

## Communications of the Association for Information Systems

---

Volume 18

Article 33

---

3-21-2007

# Three IT-Business Alignment Profiles: Technical Resource, Business Enabler, and Strategic Weapon

Joseph W. Weiss

*Bentley College, [jweiss@bentley.edu](mailto:jweiss@bentley.edu)*

Alan Thorogood

*Australian Graduate School of Management*

Kevin D. Clark

*Villanova University*

Follow this and additional works at: <https://aisel.aisnet.org/cais>

---

### Recommended Citation

Weiss, Joseph W.; Thorogood, Alan; and Clark, Kevin D. (2007) "Three IT-Business Alignment Profiles: Technical Resource, Business Enabler, and Strategic Weapon," *Communications of the Association for Information Systems*: Vol. 18 , Article 33.

DOI: 10.17705/1CAIS.01833

Available at: <https://aisel.aisnet.org/cais/vol18/iss1/33>

This material is brought to you by the AIS Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in Communications of the Association for Information Systems by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).



**C**ommunications of the **I**nsformation **S**ystems  
**A**ssociation for **I**nsformation **S**ystems

## THREE IT-BUSINESS ALIGNMENT PROFILES: TECHNICAL RESOURCE, BUSINESS ENABLER, AND STRATEGIC WEAPON

Joseph W. Weiss  
Bentley College  
[jweiss@bentley.edu](mailto:jweiss@bentley.edu)

Alan Thorogood  
Australian Graduate School of Management

Kevin D. Clark  
College of Commerce & Finance, Villanova University

### ABSTRACT

There is a growing recognition among alignment researchers and IT professionals that “one size does not fit all.” In this article, we provide an important extension of alignment research that shows three profiles linking IT to different business objectives. We address the need to identify the appropriate types of IT alignment by using a multi-method study including interviews and cases. Two dimensions define the three alignment profiles: internal IT-business integration and external market engagement. The *technical resource* profile calls for low levels of IT-business integration and IT-market engagement. The *business enabler* profile deploys IT in some business processes and begins engaging IT with customers and suppliers. The *strategic weapon* profile uses IT to mobilize and extend the enterprise, which requires extensive IT deployment, both internally and externally. Each profile differs in strategies, criteria, capabilities, and mental models. Importantly, IT decision-makers should not adopt stage-model thinking which assumes that technical resource profiles naturally progress up the chain. Rather, successful use of IT requires specifying the requisite alignment profile as an initial design decision so that appropriate levels of resource allocation and management involvement occur.

**Keywords:** IT Alignment, IT Strategy, IT Investments, Project Management

### I. INTRODUCTION

Despite two decades of research into IT alignment, this area remains a dominant organizational challenge for CIOs [Luftman, 2004; Prewitt, 2001; Ware, 2003]. IT executives find it difficult to cost-justify re-aligning IT to executive colleagues. Accordingly, we argue that alignment research must extend to address a gap in this literature and to help key decision-makers answer the question, “How does IT contribute to business objectives?” Frameworks must move beyond “how to” criteria and checklists [Kohli and Devaraj, 2004; Luftman, 2003]. They must recognize different patterns of alignment for different organizations’ goals. Seminal studies in IT-business alignment [Ross and Feeny, 1999; McFarlan, F. W. 1982,1984; Raghunathan and Raghunathan, 1990] have identified types of alignments that fit changing situations and company demands.

More recently, Goodhue, Wixom, and Watson's [2002] study of customer relationship management (CRM) contributed insights into alignment. Their study showed that three different "targets" (CRM components), i.e. applications, infrastructure, and transformation, required different organizational costs, benefits, sponsorship, and implementation plans to implement desired business objectives.

Our framework and findings build on these studies with the goal of addressing issues that will benefit both research and practitioner audiences. In order to ground existing theory in actual practice, we conducted interviews with top-level IT managers and drew on case studies of IT projects in several organizations over a three-year period. A full description of our method is contained in the appendix.

We offer an IT-business alignment framework of three "profiles" with criteria that address internal and external alignment issues. The first profile, "technical resource," does not require significant use of IT in business processes or in external market engagement. The "business enabler" profile uses IT in selected business processes and interfaces with critical customers and suppliers. The third profile, "strategic weapon," which uses IT to mobilize and extend the enterprise, requires extensive internal and external IT engagement. Each alignment profile differs with regard to the level of business manager involvement, view of the IT function and IT goals, and required resources appropriate to effectively lead, plan, and implement IT.

The structure of this paper is as follows: Section II explores the literature and field engagements that motivated this research. Section III presents the three IT alignment profiles. Characteristics illustrate each profile with reference to practical cases. Section IV examines how organizations decide which profile fits their needs. Typically, their motivation is to resolve conflicts and inefficiencies caused by poor fit. This section also details the challenges faced by multi-divisional firms managing a portfolio of projects each requiring different levels of alignment. Section V presents four success factors that help to overcome the challenges in re-aligning IT. We end the paper with a summation of the major findings and offer recommendations for IT-business alignment research.

## **II. MOTIVATION FOR THE STUDY**

Alignment of IT with business objectives remains a central issue for IT researchers and professionals [Luftman 2004; Prewitt 2004; Ware 2003]. Indeed, researchers have developed several alignment models to demonstrate the advantages of alignment in general [Kearns and Lederer 2003; Kohli and Devaraj 2004; Luftman 2003]. While studies referred to earlier [Ross and Feeny, 1999; McFarlan, F. W. 1982, 1984] differentiated among alignment types, little to no emphasis was placed on alignment with external markets. An emphasis on aligning with internal business needs is still a dominant concern of alignment research. Alignment models explicitly separate business strategy and business processes from the IT. The implicit assumption is that there is a two-step process: first, determine the business objectives; second, fit the IT to the business. IT governance aims to lock IT to these business goals.

IT governance specifies the decision rights and accountability frameworks to encourage desirable behavior in using IT [Weill and Ross 2004]. The IT Governance Institute develops COBIT, which is one of these frameworks [Information Systems Audit and Control Association 2006]. COBIT, now in version 4, includes detailed descriptions of 34 IT processes. COBIT explicitly takes a business strategy and develops an IT strategy to execute support for the business strategy. In this way, the IT strategy is a second-order consequence of the business strategy. COBIT's focus is on execution rather than strategy formulation. In addition to aligning IT with the separately defined business strategy, COBIT's concerns focus on operational issues such as value delivery, resource management, risk management, and performance measurement.

Despite these sophisticated governance and alignment models, CIOs remain dissatisfied with IT alignment. In many industries, IT now extends across the internet to reach suppliers, customers and business partners. Earlier alignment frameworks exclude this dimension, resulting in only

second order alignment. Rather than IT being part of the business strategy the alignment frameworks encourage IT and business apartheid, which results in an IT function failing to contribute to organizational success and business units that do not grasp IT's possibilities.

