types of alignment, addressing not only the organization's strategy and competitive context, but also the organization's resources, the IT department's strategy, and the IT department's resources have been developed. Here, we briefly summarize five types of alignment that have been described by researchers. We present this comprehensive discussion of the various types of alignment as a prelude to narrowing our focus to one specific type of alignment: strategic alignment, which is alignment between IT strategy and organizational strategy.

Five Types of Alignment

Among the first descriptions of alignment in literature is the idea of aligning organizational resources and organizational strategy. This type of alignment has been referred to as *business alignment* [Sabherwal et al., 2001] and was built upon the idea that an organization's structure and resources should evolve to support the strategic mission of the organization [Andrews, 1971, Chandler, 1962]. Chandler argued that organizations should have a long-term coordinated strategy rather than allowing the individual functions within the organization to

[1] The terms "fit", "linkage", "integration", "congruence", and "harmony" have been used as synonyms for alignment. Differences are slight; therefore, we adopt "alignment", the most commonly-used term. For a discussion of these other terms, see Chan and Reich [2007].

operate independently. He defined strategy as: the creation of long-term goals, the selection of courses of action that would enable the achievement of the goals, and the subsequent allocation and deployment of resources to achieve the goals. He succinctly summarized his arguments as “structure follows strategy”. When business alignment occurs, the organization is well-positioned to execute its strategy and performance benefits will accrue [Andrews, 1971, Chandler, 1962]. Researchers have continued to examine this type of alignment, both in strategic management research [Miles and Snow, 1978] as well as in IS research [Das et al., 1991, Sabherwal et al., 2001].

As IS research began to become more widely accepted within the business disciplines, the logic of business alignment was applied within the IT department to describe a second type of alignment. If alignment between organizational resources and organizational strategy yielded performance benefits, researchers conjectured that alignment between IT resources and IT strategy should also yield benefits. This type of alignment is referred to as *IT alignment* [Sabherwal et al., 2001]. Again, the logic behind this type of alignment is that when IT strategy is developed and then IT resource deployment is guided by that IT strategy, the organization is well-positioned to execute its IT strategy. The successful execution of an appropriate IT strategy enables the organization to achieve its goals. Empirical research on IT alignment has also identified performance gains [Brown and Eisenhardt, 1997, Camillus and Lederer, 1985, Keen, 1991].

The third type of alignment that has been studied is known as *contextual alignment* [Sabherwal et al., 2001]. Organizations should strive to align their

organizational resources with the competitive context in which the organization exists [Drazin and Van De Ven, 1985a]. The competitive context includes the industry context, the macroeconomic context, and other national and cultural factors [Chan and Reich, 2007]. This type of alignment has its roots in the Industrial Organization paradigm that explains that organizations develop strategy in response to the structure of the industry in which the organization competes [Bain, 1968, Porter, 1979]. Researchers have explored contextual alignment for decades and continue to discuss its impact on organizational performance [Pavlou and El Sawy, 2007, Venkatraman and Prescott, 1990].

Structural alignment, a fourth type of alignment, describes the congruence between organizational resources and IT resources [Sabherwal et al., 2001]. As with the other types of alignment, structural alignment has been investigated both in strategic management [Brown and Eisenhardt, 1997, Henderson and Venkatraman, 1993] as well as in IS [Ein-Dor and Segev, 1982, Jelinek and Schoonhoven, 1990] and performance benefits have been observed.

A fifth type of alignment, known as *strategic alignment*, examines the link between IT strategy and organizational strategy [Sabherwal et al., 2001]. When organizational managers and IT managers ensure strategic alignment by developing an IT strategy that is congruent with the organizational strategy, the potential exists to improve organizational performance. Much of the work on alignment in IS examines this type of alignment [Boynton and Zmud, 1987, Pyburn, 1983]. Research on strategic alignment remains a major focus of IS researchers [Oh and Pinsonneault, 2007, Reich and Benbasat, 1996, Reich and

Benbasat, 2000, Sabherwal and Chan, 2001]. Several closely-related definitions of strategic alignment have been developed by IS researchers, a sampling of which appear in Table 1, below.

Table 1. Definitions of Strategic Alignment

Definition	Source
"…the degree to which the information technology mission, objectives, and plans support and are supported by the business mission, objectives, and plans."	[Reich and Benbasat, 1996] quoted in [Reich and Benbasat, 2000, p. 82]
The strategic fit (between the internal and external business domains) and functional integration of: business strategy, IT strategy, organizational infrastructure and processes, and IS infrastructure and processes.	[Henderson and Venkatraman, 1993, pp. 6-9]
"Applying IT in an appropriate and timely way and in harmony with business strategies."	[Luftman and Brier, 1999, p. 109]
Using IT in a way consistent with the firm's overall strategy.	[Palmer and Markus, 2000, p. 242]
The organization of the IS function within a given firm should be contingent upon the internal and external factors specific to the firm.	[Brown and Magill, 1994, p. 372]

Figure 1 shows that business alignment, IT alignment, strategic alignment, and structural alignment are all developed within the boundary of the organization. The remaining type of alignment, contextual alignment, necessitates interaction with forces outside the boundary of the organization[2]. The degree of each of these five types of alignment, as well as the organizational strategy, the organizational resources, the IT strategy and the IT resources, then impact the organization's performance. This model itself is not a new development, but represents a synthesis of several similar widely-applied and tested models in alignment research [Baets, 1992, Henderson and Venkatraman, 1993, MacDonald, 1991, Sabherwal et al., 2001].

[2] While it is possible to consider how organizational resources, IT resources, and IT strategy could be also aligned with the context, we assume that the organization defines how its components will respond to the environment and how resources will be deployed to respond to the environment. Thus, we do not consider alignment between organizational resources and context, IT resources and context, or IT strategy and context. We assume these types of alignment to be subsumed within contextual alignment.

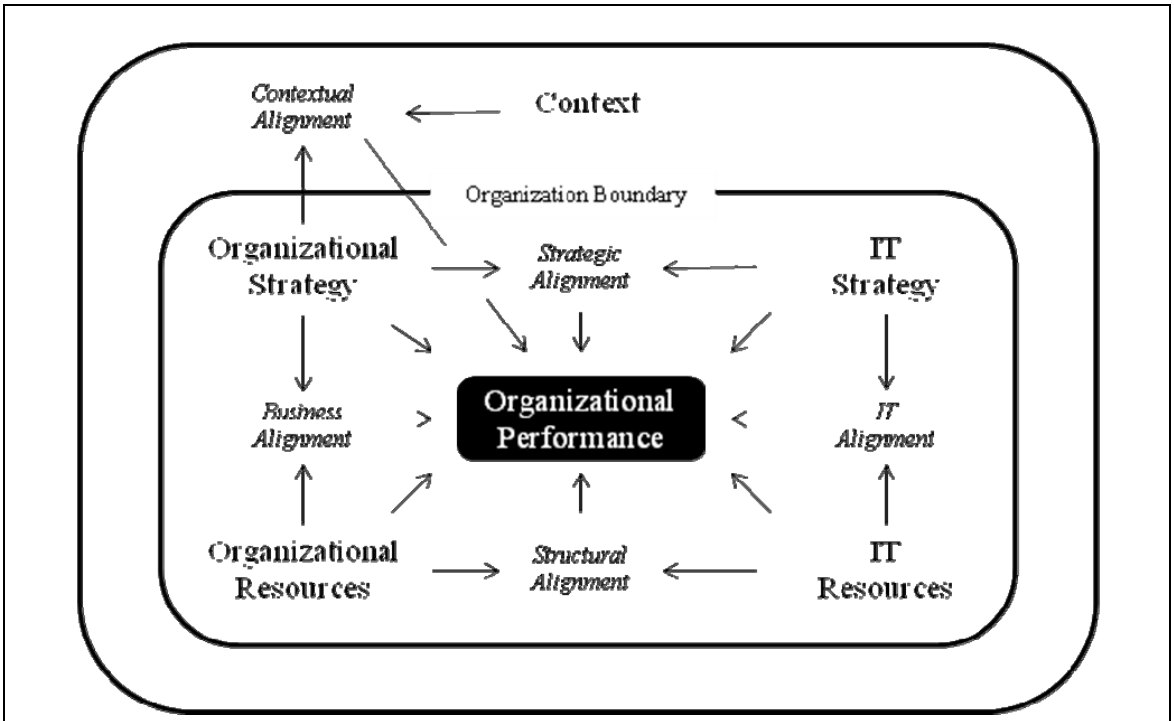

Figure 1. Alignment Model

Adapted from [Baets, 1992, Henderson and Venkatraman, 1993, MacDonald, 1991, Sabherwal et al., 2001]

Sustained Strategic Alignment

Strategic alignment has been studied for well over two decades and has been examined from varying perspectives. It is this type of alignment that will be the focus of the remainder of this paper. As we noted in the introduction, one perspective that has been adopted by researchers is to examine strategic alignment as an end state. Within this perspective, factor models have been developed to explain that this end state can be achieved by manipulating a number of antecedents. The outcomes can then be observed and quantified [Brown and Magill, 1994, Chan and Reich, 2007, Reich and Benbasat, 1996, Reich and Benbasat, 2000]. These studies generally adopt a contingency theory

perspective, explaining that the degree of alignment is contingent on the factors that are identified.

An alternate perspective is to view strategic alignment as a process rather than an end state [Baets, 1992, Chan and Reich, 2007, Henderson and Venkatraman, 1993, Powell, 1992]. The argument behind this perspective is that strategic alignment cannot be definitively achieved when the business environment is continually changing, thus giving rise to new information needs within the firm and necessitating changes in organizational strategy [Galliers, 2004]. Here, we note that these two perspectives, the process perspective and the end state perspective, are not mutually exclusive. Researchers have observed that there is particular benefit to be gained from linking these two perspectives [Chan and Reich, 2007] and it is to this objective that we now turn.

Integrating Factor and Process Models of Alignment

If strategic alignment is viewed as an end state, and is measurable at a single point in time, these measurements can be taken periodically, to assess the progress towards (or regress from) strategic alignment over time. The antecedents that are included in a factor model produce a certain degree of strategic alignment at a given time. As these factors vary over time, the degree of strategic alignment will vary over time as well. Thus, while strategic alignment may not be definitively and finally achieved at any given point, the organization can be said to be in process towards (or away from) strategic alignment at that point in time. Furthermore, even if strategic alignment is described as a process,

such an explanation does not preclude its measurement, or the measurement of progress towards strategic alignment at any given point in time.

The idea of strategic alignment being sustained over time was first explored when the Capability Maturity Model was extended into IS research to develop the "Strategic Alignment Maturity Model" (SAMM) [Luftman, 2000, Luftman, 2003]. This process model explains that as organizations persistently pursue the goal of strategic alignment, alignment moves from being an initial or ad-hoc process, to a committed process, to an established focused process, to an improved or managed process, and finally, to an optimized process. The greatest benefit to an organization is found when strategic alignment is an optimized process [Luftman, 2000]. While the SAMM model explores the "maturity" of strategic alignment and its author uses the terminology of "sustaining" strategic alignment [Luftman and Brier, 1999], we argue that "maturity" in the SAMM model is better understood as the "depth" or "degree" of strategic alignment rather than the length of time alignment has been sought or observed. Thus, we argue that time is implicitly included in the SAMM model and that it should be explicitly included in discussions of alignment. While the study that developed the SAMM process model mentions "criteria" and "components" of strategic alignment, it stops short of truly integrating a factor model with its process model.