For example, an IT manager noted that business plans required linking systems with external stakeholders, so sponsorship and ongoing involvement by executives would become a key success factor. This manager also noted that the people "closest to our customers" would become integral to systems design. Such a comprehensive use of IT would necessarily include executives *and* client-facing managers who are familiar with onsite issues in planning strategies to solve operational problems, identify strategic opportunities, and align IT and the business [Broadbent and Kitzis 2005; Gibson 2003; Ross 2003].

Finally, the type of alignment required should take into account the anticipated impact of IT on competitive advantage. Many IT functions adopt the internal organizational paradigm to enhance the efficiency of operations, with consequent improvements to the bottom line, but with no effect on the strategy or market engagement of the firm. Such IT functions focus on repairing, maintaining, and refreshing but not on market-related outcomes, thus excluding alignment as a contributing or differentiating factor to the firm's market performance [Kohli and Sarv 2004; Luftman 2004]. Researchers have recognized the problem inherent in limiting alignment thinking to the internal organizational paradigm, and the need to consider the role of IT projects in market engagement. Broadbent and Kitzis (2005) provide one example of a research trend emphasizing the collaboration between CIOs and other IT professionals with the CEO in order to effect strategic change.

Organizations that use IT simply to automate administrative processes and indirectly improve firm performance require a different type of IT alignment than those that use IT to directly impact the firm's strategy by reaching into markets or deploying IT-based products.

The next section of the article develops three alignment profiles based on both the level of market engagement and the level of internal IT deployment. In this model, the "business enabler" and "strategic weapon" profiles may integrate IT with strategy to such an extent that IT and strategy evolve in a mutually reinforcing manner, each influencing the direction of the other. The "technical resource" profile refers to IT use that orients around the automation of administrative processes. Specifically, the framework offers an organizing logic to help define, differentiate, and guide early stage IT investment planning as shown in Figure 1.

<p><b>1. Purpose:</b></p> <p><i>The main purpose of IT is...</i></p>
<p><b>2. End-state (projected):</b></p> <p><i>Once IT aligns with the business there will be the following difference(s)... because....</i></p>
<p><b>3. Type:</b></p> <p><i>1) Technical Resource, because:</i></p> <p><i>2) Business Enabler, because:</i></p> <p><i>3) Strategic Weapon, because:</i></p>

Figure 1- Alignment Diagnostic's Initial Probes

**III. THREE ALIGNMENT PROFILES: TECHNICAL RESOURCE, BUSINESS ENABLER, AND STRATEGIC WEAPON**

There is a need for a diagnostic framework, as discussed earlier, that helps IT and business leaders to agree on the purpose and the nature of IT before IT investments receive approval. Use of the proposed framework to decide this fundamental issue could prevent disappointments of successfully achieving the wrong goals; or, of failing to re-align an enterprise. The IT-Business Framework is an instrument for diagnosing and prescribing IT alignment both internally, with the business, and externally, for market engagement. The instrument combines two planning approaches: the first focuses on identifying strategies, structures and planning methods; the second investigates actors, values, domain knowledge, and communications [Reich and Benbasat 2000]. Based on our adaptation of an earlier scheme by Daft (2004:624), we distinguish three types of IT-business alignment. Figure 2 presents these as: Technical Resource – where IT applies to administrative operations in a stable environment; Business Enabler – where IT empowers the business to reduce cost, improve quality and/or satisfy market needs, and; Strategic Weapon – where IT aligns with strategic change to re-position the organization or drive the market.

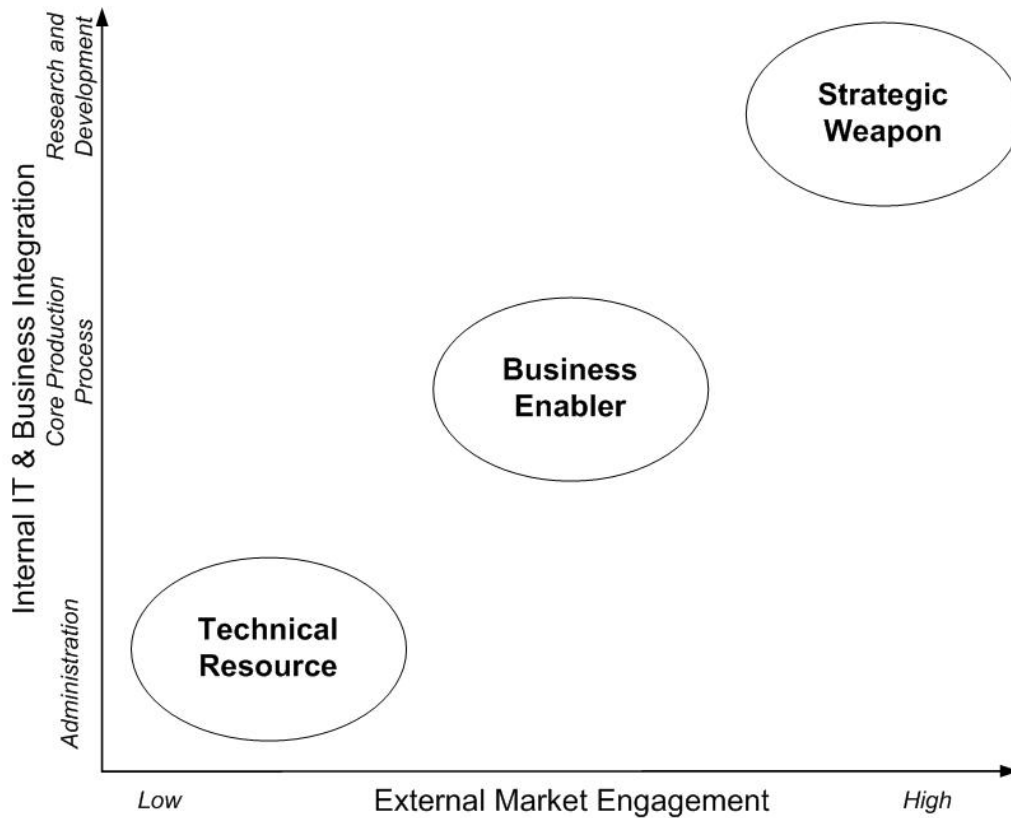


Figure 2. IT-Strategy Framework

Two dimensions initially define the three profiles, technical resource, business enabler and strategic weapon. The *Internal Integration* dimension refers to the level and amount of coordination and integration, in terms of a value chain [McFarlan 1981; Porter 1985]; the levels correspond to IT use first in administration, then in core production processes and finally in product research and market development. This dimension also indicates uses of human, financial, and organizational resources and investments. *External Market Engagement* refers to the use of IT to improve a firm’s market performance or industry competitiveness. This dimension

refers to the external effectiveness of IT investments. The higher the strategic effect, the greater the uncertainty and need for executive engagement [Clemons 1991]. Table 1 presents characteristics of IT-business alignment profiles.