Two additional studies have explored the idea of alignment being sustained over time. The "punctuated equilibrium" process model explains that strategic alignment may experience relatively long periods of minor, evolutionary change, and relatively short periods of sweeping, revolutionary change [Sabherwal et al.,

2001]. This study argues that punctuated equilibrium is a valuable perspective from which to view the dynamics of alignment. The study does not, however, include factors that may influence, enable, or promote alignment. Thus the study explains in what ways alignment evolves, but does not elucidate the causes of evolutionary or revolutionary change. The other study that explores sustained alignment over time recognizes that both contextual factors and technological capabilities are dynamic. Given this reality, frequent adjustments to both organizational strategy and IT strategy are required for an organization to compete successfully in the marketplace. The authors argue that "alignment" may be too static of a concept for today's rapidly-changing business context. Instead, a better goal is the "co-evolution" of IT strategy and business strategy [Agarwal and Sambamurthy, 2002]. Recommended actions to help practitioners foster the co-evolution of IT strategy and business strategy are given, but again, true factors that enable or facilitate co-evolution are not presented.

To make this link between factor models and process models explicit, we propose Figure 2, a conceptual model of sustained strategic alignment over time. Figure 2 shows that an organization's movement towards (or away from) strategic alignment is contingent upon the present state of the factors that promote alignment. These factors that promote alignment are divided into two groups: factors that promote alignment, and factors that promote *sustained* alignment. Furthermore, the degree of alignment achieved in the previous time period impacts the degree of alignment that is achieved in future time periods. The dynamic capabilities framework provides the theoretical underpinnings of our

model. We will now describe this framework and use it to develop our three propositions (shown as P1, P2, and P3 in figure 2). We will also describe specific factors that promote alignment and sustained alignment.

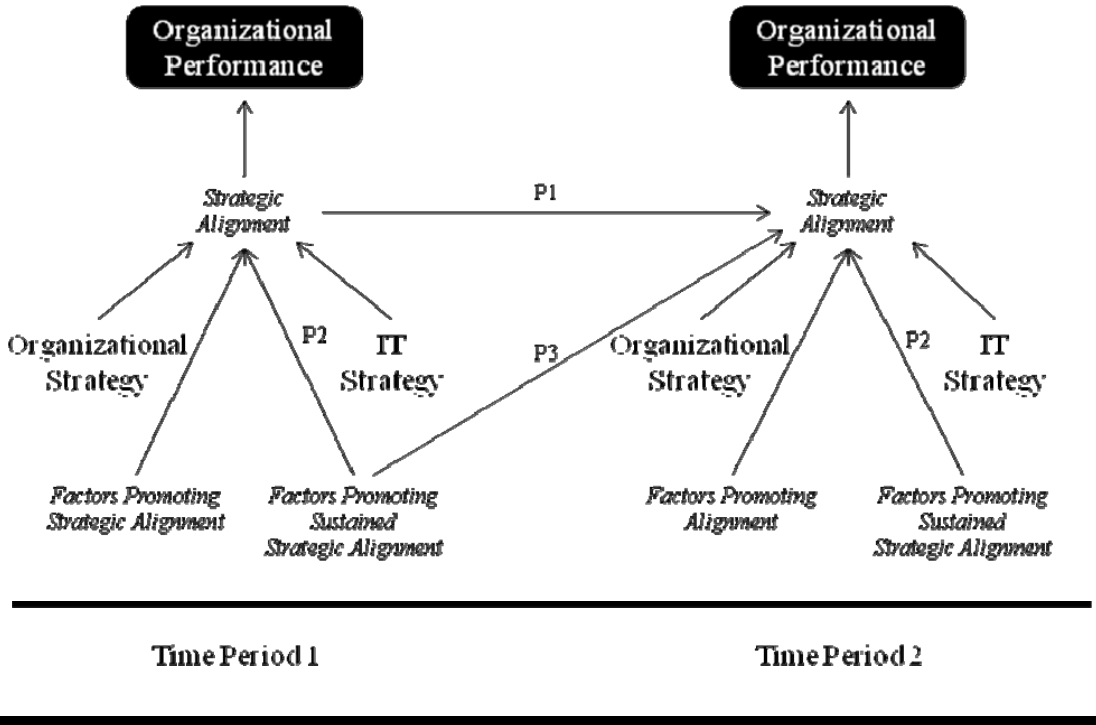

Figure 2. A Conceptual Model of Sustained Strategic Alignment[a]

[a]Note that while this figure depicts strategic alignment, there is no theoretical reason the model cannot be adapted to develop a dynamic model for other types of alignment.

The Dynamic Capabilities Framework

The Dynamic Capabilities Framework was developed partially in response to a limitation of the Resource-Based View (RBV) of the firm, namely that the RBV is a static theory of the firm [Teece et al., 1997, Wade and Hulland, 2004]. The RBV explains that competing firms possess heterogeneous sets of resources and capabilities [Wernerfelt, 1984, Wernerfelt, 1995]. Resources and capabilities that are valuable, rare, difficult to imitate, and difficult to substitute are a potential

source of competitive advantage [Barney, 1991]. The RBV defines resources quite broadly, including such items as physical capital (property, plant, and equipment; access to resources), human capital (experience, judgment, relationships of individual managers and workers), and organizational capital (organizational structure, planning processes, controlling and coordinating systems) [Barney, 1991]. Capabilities are defined as competencies that are built by combining resources [Grant, 1991]. Within IS research, it has been explained that a firm's resources and capabilities include the ability "to conceive, implement, and exploit valuable IT applications" and thus, IT may be a source of competitive advantage [Mata et al., 1995, p. 491].

In alignment research, the RBV has been applied to explain that shared domain knowledge between business and IT managers helps produce strategic alignment, improve the quality of project planning, reduce problems with IT projects, and improve organizational performance [Kearns and Sabherwal, 2006-7]. The RBV has also been used to explain how the strategy of a firm influences its productive interactions with other firms [Madhok, 2002]. Finally, without explicitly appealing to the RBV, but clearly using similar reasoning, researchers have explained that the capabilities of an organization allow it to use information resources to build competitive advantage [Johnston and Carrico, 1988].

Again, however, the RBV is a static theory of the firm and while it is well-suited to studies of stable environments, it is limited in its applicability to dynamic environments [Wade and Hulland, 2004]. To address this limitation, the Dynamic Capabilities Framework has been proposed as an extension to the traditional,

static interpretation of the RBV. The Dynamic Capabilities Framework builds on the view that an organization can be described as a set of interrelated operational and administrative routines that evolve based on performance feedback [Zollo and Winter, 2002]. Dynamic capabilities are "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" [Teece et al., 1997, p. 516]. Dynamic capabilities enable a firm to adjust its strategy and resources to maintain and sustain competitive advantage [Wade and Hulland, 2004]. Without such capabilities, competitive advantage could erode quickly.

Put differently, "to the extent that alignments result from skill rather than luck, it is reasonable to regard alignment skill as a strategic resource[3] capable of generating economic rents" [Powell, 1992, p. 119]. Indeed, it has been demonstrated that the ability to achieve strategic alignment is built upon a specific set of IT management competencies [Gupta et al., 1997]. There is no reason or evidence to suggest that these competencies are static and temporary. Instead, it is at least equally if not more plausible that they are dynamic and enduring. In fact, it has been shown that the ability to achieve a high level of strategic alignment can be strengthened if alignment is sustained over time [Street, 2006].

If organizations are skilled at aligning IT strategy with organizational strategy, there is no reason to believe that this skill should quickly erode. Instead, this

[3] Dynamic Capabilities theorists prefer the term "capability" to the term "resource" used in Powell's [1992] study, but the implications are the same regardless of the verbiage.

valuable skill should continue to be a part of the organization's operational capabilities. We argue that a high level of alignment in a given time period is evidence that an organization is developing or has developed the competency of creating strategic alignment. If the organization has developed this competency, it is more likely that it will be able to achieve a high level of alignment in future time periods than other organizations that have not developed this skill.

> *PROPOSITION 1: Organizations that have been at a high level of strategic alignment for one or more time periods are more likely to be at a high level of strategic alignment in future time periods than are organizations that have not been at a high level of strategic alignment in the past.*

At this point, we turn to a more specific discussion of the factors that promote alignment. We will discuss first, the factors that promote alignment at a given point in time, and then second, factors that promote sustained alignment.

Factors Promoting Strategic Alignment

The voluminous research on alignment has generated a comprehensive list of factors that contribute to strategic alignment. Following Chan and Reich [2007], we divide these factors into two groups: background factors such as corporate culture and prior experience with IT, and foreground factors that are visible actions of the organization that influence alignment. Because the history and development of these factors has been comprehensively reviewed [Chan and Reich, 2007], and because the focus of this paper is specifically on factors that

promote sustained strategic alignment, Table 2 presents a summary of the factors that contribute to strategic alignment in static models[4].

Table 2. Factors Promoting Strategic Alignment	
Background Factor	**Source**
Shared Domain Knowledge	[Chan et al., 2006, Reich and Benbasat, 2000]
IT Implementation Success	[Chan et al., 2006, Reich and Benbasat, 2000]
Communication between IT and Business Employees	[Reich and Benbasat, 2000]
Connections between IT and Business Planning	[Reich and Benbasat, 2000]
Planning Sophistication	[Chan et al., 2006]
Organizational Size	[Chan et al., 2006]
Environmental Uncertainty	[Chan et al., 2006]
Corporate Vision	[Brown and Magill, 1994]
Strategic IT Role	[Brown and Magill, 1994]
Satisfaction with Management of Technology	[Brown and Magill, 1994]
Satisfaction with Use of Technology	[Brown and Magill, 1994]
Locus of Control for System Approvals	[Brown and Magill, 1994]
Foreground Factor	**Source**
Strong Leadership	[Baker, 2004]
Relationship between CEO and CIO	[Feeny et al., 1992]
Top Management Support for IT	[Lederer and Mendelow, 1989]
Documenting the Business Plan	[Lederer and Mendelow, 1989, Reich and Benbasat, 2000]
Clearly Defined Goals	[Cragg et al., 2002]
Communication	[Reich and Benbasat, 2000, Sledgianowski and Luftman, 2005]
Project Priority Setting	[Luftman and Brier, 1999]
IT Knowledge of Business	[Luftman and Brier, 1999]
IT Leadership	[Luftman and Brier, 1999]
IT Involvement in Strategic Development	[Luftman and Brier, 1999]
Senior Executive Support for IT	[Luftman and Brier, 1999]
Close Working Relationship Between Business and IT	[Luftman and Brier, 1999]

Factors Promoting Sustained Strategic Alignment

Among the numerous studies on strategic alignment are a limited number that describe factors that have an impact on strategic alignment over time (Table 3). For instance, it has been found that shared domain knowledge and strategic

[4] Because empirical support for many of these factors has been demonstrated, we do not present propositions linking these factors with strategic alignment. Details regarding these factors and their theoretical underpinnings can be found in the listed references.

business plans are antecedents to long-term alignment [Reich and Benbasat, 2000]. Long-term alignment was defined as "a shared understanding of IT vision", and is contrasted with short-term alignment, which was "a shared understanding of short-term goals" [both p. 87]. Thus, long-term alignment differs from the concept of sustained strategic alignment presented here, which is simply alignment that is maintained over multiple time periods.