Table 1. Characteristics of IT-Business Alignment Profiles<sup>1</sup>

	<b>Technical Resource</b>	<b>Business Enabler</b>	<b>Strategic Weapon</b>
<b>Internal Integration</b>			
Target of IT Investment	Administration	Core Business Process	Product Research and Market Development
CEO	No involvement	Awareness and supporting IT	Exploiting IT as 1 <sup>st</sup> order thinking
Board	No involvement	Probes CEO on competitors' use of IT	Contributes IT knowledge and suggests strategic use
CIO	No involvement	Partners with CEO	Valuable member of the executive team
IT-Business Relationship Mgrs	None or as needed	Facilitating knowledge transfer	Building relationships as partners
View of IT	Automation	Information	Transformation
IT Strategy	Technology life-cycle management	React to business needs by seeking alignment and managing life-cycle	Subsumed into business strategy
IT Structure	Central function	Federal	Central and Federal
Investment decision-making	Annual budget proposals, championed by functional heads	Multi-year project initiatives, championed by business heads with the CIO's support	Multi-year initiatives, refreshing infrastructure, championed by CEO, CIO and the board
<b>External Market Engagement</b>			
Typical market objectives	None	Improve service and / or reduce cost	Extend the enterprise
Sourcing	In-house and bureaus: departments, functions, and bureaus	Packages and out-sourcing	Multi-sourcing
Partnerships	None	IT vendors, other stakeholders	With suppliers and distribution channels
Standards	None	Open Systems or dominant vendor	W3C, esp. XML
Perception of market	Non-existent/Threat	Balance	Opportunity
Industry (traditionally)	Most, including farming, mining, health care, education	Retailing, manufacturing, services, government	Finance, e-business, automotive, utilities

<sup>1</sup> Sources used to construct Table 1 are based primarily on Porter, M.E. "Strategy and the Internet," *Harvard Business Review* (March) 2001, pp 62-78 and Earl, M.J. and Feeny, D. "How to be a CEO for the information age," *Sloan Management Review* (41:2) 2000, pp 11-23.

**1) Technical Resource:** This type of alignment requires little IT and business resource integration and coordination within organizational units. IT with a *Technical Resource* alignment does not directly affect a firm's competitive advantage. An example is individual IT applications that apply to single functional units (e.g., workflow automation or PC replacement).

While organizations use this alignment for routine technology work, it can add value with a goal similar to Ross's "local optimization," exemplified by "application silo architectures" [Ross 2003]. Benefits of aligning IT in this way include increased functional expertise and focused innovation. The downside involves the limited application of specialized technologies to a firm's business and geographic structures.

Table 1 characteristics also serve as general criteria for identifying internal and external IT alignment. Any alignment profile includes the organizational structure, strategy, production technology, and key players involved.

For example, a *technical resource* profile applies when *internal integration* indicates that functional unit heads are championing IT investment decisions using annual budgets, with executive management not involved in selecting or running IT-business projects. For organizations investing in this alignment profile, there is often little IT-business strategic overlap, although all IT should align back to an organizational unit's strategy to justify their investments. Organizations using a technical resource profile tend to build specific in-house applications that involve few standards, and their IT projects aim for efficiency and cost control goals. Technical costs are the primary measurement of projects with this alignment profile. Supervisors and professionals who plan and administer technical resource IT often operate from a professional belief system (or mental model) that focuses on solving problems to eliminate inefficiencies and increase internal operational control through lowering risk and conflict. IT aligned this way has little to no effect on *external market* objectives, except to keep internal systems running smoothly to enable others to do their work. In an alignment study of fifteen organizations, we concluded that the *technical resource* alignment "thrived" [Weiss and Anderson 2004]. Following is a description of one organization we studied that exemplifies the technical resource alignment profile.

ABC, Inc. is a Fortune 1000 company with over \$1 billion in sales employing more than 8,000 people in 56 facilities worldwide. The Aerospace division is located in the Northeast of the U.S. and generates almost \$200 million in revenues. It consists of six sites organized into three business units with more than 700 employees. The business represents a cobbling together of several major acquisitions. Most of the plants have been in operation for several decades and are ISO 9001 certified. The differentiated products are engineering solutions designed to meet customer needs. Major customers include prestigious U.S. Fortune 500 firms and public organizations.

The industry has faced a severe contraction since September 11, 2001, and is experiencing fundamental changes in both the business model and customer behaviors. Cycle times of new products are shrinking and there are fewer new platform launches. Customers are parking older aircraft that could have provided higher margin maintenance revenue in the desert. In the face of this changing market, ABC still expects year over year profit improvements from this division as well as revenue growth.

The main IT thrust for 2005 includes the implementation of an IT integration system that is primarily an operational resource. The major budget allocation for this large implementation effort included seven sites, approximately 850 users and 3200 customers. The ability of this project to rein in costs will be critical to the division, but will not fundamentally change the way they do business. Customers will perceive little, if any, difference in how they interact with ABC. Apart from authorizing spending approval, little top manager involvement is required.

The technical resource profile is a necessary and important part of the alignment arsenal. Some departments, divisions, and business units ideally suit a *technical resource* profile. However, as

Figure 2 indicates, poor *technical resource* alignment can waste substantial organizational resources and incur significant operational costs. In a multi-business firm, the selection and monitoring of the number, types, and value of projects investing in *technical resource* IT can and perhaps should involve some oversight by the CIO at the outset.

**2) Business Enabler:** Organizations use this profile to improve efficiency in business processes and/or engage, to varying degrees, with their markets, which requires the creation and integration of resources and expertise across and within business units. These firms are, and have been, reorganizing around business processes to automate the internal organization, gain flexibility, share and cut costs, *and* extend part of the organization's reach to better service customers or integrate with suppliers. IT investments managed with a *business enabler* profile achieve significant cost controls and organizational efficiencies. ERP and other large-scale systems are example applications in this profile. Following is an example of a firm we studied implementing a project that fits the business enabler profile.

Company L designs, manufactures, and supports various defense and aerospace systems internationally. The company focuses on systems integration, hardware and software development, production, and technical support. The local business unit within Company L provides electronic and information systems and subsystems to government and commercial customers internationally. The strategy of this business unit is to provide systems that will protect and defend the end users. While IT plays an important role in making the operation more efficient, the strategy of the business unit is to use technology to improve connectivity with external stakeholders. The business unit implemented an enterprise resource planning system in order to link up the internal systems. This implementation helped the role of IT in the business unit transition from an operational technical resource to a business enabler. A second primary objective of this project is to connect with their suppliers and customers. By connecting with the external community, the business unit believes it can meet their needs faster and more accurately, as well as form a stronger partnership with the members of that community.