Table 3. Factors Promoting Sustained Strategic Alignment

Factor	Source
Shared Domain Knowledge	[Chan et al., 2006, Reich and Benbasat, 2000]
Strategic Business Plans	[Reich and Benbasat, 2000]
Aligned Reporting Relationships	[Agarwal and Sambamurthy, 2002]
Aligned Incentive Structures	[Agarwal and Sambamurthy, 2002]

In spite of this difference in how alignment over time is described, shared domain knowledge and strategic business plans do provide a foundation upon which sustained strategic alignment can be built. Shared domain knowledge is defined as "the ability of IT and business executives, at a deep level, to be able to understand and be able to participate in the others' key processes and to respect each other's unique contribution and challenges. [Reich and Benbasat, 2000, p. 86]. Shared domain knowledge between business and IT managers helps produce strategic alignment, improve the quality of project planning, reduce problems with IT projects, and improve organizational performance [Kearns and Sabherwal, 2006-7].

This type of shared knowledge must exist for effective communication to occur and for connections between organizational and IT executives to form. Once

communication has been established and connections have been formed, they do not suddenly dissolve or evaporate. We argue that these links between organizational and IT leaders endure and become a dynamic capability that can be utilized for ongoing strategic planning. As the organization's strategic plans change, and as technological capabilities change, this capability of creating alignment can be leveraged to enable alignment to be sustained. We propose:

> *PROPOSITION 2A: The level of shared domain knowledge measured at a given point in time will be positively associated with strategic alignment at that point in time.*
>
> *PROPOSITION 3A: The level of shared domain knowledge measured at a given point in time will be positively associated with strategic alignment at a subsequent point in time.*

Similarly, the existence of strategic business plans provides a way in which strategic alignment can be sustained over time. Clearly articulated strategic business plans allow organizational leaders and IT leaders to understand the long-term vision of the organization [Reich and Benbasat, 2000]. When a common understanding of vision exists, strategic alignment can then be achieved; without this common understanding, strategic alignment cannot be achieved. Strategic planning is a skill that can be developed and honed with training and experience. Thus, the development of strategic plans can be understood as a dynamic capability of an organization. With this understanding that strategic planning is an ability to reconfigure the organization's resources and competencies to address changes in organizational strategy and IT strategy, we propose that:

PROPOSITION 2B: The ability to develop a strategic plan for a given point in time will be positively associated with strategic alignment at that point in time.

PROPOSITION 3B: The ability to develop a strategic plan for a given point in time will be positively associated with strategic alignment at a future point in time.

Elsewhere, both the design of reporting relationships and the use of incentives to encourage IT innovation have been presented as recommendations to encourage the co-evolution of IT strategy and business strategy [Agarwal and Sambamurthy, 2002]. In a case study, it was observed that an organization that prioritized customer service had the CIO report to the senior executive who was in charge of customer advocacy. This placement of the CIO, the principal architect of IT strategy, under the supervision of the executive who was in charge of customer advocacy helped foster a common understanding of the organization's priorities. This idea is somewhat related to proposition 2a, which stated that shared domain knowledge promoted sustained alignment. With this shared understanding of the organization's priorities and strategy in place, the CIO was described as being more likely to guide the IT function into a state of alignment with the overall organization. Because reporting relationships generally endure for years rather than weeks or months, this factor can be understood to promote not only strategic alignment, but sustained strategic alignment. Therefore, we propose:

PROPOSITION 2C: When the CIO's reporting relationship closely reflects the strategic priorities of the organization, a higher degree of strategic alignment will be observed in the current time period than when the CIO's reporting structure does not closely reflect the strategic priorities of the organization.

PROPOSITION 3C: When the CIO's reporting relationship closely reflects the strategic priorities of the organization, a higher degree of strategic alignment will be observed in a subsequent time period than when the CIO's reporting structure does not closely reflect the strategic priorities of the organization.

In the same case study noted above, at the organization where customer service was a strategic priority, the CIO's compensation was tied to customer-centric innovations that made use of IT [Agarwal and Sambamurthy, 2002]. This incentive structure created a culture where the IT department could innovate to improve organizational capabilities. IT investment decisions were made in a collaborative relationship between organizational and IT leaders. In another organization that was described in the same research study, IT leaders were rewarded for value-innovation, with metrics including opportunity analysis, value assessment, and balanced scorecards. Evidence provided support for the idea that organizational strategy and IT strategy co-evolved.

As we have noted earlier, co-evolution represents a distinct, but similar idea to that of sustained strategic alignment. When the researchers of the earlier study state that strategies co-evolved, they are stating that the strategies were mutually reinforcing and remained that way even as the competitive environment changed. Again, because incentive structures generally endure rather than rapidly change, incentive structures at a given point in time will influence behavior into the future. IT strategy and organizational strategy will both be crafted in light of incentives available to workers. Therefore, we propose:

PROPOSITION 2D: In organizations where the CIO's incentives are tied to the strategic priorities of the organization, a higher degree of strategic alignment will be observed in the current time period than when the CIO's

reporting structure does not closely reflect the strategic priorities of the organization.

PROPOSITION 3D: In organizations where the CIO's incentives are tied to the strategic priorities of the organization, a higher degree of strategic alignment will be observed in subsequent time periods than when the CIO's reporting structure does not closely reflect the strategic priorities of the organization.

We now turn to an agenda for research into sustained strategic alignment.

Research Agenda

To test the propositions that have been presented here, we intend to conduct a multi-stage, multi-methodology investigation of sustained strategic alignment. Phase 1 will test proposition 1 and Phase 2 will test propositions 2 and 3. We argue that the degree of strategic alignment at a given point in time is contingent upon the factors that contribute to alignment and on the degree of alignment achieved in the previous time period. We have described the ability to achieve a high degree of strategic alignment as a dynamic organizational capability. We have proposed that this capability enables an organization to sustain a high degree of strategic alignment. Finally, strategic alignment, as has been noted in foregoing research, will positively impact the organization's performance.

Phase 1 Overview

Building upon the results of Sabherwal and Chan [2001], we will utilize the descriptions of Defenders, Analyzer, and Prospectors [Miles and Snow, 1978] to develop a strategic profile of each organization in our study. Organizations will

be classified as one of these three types[5]. The strategy profiles for the Defender, Prospector, and Analyzer organizational strategies will be built upon the definitions from Miles and Snow [1978]. The operationalization of these definitions to create a strategy profile will rely upon similar work with archival data in earlier research [Hambrick, 1983, Shortell and Zajac, 1990, Zajac and Shortell, 1989]. We will also examine the items used in survey-based research relying upon Miles and Snow [1978] to identify criteria to include in the organizational strategy profiles [Sabherwal and Chan, 2001, Snow and Hrebiniak, 1980]. Similarly, we will also use the descriptions of IS for Efficiency, IS for Flexibility, and IS for Comprehensiveness [Sabherwal and Chan, 2001] to develop a profile of each IT strategy[6]. To develop the IT strategy profiles, we will utilize the definitions of IS for Efficiency, Flexibility, and Comprehensiveness [Sabherwal and Chan, 2001].

Organizations will be classified as one of the three strategic types and as one of the three IT strategy types using archival data. Based on the concept of strategy as profile deviation [Drazin and Van de Ven, 1985b, Venkatraman, 1989], we will measure the degree of strategic alignment between the organizational strategy profile and the IT strategy profile. Organizations that demonstrate a high degree of strategic alignment (Defender with IS for Efficiency, Prospector with IS for Flexibility, and Analyzer with IS for Comprehensiveness) will be understood to

[5] Organizations not fitting one of these three types will be considered to be of Miles and Snow's fourth type of organization, a Reactor. Consistent with earlier literature, we consider Reactors as not having a distinct strategy or as being in transition between strategies. Therefore, Reactors will not be included in our analysis [Hambrick, 1983, Shortell and Zajac, 1990, Thomas and Ramaswamy, 1996].

[6] Organizations not fitting one of these three types will be excluded based on the rationale for excluding Reactors [Sabherwal and Chan, 2001].

have developed the capability to align strategies. It is expected that organizations that achieve a high degree of alignment in a given time period will continue to display a high degree of alignment in future time periods. This will provide a test of Proposition 1. Furthermore, we expect that organizations that maintain a high degree of strategic alignment over time will demonstrate superior performance when compared to firms that have had a high degree of strategic alignment for a shorter period of time.

The primary intended contribution of this initial phase is to examine whether evidence exists for to support the idea that the development of strategic alignment is a dynamic and enduring organizational capability. This relationship, which we have proposed above, has not previously been investigated. A secondary contribution is that this study will demonstrate the use of archival data as a basis for measuring strategic alignment. While a number of studies have been conducted using survey data to calculate strategic alignment [Chan et al., 1997, Kearns and Sabherwal, 2006-7, Palmer and Markus, 2000, Sabherwal and Chan, 2001], the use of archival data to study this topic has not, to our knowledge, been undertaken. Following a precedent established in strategic management research [Forte et al., 2000, Shortell and Zajac, 1990, Zajac and Shortell, 1989], we will utilize archival data to categorize organizations according to their realized IT strategy. The operationalization of organizational strategy profiles and IT strategy profiles using archival data is closely related to this second contribution.

Phase 2 Overview

Phase 2 will investigate each of the factors that were previously listed as antecedents of strategic alignment and antecedents of sustained strategic alignment. Where possible, survey items will be utilized from previous studies. The advantages of this reuse of survey items are first, that conceptual and statistical correspondence of the factors can be ensured. The introduction of new constructs or factors, and the introduction of new terminology has the potential to obscure rather than elucidate how alignment is achieved. Second, development of the instruments and validation of the items by previous authors lends additional credibility to results of our instrument development and validation.

The primary intended contribution of this phase is to identify specific factors that promote sustained strategic alignment. Phase 2 enables us to move from the high-level examination of alignment in Phase 1 to a more detailed level of study. Once a comprehensive set of factors are identified, insights for researchers who wish to conduct future work can be generated. Advice for practitioners who seek to develop strategic alignment capability can be distilled.

Conclusion

In this paper, we have developed a model of sustained strategic alignment that links the two primary perspectives on alignment, alignment as an end state and alignment as a process. We explain the components of our model, why those components should be included, and how those components are related to each other. We also offer a set of propositions to test our model. This new, unified,

dynamic model represents one of the primary intended contributions of this paper. Throughout this paper, we have sought to provide a sound theoretical rationale for our arguments [Whetten, 1989]. We have done so as a response to the criticism that alignment research is largely atheoretic. Our model uses the Dynamic Capabilities Framework to provide such a theoretical rationale for our arguments. This theoretical rationale is the second intended contribution of this paper. Additionally, we have explained how strategic alignment can be understood as an enduring organizational capability that enables the organization to respond to the dynamic competitive environment and sustain strategic alignment over time. This is our third intended contribution. Here, we note that foregoing research on strategic alignment has not been limited to particular organizations, types of organizations, or eras. We believe that our work is new and provides fertile ground for research into sustained strategic alignment, which will yield actionable insights for practitioners. We look forward to opportunities to empirically test and practically apply our ideas.

References

Agarwal, R. and V. Sambamurthy (2002) "Principles and Models for Organizing the IT Function," *MIS Quarterly Executive* (1) 1, pp. 1-16.

Andrews, K. R. (1971) *The Concept of Corporate Strategy*. Homewood, IL: Irwin.

Baets, W. J. (1992) "Aligning Information Systems with Business Strategy," *Journal of Strategic Information Systems* (1) 4, pp. 205-213.

Bain, J. S. (1968) *Industrial Organization*, 2nd edition. New York: Wiley.

Baker, E. H. (2004) "Leading Alignment," *CIO Insight* (1) 45, pp. 19-20.

Barney, J. B. (1991) "Firm Resources and Sustained Competitive Advantage," *Journal of Management* (17) 1, pp. 99-120.