Using technology as a business enabler is working out well for the business unit. The various locations and functions within the business unit are now all connected and working from common data. The unit has moved beyond processing data, and into analysis and prediction. They are using IT to help make decisions, improve processes, and communicate. Specifically, the operations and finance groups within the unit are now operating from the same database and therefore can work together to reconcile differences in inventory and transfers. Previously the data was coming from two different sources and it was difficult for the two groups to work together and develop conclusions. The engineering and operations functions are also now working from a common database and can share drawings and material lists. They are now instantly aware of any design changes or new drawing releases. The value of IT has increased within the operation as a function of the level of business integration.

The project is progressing toward meeting the second objective – connectivity with customers and suppliers. This transition is slightly longer and more difficult as they try to get suppliers and customers on board and develop the structure for e-commerce. Greater top management involvement, in conjunction with input from the business functions who interact with external stakeholders have been important facilitators of the progress made to date. The increased reach of business enabler IT requires greater management support, a broader coalition of involved business managers, and a mindset of moving beyond operational efficiency to conceive of opportunities for IT to help grow the business.

Referring to Table 1, the CIO and business unit heads are the *internal integration* champions for business enabler IT. Ideally, the CEO and board are involved in governing and funding the costly but promising cost-cutting strategies. Internally, these IT investments still mostly target production processes. In terms of *market engagement*, IT projects with this alignment are popular in large and mid-size firms since, as noted earlier, streamlining business processes and automating communications can add value to firm performance and effectiveness by increasing efficiencies and service. Managers and professionals who focus externally believe that their work



may require high risk but also high gain for the enterprise. As one manager stated, "If we can't solve customers' business problems with our technologies, we don't deserve to do business with them." The IT and business managers share a mental model that generally focuses on resource shortage and internal control with a mixed concern about risk and conflict.

**3) Strategic Weapon:** Investments in this profile call for transformational change since they target goals in regional, national, and/or global markets. Effective implementation can require enterprise-wide organizational resources and expertise. "Rationalized data" and "modular" architectures are examples of technical strategic weapons [Ross 2003]. An example of an end-to-end Strategic Weapon transformation that exemplifies many of the concepts in our framework is in Cooper, Watson, Wixom, and Goodhue's [2000] study of First American Corporation (FAC). FAC used IT as a transformative resource that enabled the firm to emerge from financial hardship to become a leader in its sector. To accomplish this feat, FAC assembled a strong team of top managers who deliberately planned and set specific targets to drive the projects and made sure that IT and business strategies fully integrated. Due to the cost and scope of the change, this was a multi-year investment and phased rollout. The result was a radically different approach to clients that enabled FAC to attain a leadership position in its industry.

*Strategic weapon* investments are the most challenging to plan and implement, especially for large, geographically dispersed firms. For example, one firm that consulted us implemented commonly shared metrics between the enterprise, suppliers, customers, and partners; another company wished to establish a common supplier portal, personalized for each supplier, which would include information for developing proposals, reviewing supplier status, and offering detailed standards for performing B2B transactions. Following is an example of a firm in the study that used IT as a strategic weapon.

A mid-size financial services organization identified their IT as a strategic resource. The organization funded an IT project to consolidate common data across the enterprise and viewed this solution as a "strategic weapon." Senior business managers, including the CEO, identified the project as a crucial element in delivering their strategic business objectives. The organization as a whole was moving towards providing IT services centrally with all elements falling under a common management chain and in a coordinated fashion with business objectives. Senior IT and business managers conducted regular planning sessions to help develop IT initiatives that would prepare and enable the accomplishment of business objectives via this project. This was a significant change toward opening and integrating the organization's culture. Up to this point, the IT function had mostly developed IT in a silo independent of any solid business engagement.

The objective of the project was to consolidate and synchronize common data sources within the organization for internal and external activities. The eventual goal was to include all data sources within the environment such as human resource and enterprise resource planning (ERP) information, security services, and infrastructure services such as email. Over the previous five years, the IT function had twice proposed this solution as part of the annual budget cycle but business executives denied the funding due to the "fuzziness" of the benefits and the reluctance of the business community to share data without seeing a definite return. The business executives were viewing the project as purely technical in nature, thus they did not perceive the efficiency benefit as worth the risk of compromising data nor worthy of allocating the significant resources.

Important differences characterize the current project. As an initial step, the IT function asked the organization's business units to share their immediate and future plans and requirements with the IT community. They then used this information to develop a project proposal that focused on improving time-to-market of new products and services, simplifying employee and customer access to products and services, and ensured consistency of data. The business executives quickly accepted this third proposal, primarily because the project was viewed as the key item that helped to meet their near and long term business goals. Since then, the organization accepted the solution and implemented the changes. The implementation took "a brick at a time," and involved a broad coalition of managers at various levels in the organization. Though the

project is expensive in traditional terms, top managers have already seen payoffs from greater cooperation and integration across areas of the firm.

Referring to Table 1, the CEO and CIO typically lead *internal integration*, collaborating to extend the enterprise and champion *strategic weapon* projects. Generally, either a combined IT-business strategy or a business strategy integrating IT capabilities drives these projects. However, initiatives can start without any formal strategy, as noted earlier. Along with the CEO and the CIO, the board is also involved in funding and approving these IT investments. Realistically, the larger and more comprehensive the initiative, the more professionals with different mental models, communication styles, and motivations are involved. Therefore, leading or managing a *strategic weapon* project is a transformative experience that requires a range of technical, business, and interpersonal competencies.

*External market engagements* for *strategic weapon* initiatives often include multiple supplier partnerships and can restructure distribution channels and exploit open Internet-based standards. The IT and business managers share a mental model that focuses on external flexibility, and high risk, high gain organic relationships. CRM, SCM and other e-business technologies are the strategic weapons that help firms enter, extend, and/or sustain markets. Customized balanced scorecards gauge business and IT performance. Managers of these projects seek creative, high communication environments.

#### IV. EXAMPLES OF ALIGNMENT CHALLENGES IN PRACTICE

Of the three alignment profiles that we identified and studied, *technical resource*, *business enabler*, and *strategic weapon*, the latter two presented greater issues and challenges to firms. Organizations can confuse the business enabler and strategic weapon alignment profiles, as discussed below. This section summarizes two case studies of a consulting firm and a multi-division bank to illustrate issues firms face and solve in adopting alignment profiles.

The case of DWR consulting provides a useful illustration. DWR provides technology-consulting services to a range of industrial clients worldwide. Similar to industry rivals, DWR decided to build an IT-based knowledge management system in order to build organizational knowledge around effective practices. Unlike rivals, who saw such systems as business enablers, DWR saw their project as fitting in the strategic weapon profile, which aligned their IT capabilities with a business strategy of extreme customization and service. The system included capabilities for real-time sharing of customer preferences down to the level of personal likes and dislikes (e.g., where clients prefer to eat, how clients prefer to be contacted) of contacts within client organizations. In conjunction with a culture of teamwork and strong norms of communication, the IT project has successfully enabled DWR to outperform rivals in the strategic area of customized service. Indeed DWR has been able to steal share from the number one firm in their segment. While most of DWR's rivals have developed and implemented knowledge management systems, few have viewed these projects as capable of fundamentally enhancing the firm's competitive position. DWR was able to conceive of a level of data sharing that allows for true personalized service, and used their IT to exploit this insight. Importantly, the successful implementation required not only support, but also involvement from the top business and IT managers, changes to the organizational culture, and the parallel development of new organizational procedures consistent with the effective use of the new system capabilities.

Any one of the classic inhibitors can disrupt an investment program that requires this type of alignment, e.g., lack of senior executives' support, poor business communication with IT, and withholding of business budgets for IT investments [Luftman and McLean 2004]. Projects within a *strategic weapon* profile require enabling drivers such as IT's understanding of the firm's business environment, close partnership between IT and business, linking IT and business plans, and IT demonstrating strong leadership [Reich and Benbasat 2000]. These types of projects are encompassing, difficult undertakings that can span from one to five years, or longer. Having

conceived and implemented business enabler projects, it is unlikely rivals will be able to replicate the strategic benefits of DWR's strategic weapon project.

Managers' experience with a given alignment profile can affect their ability to conceive of and implement other profiles. In our interviews, we asked business and IT executives to identify which type of alignment profiles (using Figure 2) best characterized their firms' recent IT investments. Most reported the *business enabler* profile, followed by *technical resource*. Only 13 percent identified theirs as *strategic weapons*. Moreover, those reporting primarily a *business enabler* profile split regarding whether they believed this to be the appropriate alignment for their organization. Many felt their firm should be using IT as a *strategic weapon*.

A problem we found with *technical resource* alignment is that many firms come to rely on internal uses of technology from mindsets formed during earlier stages of IT systems development and/or avoidance of moving to more market-focused strategies. The *technical resource* mental model and mindset can also be difficult to facilitate when professionals and even teams have grown accustomed to and habituated in performing these kinds of tasks and projects. When called upon to plan and implement projects that require alignment in *business enabler* and *strategic weapon* profiles, "stovepipe" attitudes and narrow functional attitudes can resist change [Schein 1992]. Extending the earlier ABC firm example, one business manager wanted to use technology as a business enabler, but ABC tended to use IT as a technical resource due to the short-term profit constraints. While ABC's industry is demanding increasingly Web-based technologies for order entry and the dissemination of technical data, ABC has been slow to commit resources for a customer-centric Web site. A corporate Web site still does exist for that firm and the executives continue, in practice, to define business/IT projects from an investor relations rather than a customer focus. One general manager stressed that the business needed to move in a customer focus direction, but that IT budgets were committed elsewhere. The firm had an alignment history of having a cost-conscious focus on technology rather than business collaboration and on an absence of top management involvement in IT. This experience, perhaps unfortunately in this case, fits the *technical resource* profile.

Located between *technical resource* and *strategic weapon* profiles in our framework, the *business enabler* alignment challenges IT and business executives in, at least, two ways. First, IT investments with this type of alignment can demonstrate just enough return and value to rationalize not extending IT to the enterprise's performance in new and different markets. Second, *business enabler* mental models and mindsets can also become ingrained, self-reinforcing and resistant to change, especially if IT has aligned more toward internal efficiency than the external market.

Many executives believed that their firms should be using IT as a *strategic weapon*, but decide instead on a *business enabler* profile for a number of reasons—the most prominent is captured in the following response "...changing business processes is easier than moving an entire company forward" and "Our customers were ready for dramatic changes, but our culture wasn't." These attitudes also possess a striking resemblance to the core tenets of Jim Collins' work in *Good to Great* (2001) in that moderately successful organizations do not feel the need to change and are thus not likely to develop IT as a source of strategic advantage. Though researchers have also shown the functional benefit of satisficing for the implementation of complex ERP projects [Brown and Vessey 2003], Collins details how a form of satisficing, where good or very good firms resist change, poses an insidious constraint on the ability of these same firms to transform their businesses to achieve greatness. Furthermore, D'Aveni's (1994) work on hypercompetition suggests that regardless of industry segment, good and very good firms will find survival increasingly difficult to achieve unless they embrace change. Firms that have proper IT-business alignment will garner sustainable competitive advantage through the leveraging of IT capabilities in ways few firms realize [Barney 1991].

## **MULTI-DIVISIONAL ORGANIZATIONS**

Multi-business firms may use IT in different ways within each business unit, requiring different IT-business alignment profiles. One business unit may use IT as a strategic weapon whereas another uses it as a business enabler. Our framework helps corporate CIOs to make explicit the underlying mental models.

The following case summary shows how a large bank's broking business uses IT as a strategic weapon, with the organic processes, tight IT-business integration and strategic thinking that characterize this profile. The parent corporation, the Commonwealth Bank of Australia, exemplifies the use of multiple alignments within a multi-business unit organization.

---

### **Commonwealth Securities, Ltd**

The case of Commonwealth Securities [Reynolds and Yetton 2005], Australia's largest stockbroker, provides a useful example of different types of alignment within a large corporation. Its parent, Commonwealth Bank of Australia, launched the stockbroker as a start-up venture, separate from the main bank, in 1995. The corporate IT function retained responsibility for traditional banking IT services, with the CIO taking a long-term view to the core banking business and outsourcing almost all assets and activities to EDS in a 10-year and a \$6 billion contract. A technical resource profile would help corporate IT to ensure that projects would deliver highly reliable and low transaction-cost systems in a relatively stable environment. In contrast, Commonwealth Securities had shorter time horizons. It had to move quickly to engage with a transforming market while developing its own business model. Adopting a strategic weapon profile would fit the stockbroker who insourced IT development to drive the market and preempt competitors' tactics. A strategic weapon profile has a mental model that values both the capacity to change and a core development team's competence. Commonwealth Securities recognized the high risk in entering a new market with a new product, so they used scripting technology to adjust workflows during the working day, developed innovative IT systems in support of new products to reduce market risk, and evolved a "dynamic mode of operations" to tightly integrate the IT and business operations' staffs in solving business issues.

---

In this case, the corporate IT group is focusing on keeping the lights on. Projects for such an IT group would involve infrastructure replacement and incremental capacity growth. Separately, the Commonwealth Securities business unit is using IT to create new business value through a number of initiatives.

Figure 3 shows how a multi-business unit bank could map the projects from different business units. It shows the patterns of integration and market engagement that are possible - indeed necessary - within a divisional organization. Projects cluster around the different business units' profiles of IT alignment. Figure 3 can also serve as a planning aid to show decision makers how many alignment profiles an organization has.