Boynton, A. C. and R. W. Zmud (1987) "Information Technology Planning in the 1990s: Directions for Practice and Research," *MIS Quarterly* (11) 1, pp. 59-71.

Brancheau, J. C., B. D. Janz, and J. C. Wetherbe (1996) "Key Issues in Information Systems Management: 1994-1995 SIM Delphi Results," *MIS Quarterly* (20) 2, pp. 225-242.

Broadbent, M. and P. Weill (1993) "Improving Business and Information Stratgy Alignment: Learning from the Banking Industry," *IBM Systems Journal* (32) 1, pp. 162-179.

Brown, C. V. and S. L. Magill (1994) "Alignment of the IS Functions with the Enterprise: Towards a Model of Antecedents," *MIS Quarterly* (18) 4, pp. 371-403.

Brown, S. L. and K. M. Eisenhardt (1997) "The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations," *Administrative Science Quarterly* (42) 1, pp. 1-34.

Camillus, J. C. and A. L. Lederer (1985) "Corporate strategy and the design of computerized information systems," *Sloan Management Review* (26) 3, pp. 35.

Chan, Y. E., S. L. Huff, D. W. Barclay, and D. G. Copeland (1997) "Business Strategic Orientation, Information Systems Strategic Orientation, and Strategic Alignment," *Information Systems Research* (8) 2, pp. 125.

Chan, Y. E. and B. H. Reich (2007) "IT Alignment: What Have We Learned?," *Journal of Information Technology* (22) 6, pp. 297-315.

Chan, Y. E., R. Sabherwal, and J. B. Thatcher (2006) "Antecedents and Outcomes of Strategic IS Alignment: An Empirical Investigation," *IEEE Transactions on Engineering Management* (51) 3, pp. 27-47.

Chandler, A. D. (1962) *Strategy and Structure: Chapters in the History of American Enterprise*. Cambridge, MA: The MIT Press.

Cragg, P., M. King, and H. Hussin (2002) "IT Alignment and Firm Performance in Small Manufacturing Firms," *Strategic Information Systems* (11) 2, pp. 109-132.

Das, S. R., S. A. Zahra, and M. E. Warkentin (1991) "Integrating the Content and Process of Strategic MIS Planning with Competitive Strategy," *Decision Sciences* (22) 5, pp. 953-984.

Dickson, G. W., R. L. Leitheiser, and J. C. Wetherbe (1984) "Key Information Systems Issues for the 1980s," *MIS Quarterly* (8) 3, pp. 135-159.

Drazin, R. and A. H. Van De Ven (1985a) "Alternative Forms of Fit in Contingency Theory," *Administrative Science Quarterly* (30) 4, pp. 514-539.

Drazin, R. and A. H. Van de Ven (1985b) "Alternative Forms of Fit in Contingency Theory," *Administrative Science Quarterly* (30pp. 514-539.

Ein-Dor, P. and E. Segev (1982) "Organizational Computing and MIS Structure: Some Empirical Evidence," *MIS Quarterly* (6) 3, pp. 55-68.

Feeny, D. F., B. R. Edwards, and K. M. Simpson (1992) "Understanding the CEO/CIO Relationship," *MIS Quarterly* (16) 4, pp. 435-448.

Forte, M., J. J. Hoffman, B. T. Lamont, and E. N. Brockmann (2000) "Organizational Form and Environment: An Analysis of Between-Form and Within-Form Responses to Organizational Change," *Strategic Management Journal* (21) 7, pp. 753-773.

Galliers, R. D. (2004) Reflections on Information System Strategizing, in 1st edition C. Avgerou, C. Ciborra, and F. Land (Eds.) *The Social Study of Information and Communication Technology*, London: Oxford University Press, pp. 231-262.

Grant, R. M. (1991) "The Resource-Based Theory of Competitive Advantage," *California Management Review* (33) 3, pp. 114-135.

Gupta, Y. P., J. Karimi, and T. M. Somers (1997) "Alignment of a Firm's Competitive Strategy adn Information Technology Management Sophistication: The Missing Link," *IEEE Transactions on Engineering Management* (44) 4, pp. 399-413.

Hambrick, D. C. (1983) "Some Tests of the Effectiveness and Functional Attributes of Miles and Snow's Strategic Types," *Academy of Management Journal* (26) 1, pp. 5-26.

Henderson, J. C. and N. Venkatraman (1993) "Strategic Alignment: Leveraging Information Technology for Transforming Organizations," *IBM Systems Journal* (32) 1, pp. 472-484.

Jelinek, M. and C. B. Schoonhoven (1990) *The Innovation Marathon: Lessons from High Technology Firms*. Cambridge, MA: Blackwell.

Johnston, H. R. and S. R. Carrico (1988) "Developing Capabilities to Use Information Strategically," *MIS Quarterly* (12) 1, pp. 37-47.

Kearns, G. S. and R. Sabherwal (2006-7) "Strategic Alignment Between Business and Information Technology: A Knowledge-Based View of Behaviors, Outcome, and Consequenses," *Journal of Management Information Systems* (23) 3, pp. 129-162.

Keen, P. (1991) *Shaping the Future: Business Design Through Information Technology*. Cambridge, MA: Harvard University Press.

Lederer, A. L. and A. L. Mendelow (1989) "Coordination of Information Systems Plans with Business Plans," *Jounal of Management Information Systems* (6) 2, pp. 5-19.

Luftman, J. (2000) "Assessing Business-IT Alignment Maturity," *Communications of the AIS* (4) 14, pp. 1-50.

Luftman, J. (2003) "Assessing IT-Business Alignment," *Information Systems Management* pp. 9-15.

Luftman, J. and T. Brier (1999) "Achieving and Sustaining Business-IT Alignment," *California Management Review* (42) 1, pp. 109-122.

Luftman, J., R. Kempaiah, and E. Nash (2005) "Key Issues for IT Executives," *MIS Quarterly Executive* (5) 2, pp. 81-101.

MacDonald, H. (1991) The Strategic Alignment Process, in 1st edition S. Morton and S. Michael (Eds.) *The Corporation of the 1990s: Information Technology and Organizational Transformation*, London: Oxford Press, pp. 310-322.

Madhok, A. (2002) "Reassessing the Fundamentals and Beyond: Ronald Coase, the Transaction Cost and Resource-Based Theories of the Firm and the Institutional Structure of Production," *Strategic Management Journal* (23) 6, pp. 535-550.

Mata, F. J., W. L. Fuerst, and J. B. Barney (1995) "Information technology and sustained competitive advantage: A resource-based analysis," *MIS Quarterly* (19) 4, pp. 487.

Miles, R. E. and C. C. Snow (1978) *Organizational Strategy, Structure, and Process*. New York: McGraw-Hill Book company.

Nadler, D. and M. Tushman (1980) A Diagnostinc Model for Organizational Behavior, in J. R. Hackman, E. E. Lawler, and L. W. Porter (Eds.) *Perspectives on Behavior in Organizations*, New York: McGraw-Hill.

Oh, W. and A. Pinsonneault (2007) "On the Assessment of the Strategic Value of Information Technologies: Conceptual and Analytical Approaches," *MIS Quarterly* (31) 2, pp. 239-265.

Palmer, J. W. and M. L. Markus (2000) "The Performance Impacts of Quick Response and Strategic Alignment in Specialty Retailing," *Information Systems Research* (11) 3, pp. 241-259.

Pavlou, P. A. and O. A. El Sawy (2007) "From IT Competence to Competitive Advantage in Turbulent Environments," *Working Paper*.

Porter, M. E. (1979) "How Competitive Forces Shape Strategy," *Harvard Business Review* pp. 137-145.

Powell, T. C. (1992) "Organizatonal Alignment as Competitive Advantage," *Strategic Management Journal* (13) 2, pp. 119-134.

Pyburn, P. J. (1983) "Linking the MIS Plan with Corporate Strategy," *MIS Quarterly* (7) 2, pp. 1-14.

Reich, B. H. and I. Benbasat (1996) "Measuring the linkage between business and information technology objectives," *MIS Quarterly* (20) 1, pp. 55-81.

Reich, B. H. and I. Benbasat (2000) "Factors that influence the social dimension of alignment between business an IT objectives," *MIS Quarterly* (24) 1, pp. 81-113.

Sabherwal, R. and Y. E. Chan (2001) "Alignment Between Business and IS Strategies: A Study of Prospectors, Analyzers, and Defenders," *Information Systems Research* (12) 1, pp. 11.

Sabherwal, R., R. Hirschheim, and T. Goles (2001) "The Dynamics of Alignment: Insights from a Punctuated Equilibrium Model," *Organization Science* (12) 2, pp. 179-197.

Shortell, S. M. and E. J. Zajac (1990) "Perceptual and Archival Measures of Miles and Snow's Strategic Types: A Comprehensive Assessment of Reliability and Validity," *Academy of Management Journal* (33) 4, pp. 817-832.

Sledgianowski, D. and J. Luftman (2005) "IT-Business Strategic Alignment Maturity: A Case Study," *Journal fo Cases on Information Technology* (7) 2, pp. 102-120.

Snow, C. C. and L. G. Hrebiniak (1980) "Strategy, Distinctive Competence, and Organizational Performance," *Administrative Science Quarterly* (25pp. 317-336.

Street, C. T. (2006) Evolution in IS Alignment and IS Alignment Capabilities Over Time: A Test of Punctuated Equilibrium Theory: Unpublished Doctoral Dissertation, Queen's University.

Tam, P. (2007) CIO Jobs Morph From Tech Support Into Strategy, in *Wall Street Journal*, vol. CCXLIX, pp. B1. New York.

Teece, D. J., G. Pisano, and A. Shuen (1997) "Dynamic Capabilities and Strategic Management," *Strategic Management Journal* (18) 7, pp. 509-533.

Thomas, A. S. and K. Ramaswamy (1996) "Matching Managers to Strategy: Further Tests of the Miles and Snow Typology," *British Journal of Management* (7) 3, pp. 247-261.

Venkatraman, N. (1989) "The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence," *Academy of Management Review* (14) 3, pp. 423-444.

Venkatraman, N. and J. C. Camillus (1984) "Exploring the Concept of "Fit" in Stragtegic Management," *Academy of Management Review* (9) 3, pp. 513-525.

Venkatraman, N. and J. E. Prescott (1990) "Environment-Strategy Coalignment: An Empirical Test of Its Performance Implications," *Strategic Management Journal* (11) 1, pp. 1-23.

Wade, M. and J. Hulland (2004) "Review: The Resourc-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research," *MIS Quarterly* (28) 1, pp. 107-142.

Wernerfelt, B. (1984) "A Resource-Based View of the Firm," *Strategic Management Journal* (5) 2, pp. 171-180.

Wernerfelt, B. (1995) "The Resource-Based View of the Firm: Ten Years After," *Strategic Management Journal* (16) 3, pp. 171-174.

Whetten, D. A. (1989) "What Constitutes a Theoretical Contribution?," *Academy of Management Review* (14) 4, pp. 490-495.

Zajac, E. J. and S. M. Shortell (1989) "Changing Generic Strategies: Likelihood, Direction, and Performance Implications," *Strategic Management Journal* (10) 5, pp. 413-430.

Zollo, M. and S. G. Winter (2002) "Deliberate Learning and the Evolution of Dynamic Capabilities," *Organization Science* (13) 3, pp. 339-351.

芽|Sprouts

Working Papers on Information Systems | ISSN 1535-6078

Office:
Sprouts
University of Amsterdam
Roetersstraat 11, Room E 2.74
1018 WB Amsterdam, Netherlands
Email: admin@sprouts.aisnet.org

芽|Sprouts