## **V. TRANSFORMATIONAL IT ALIGNMENT: SUCCESS FACTORS**

IT transformation is a higher risk endeavor requiring excellent leadership and substantial resources. In this section, we present a vignette that illustrates strategic alignment challenges experienced in a large, successful public services alignment. We then discuss success factors common to transforming alignments based on our overall study.

---

### **PUBLIC FINANCIAL SERVICES**

This U.S. government organization had a fragmented IT infrastructure that made it difficult for business units to share data. As a result, critical decisions lagged, communication within and between departments suffered, and "management by excuses" grew. In the preceding two years, the IT function's attempts to secure funding for a major refresh were met with incredulous executives who saw only fuzzy benefits delivered by a department known only for generating

efficiencies. To overcome these objectives, the CIO deliberately and skillfully articulated a vision with near and long-term business goals that promised to cut costs and time while providing outcomes most wanted: real-time status reports and information everyone needed to do their work. The CIO moved forward by integrating a select and representative IT planning and business team that co-developed a practical proposal clearly stating what the result of the refresh promised. The team then outlined a project plan and organizational process that showed objectives, milestones and metrics. The CIO proceeded to work, more intensely at the beginning meetings, with the cross-functional team by structuring discussions and dialog around the vision, always referring to the purpose and end-state of the project's refresh. Open communication, trust in the organizational process, and observable leadership characterized implementation meetings that often became "heated." In retrospect, the rollout has been a success and the organization is now leveraging its information assets to support new business initiatives. Executive business decisions are timely; the IT department's image of being highly efficient has been restored; and communication within and between IT and business groups has improved. The organization bolstered its external reputation among customers and stakeholders.

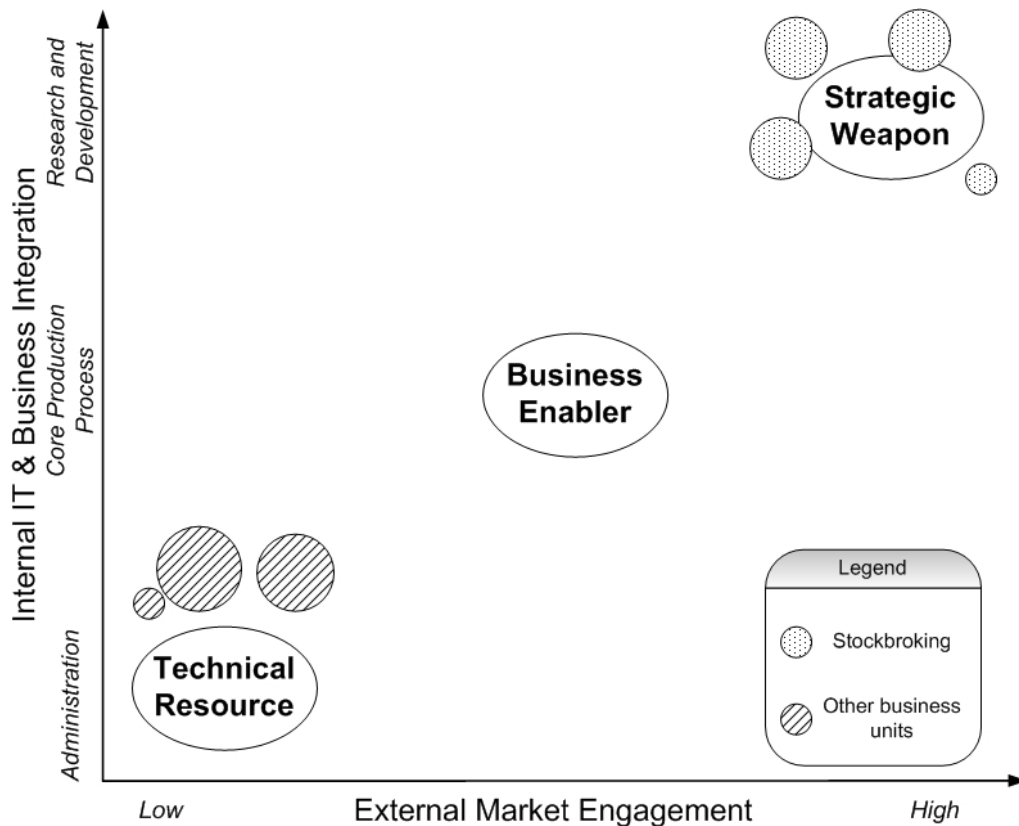


Figure 3 - Profile Patterns of a Bank's IT Projects

In this and other cases we studied, four common success factors for successful alignment include:

1. A CIO who adopted a perspective that was relevant to the organization's internal and external needs, articulated a vision, purpose, and end-state alignment for an investment that promised benefits to all stakeholders.
2. The selection of a representative, skilled cross-functional team of business and technical counterparts, mobilized by an end-state that benefited their work and the organization's.

3. A detailed project plan that “hammered out” outlined objectives, metrics, and milestones. The leader and implementing team continually referred back to the original purpose and desired end-state as the motivating touchstones. After several meetings where the *CIOs skillfully argued, dialogued, and gained consensus for a case for change*, they received funding approval.
4. A motivated and focused IT-business team that moved forward to implement the plan. While there were numerous problems to solve and ongoing meetings to schedule, the implementation realized most of the end-state vision and planned goals. Not everyone in the organization was satisfied, but the transformations delivered on their objectives and several new business initiatives have resulted in satisfied CEOs, CIOs, and major end-users.

Our framework assists organizations in deciding on which type of IT alignment they wish to adopt. However, it also provides two critical benefits in implementation. One is that the simple, pragmatic strategic “profiles” help leaders to frame a purpose, vision, and alignment end-state that defines and guides IT. A clear and compelling end-state helps stakeholder engagement and motivates the team. The second benefit is that a front-end planning diagnostic helps CIOs engage the diverse set of stakeholders comprising the team and provides steps for mobilizing consensual decision-making. Mapping and illustrating types of alignment profiles in organizations can also signal the logic and wisdom used by decision makers in determining a strategic versus technical emphasis of IT investments.

## VI. CONCLUSION

There are no quick fixes or easy solutions to IT-business alignment. Although firms have developed routines and procedures for planning and evaluating IT projects, incorporating the IT-business framework presented here will aid stakeholders in developing a clearer understanding of the goals and objectives of the project at the outset. Broadbent and Kitzis [2005] argue that the next generation of CIOs are at a crossroads and will have to choose whether they will become *chief technology mechanics* or the *new CIO leaders*. The *new CIO leaders* must, according to these authors, perform tasks and satisfy priorities in our strategic weapon profile. We argue that CIOs must be capable of involvement in *business enabler* and, in some instances, *technical resource* organizations. As a planning diagnostic, the framework provides a practical approach for planning investments that begins with the essential question of *How does IT contribute to business objectives?* The framework also combines organizational process and planning guidelines that emphasize the need to keep the end in mind as an initial design consideration. The framework offers technology leaders a focus to evaluate IT investment in the context of the organization’s goals.

Further research can develop the framework in several ways; for example: (1) Identify how to effectively lead and manage a portfolio of different IT alignments in a multi-business organization; (2) Compare IT alignment from different profile business units to describe planning criteria and best practices; and (3) Provide case studies that explain how to change IT alignment.

## REFERENCES

- Attwell, P., B. Rule. (1991) . “Survey and Other Methodologies Applied to IT Impact Research: Experiences from a Comparative Study of Business Computing.” In: Kraemer, K. L. (ed.) *The Information Systems Research Challenge: Survey Research Methods*. Boston: Harvard Business School Press.
- Barney, J. (1991) . “Firm Resources and Sustained Competitive Advantage.” *Journal of Management*. (17:1), pp. 99-120.
- Broadbent, M. and E. Kitzis (2005) . *The New CIO Leader: Setting the Agenda and Delivering Results*. Boston: Harvard Business School Press, pp. xii, 340.

- Brown, C. V. and I. Vessey. (2003) . "Managing the Next Wave of Enterprise Systems: Leveraging Lessons from ERP." *MIS Quarterly Executive*. (2:1), pp. 65-77.
- Clemons, E. K. (1991) . "Evaluation of Strategic Investments in Information Technology." *Communications of the ACM*. (34:1), pp. 22-36.
- Collins, J. (2001) . *Good to Great: Why Some Companies Make the Leap and Others Don't*. New York: Harper Business.
- Cooper, B., H. Watson, B. Wixon, and D. Goodhue. (2000), . "Data Warehousing Supports Corporate Strategy at First American Corporation.", *MIS Quarterly*. (24:4), pp. 547-567
- Daft, R. L. (2004) . *Organization Theory and Design*, Eighth Edition. Thomson South-Western, p. 624.
- D'Aveni, R. (1994) . *Hyper-Competitive Rivalries: Competing in Highly Dynamic Environments*. New York: Free Press.
- Davenport, D. H., M. Hammer, and T. J. Metsisto. (1989) . "How Executives Can Shape Their Company's Information Systems." *Harvard Business Review*. (67:2), pp. 130
- Earl, M. J. and D. Feeney. (2000). "How to Be a CEO for the Information Age." *Sloan Management Review*. (41:2), pp. 11-23.
- Feeney, D. and L. Willcocks. (1998) . "Core IS Capabilities for Exploiting Information Technology." *Sloan Management Review*, (39).
- Gibson, C. (2003) . "IT-Enabled Business Change: An Approach to Understanding and Managing Risk." *MIS Quarterly Executive*. (2:2), pp. 12
- Goodhue, D., B. Wixon and H. Watson. (2002) . "Realizing Business Benefits through CRM: Hitting the Right Target in the Right Way." *MIS Quarterly Executive*. (1:2), pp. 79-94
- Kearns, G. S. and A. L. Lederer. (2003) . "A Resource-Based View of Strategic IT Alignment: How Knowledge Sharing Creates Competitive Advantage." *Decision Sciences*. (34:1), P. 1.
- Kohli, R. and S. Devaraj. (2004) . "Realizing the Business Value of Information Technology Investments: An Organizational Process." *MIS Quarterly Executive*. (3:1), p. 6.
- Kotter, J. (1996) . *Leading Change*. Boston, MA: Harvard Business School Press.
- Luftman, J. (2003) . "Assessing IT/Business Alignment." *Information Systems Management*. (20:44), pp. 9-15.
- Luftman, J. and E. McLean. (2004) . "Key Issues for IT Executives." *MIS Quarterly Executive*. (3:2), pp. 1-18.
- McFarlan, F. W. (1984) . "Information Technology Changes the Way You Compete." *Harvard Business Review*. (62:3), pp. 98-103.
- McFarlan, F. W. (1982) . "Portfolio Approach to Information Systems." *Journal of Systems Management*. (33:1), pp. 12-19.
- Pare, G. (2002) . "Enhancing the Rigor of Qualitative Research: Application of Case Methodology to Build Theories of IT Implementation." *The Qualitative Report*. (7:4).
- Porter, M. E. (1985) . *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press, pp. xviii-557.
- Porter, M. E. (2001) . "Strategy and the Internet." *Harvard Business Review*. (77:2), pp. 62-78.

- Prewitt, E. (2004) . "How to Succeed Under Pressure: Our Third Annual Survey of More Than 500 Heads of IT Tells Us What Successful CIOs Are Doing to Meet a Host of New Challenges...and What Others Are Failing to Do." *CIO*. p. 1.
- Raghunathan, B. and T. S. Raghunathan. (1990) . "Planning Implications of the Information Systems Grid: An Empirical Investigation." *Decision Sciences*. (21:2), pp. 287-300.
- Reich, B. H. and I. Benbasat. (2000) . "Factors That Influence the Social Dimension of Alignment between Business and Information Technology Objectives." *MIS Quarterly*. (24:1), p. 81.
- Reynolds, P. and P. Yetton. (2005) . "Commonwealth Securities Limited – The Leading Australian On-line Discount Stockbroker." work in progress paper available on request from authors at [peterre@agsm.edu.au](mailto:peterre@agsm.edu.au)
- Ross, J. W. and D. F. Feeny. (1999). "The Evolving Role of the CIO." in R. M. Zmud (ed.) *Framing the Domain of IT Research: Glimpsing the Future through the Past*. Cincinnati, OH: Pinnaflex Educational Resources, Inc.
- Ross, J. W. (2003) . "Creating a Strategic IT Architecture Competency: Learning in Stages." *MIS Quarterly Executive*. (2:1), pp. 31-43. Schein, E. H. (1992) "The Role of the CEO in the Management of Change: The Case of Information Technology," in Kochan, T. A. and M. Usam (Eds.), *Transforming Organizations*. New York: Oxford University Press, pp. 81-96.
- Ware, L. C. (2003) . "What You Have to Say: A Year After Our First 'State of CIO' Survey, More Than 500 IT Leaders Tell Us They're Spending More Time on Alignment." *CIO*: p.1.
- Weill, P. and M. R. Vitale. (2002) . "What IT Infrastructure Capabilities Are Needed to Implement E-Business Models." *MIS Quarterly Executive*. (1:1), pp. 17-34.
- Weiss, J. W. and D. Anderson, Jr. (2004) . "Aligning Technology and Business Strategy: Issues and Frameworks, A Field Study of 15 Companies." Hawaiian International Conference on Systems Sciences, Hawaii, p. 10.
- Yin, R. K. (2003) . *Case Study Research: Design and Methods*, 2<sup>nd</sup> edition. Thousand Oaks, Calif: Sage, pp xvii-171.

## APPENDIX: FIELDWORK METHODOLOGY

The framework presented is the result of extensive fieldwork conducted with organizations over a three-year period. The researchers interviewed 21 IT executives and developed nine organizational case studies. Following is a brief description of the methodologies employed in this research.

Interviews: We constructed a four-step field study that included first, identifying executives in companies, some of whom we had access to and could interview with follow-up discussions, and most of whom we did not know. Second, 67 CIOs, VPs of business and technology services, and high-level project managers received surveys, resulting in 21 responses (31 percent response rate). Following Atwell and Rule (1991), the survey was quantitative and qualitative in nature, and most questions had scaled answers. The survey included questions about the firm, its approach to IT, and recent IT projects undertaken at the organization. Third, follow-up phone and face-to-face meetings with participants elaborated and captured examples. The organizations in our sample represent the following broad segments: Federal, State, and Local Government; Computing; Financial Services; Defense; Banking; University; and Manufacturing. One strength of the study was access to high-level technology executives in Fortune 500 firms and similar-sized organizations in the public and nonprofit sectors. The final step of the interview stage was to synthesize the information garnered to form a set of research propositions. We investigated these propositions during the second phase of the project by investigating nine case studies of IT projects underway at other organizations. Consistent with Yin (2003) and Pare (2002), our



theory-building approach draws on research questions defined during the prior interview phase. We selected organizations that represent the three alignment profiles in order to verify the processes and outcomes of each type. Finally, a member of our research team presented a draft of our framework to IT and business executives, whose insights and suggestions helped us verify and refine the model included in this article.

In sum, we have interviewed more than 20 IT executives and have spoken with more than 100 IT and business managers to ground our model in real organizations facing difficult IT-business alignment issues.

## ABOUT THE AUTHORS

**Kevin D. Clark** is Assistant Professor of Strategic Management at the Villanova School of Business, Villanova University. His work on top management teams of technology firms has been published in the *Academy of Management Journal*, *Organizational Dynamics*, and the *Strategic Management Society Annual Research Series*. His current research interests include social network analysis and the link between senior management and firm-level innovation.

**Alan Thorogood** is a Senior Manager at Accenture and a Postdoctoral Fellow at the Australian Graduate School of Management (AGSM), University of New South Wales, where he is the IT course leader for the MBA programs. *Butterworth-Heinemann*, the *Journal of Information Technology* and international conferences, such as EURAM, HICSS and PACIS have published his research. Alan has two decades of global industry experience with IT vendors and users. He has served as a contract programmer, sales representative, project manager, general manager and company director. His current research investigates how IT investment decisions affect IT alignment, IT project management, and IT governance.

**Joseph W. Weiss** is Professor of Management at Bentley College. He is a Senior Fulbright Program Specialist, co-chair of HICSS IT/Project Management minitrack, and past Chair of the national Academy of Management Consulting Division. He is an international consultant on change management, corporate social responsibility, and leadership development. Three of his books include *5-Phase Project Management* (with Bob Wysocki), *Business Ethics: A Stakeholder and Issues Management Approach*, 4<sup>th</sup> edition, and *Organizational Behavior & Change*, 2<sup>nd</sup> ed.

Copyright © 2006 by the Association for Information Systems. Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page. Copyright for components of this work owned by others than the Association for Information Systems must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists requires prior specific permission and/or fee. Request permission to publish from: AIS Administrative Office, P.O. Box 2712 Atlanta, GA, 30301-2712 Attn: Reprints or via e-mail from [ais@aisnet.org](mailto:ais@aisnet.org)



# Communications of the Association for Information Systems

ISSN: 1529-3181

## EDITOR-IN-CHIEF

Joey F. George  
Florida State University

## AIS SENIOR EDITORIAL BOARD

Jane Webster Vice President Publications Queen's University	Joey F. George Editor, CAIS Florida State University	Kalle Lyytinen Editor, JAIS Case Western Reserve University
Edward A. Stohr Editor-at-Large Stevens Inst. of Technology	Blake Ives Editor, Electronic Publications University of Houston	Paul Gray Founding Editor, CAIS Claremont Graduate University

## CAIS ADVISORY BOARD

Gordon Davis University of Minnesota	Ken Kraemer Univ. of Calif. at Irvine	M. Lynne Markus Bentley College	Richard Mason Southern Methodist Univ.
Jay Nunamaker University of Arizona	Henk Sol Delft University	Ralph Sprague University of Hawaii	Hugh J. Watson University of Georgia

## CAIS SENIOR EDITORS

Steve Alter U. of San Francisco	Jane Fedorowicz Bentley College	Chris Holland Manchester Bus. School	Jerry Luftman Stevens Inst. of Tech.
------------------------------------	------------------------------------	---	---

## CAIS EDITORIAL BOARD

Erran Carmel American University	Fred Davis Uof Arkansas, Fayetteville	Gurpreet Dhillon Virginia Commonwealth U	Evan Duggan U of Alabama
Ali Farhoomand University of Hong Kong	Robert L. Glass Computing Trends	Sy Goodman Ga. Inst. of Technology	Ake Gronlund University of Umea
Ruth Guthrie California State Univ.	Alan Hevner Univ. of South Florida	Juhani Iivari Univ. of Oulu	K.D. Joshi Washington St Univ.
Michel Kalika U. of Paris Dauphine	Jae-Nam Lee Korea University	Claudia Loebbecke University of Cologne	Sal March Vanderbilt University
Don McCubbrey University of Denver	Michael Myers University of Auckland	Fred Niederman St. Louis University	Shan Ling Pan Natl. U. of Singapore
Dan Power University of No. Iowa	Kelley Rainer Auburn University	Paul Tallon Boston College	Thompson Teo Natl. U. of Singapore
Craig Tyran W Washington Univ.	Upkar Varshney Georgia State Univ.	Chelley Vician Michigan Tech Univ.	Doug Vogel City Univ. of Hong Kong
Rolf Wigand U. Arkansas, Little Rock	Vance Wilson U. Wisconsin, Milwaukee	Peter Wolcott U. of Nebraska-Omaha	Ping Zhang Syracuse University

## DEPARTMENTS

Global Diffusion of the Internet. Editors: Peter Wolcott and Sy Goodman	Information Technology and Systems. Editors: Alan Hevner and Sal March
Papers in French Editor: Michel Kalika	Information Systems and Healthcare Editor: Vance Wilson

## ADMINISTRATIVE PERSONNEL

Eph McLean AIS, Executive Director Georgia State University	Reagan Ramsower Publisher, CAIS Baylor University	Chris Furner CAIS Managing Editor Florida State Univ.	Copyediting by Carlisle Publishers Services
---	---	---	--