Effective Strategic Alignment of IT: Implications for the CIO as a Member of the C-Suite

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Abstract

There is a growing focus on the need to ensure that the information technology (IT) provision within the organization is aligned with business strategy in order to create value. This has come about partly as a result of evidence that IT does not automatically contribute to the generation of value within organizations and may in fact offer little return on investment or pose a risk. As Chief Information Officers migrate to new positions where they have greater involvement with strategic organizational development and where they are more in the glare of the governance spotlight, they will need to use a broad range of business and technology frameworks and tools. This paper explores this situation and identifies a number of practical tools that can be used by leaders of all parts of an organization as they strive to produce positive and holistic strategic alignment of information technology. We consider the role that various business and IT derived approaches and tools can play in supporting stronger moves towards the strategic alignment of IT with the broader business, and a shared understanding among C-Suite executives.

Keywords: Strategic alignment of information technology, chief information office, corporate unbundling, value chain deconstruction

1. Introduction

There is a growing recognition of the need to ask serious questions about the contribution that information technology (IT) provides to the attainment of overall business value. The high level of failure to deliver IT-based systems that meet time, cost, quality, and functionality requirements is well reported in academic journals and trade publications. Even those systems that do meet these requirements may not always offer measurable levels of value to businesses that are commensurate with the costs. The IT Governance Institute (2006) notes that there is a need to move the emphasis from implementing IT solutions to a recognition that the key issue is that of IT-enabled change that generates business value. At the same time, the growing legalistic emphasis on IT corporate governance demands that Chief Information Officers (CIOs) are able to demonstrate that they have given appropriate attention to the impact of IT upon business value as seen by a variety of stakeholders. This increased emphasis is seen in legislation like Sarbanes-Oxley in the United States, but there are numerous other examples worldwide. In recognition of these issues, there has been a trend towards moving the CIO from their traditional focus on IT stewardship and implementation towards a more strategic role in the business. From this position they are better able to

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appreciate the strategic directions that the organization is undertaking and to align the technology with that direction to ensure that IT supports and enhances business value in a cost effective manner and within technical and business frameworks of governance. Given the migration of CIOs from the typically rather isolated “box” in organizational hierarchies that handle mainly IT to membership of the broader C-suite (e.g. CEO, CFO, CIO) it is important that common language and values are adopted within that suite of management. Equally important is the sharing and merging of both business and technologically-oriented processes and tools, as shown in Figure 1.

Having the CIO assume a role within the broader C-suite only adds value if all members of the C-suite are able to communicate effectively to obtain synergy from the various skills and knowledge that they possess. Using a common set of tools and language the ‘new’ CIO will be better able to persuade other C-Suite members of the value of a range of technologies and to obtain the high-level commitment to IT projects that is recognized as being a vital driver for successful implementation for such projects. The CIO may also be better able to support their senior colleagues by helping them actively use appropriate technologies to better support decision making and communication between all levels of the organization. This close working relationship should ensure that all parties within the C-suite maximize the benefits of Strategic Alignment of Information Technology (SAIT). This article describes how the CIO can combine the strategic orientation of the C-Suite with their technical orientation in order to more effectively achieve SAIT.

![Figure 1. Business and technology alignment.](image)

There is a range of relatively recently developed tools available to support the shift in the CIO focus from traditional stewardship of resources to more active and accountable engagement in value generation. For example, the ValIT™ governance-oriented framework and the complementary COBIT control framework along with Enterprise Architecture and IT Portfolio Management literature offer useful insights and approaches. In this paper we argue
that although these tools offer significant potential to assist the C-suite in their efforts to explore the contribution of IT to business value, they need to be considered as part of a broader set of approaches that are more familiar to business managers.

SAIT and its associated techniques, and their ability to enhance organizational performance have been frequently studied. The literature is replete with examples of research which report varying levels of support for information technology (IT) being used as a strategic tool. One approach taken in the literature is a resource-centered perspective which usually considers IT hardware and software a strategic resource when properly combined with other strategic resources (Oh and Pinsonneault, 2007). Further, this view assumes that the association between the scale (size, resource commitment, amount, etc.) and scope (uniqueness, type, etc.) of the IT investment are positively associated with organizational performance (Barua et al., 1995; Dehning et al., 2003).

Another view of SAIT is the contingency perspective that states that IT resources add little value unless they are planned to support a firm’s main strategic objectives. In this paper we support the contingency perspective, which is based on the belief that the greatest impact on organizational performance can be realized by utilizing IT resources to support strategic objectives, and by understanding the organization’s strategy and where IT can support it. However, there is a scarcity of literature that guides the CIO in their quest to achieve the business aspects of SAIT and, equally, the other C-suite members to appreciate the IT aspects of SAIT. This paper is an attempt to start a discussion to fill that void.

There are a number of new paradigms proposed in the literature including value webs, virtual organizations, and the digital economy. Following those new paradigms are toolkits available to assist the CIO’s attempts to achieve SAIT. However, we believe that because traditional techniques like value chain analysis are already embedded in the many organizations, SAIT tools based on those same traditional techniques are needed to bridge the space between the traditional techniques and the newer SAIT tools proposed by the academic community. In other words, SAIT tools must recognize and incorporate traditional techniques familiar to the larger C-suite audience rather than just introduce new frameworks. In this vein, we offer a model that relates the SAIT tools familiar to CIO’s and Porter’s model of generic strategies (1980) to bridge the gap between the views and experiences of CIOs and other C-suite executives.

The scale of an IT implementation does not guarantee positive organizational outcomes. In fact, the larger the project the more apt it is to fail due to increased risk (OECD 2001). Anecdotal experience by the authors supports this notion. For example, in one case known to the authors, an online analytic processing system (OLAP) was rolled out to analysts within a U.S. health maintenance organization (HMO) to allow them to do actuarial analysis of the incidence and prevalence of various diseases of the HMO members, and to set premiums. This system was a very large scope, had support of senior management and staff, and represented a substantial portion of the annual information systems budget. Still, this system was abandoned in favor of the more traditional way to perform these analyses. The users felt they simply did not need to use OLAP tools to do the analysis required and that existing tools did the necessary analysis adequately. The scope, management and initial staff support, and economic commitment to this project did not guarantee its success. The users did not perceive that the OLAP system added value to their jobs or to the organization.

The literature abounds with similar reported cases where IT not only failed to deliver value for the business but also directly led to a negative impact on business value. For example, the IT Governance Institute (2006) indicates that difficulties in implementing supply chain systems at Nike reportedly lost more than US $200 million and that “failures in IT-enabled logistics systems at MFI and Sainsbury in the UK led to multimillion-pound write-offs, profit warnings and erosion of share price”.

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It is our contention that all of these systems show signs of being implemented as technical solutions without careful consideration of broader organizational or stakeholder needs, and were abandoned or failed largely because they did not fill a strategic need or objective. The contingency perspective takes the view that IT implementations must align with strategic objectives, and thereby fill identified stakeholder needs. It is for that reason that the contingency perspective is particularly appropriate in the prevailing business environment.

1.1 The contingency perspective and measurement

While it is outside the main scope of this paper, measurement issues are critical since attempts to achieve SAIT include the need to measure process costs and outcomes. Measurement systems are some of the most difficult to design and implement. Measurement systems are important to SAIT, and must be carefully designed to avoid measuring indicators that do align with strategic goals. Two important examples of measurement issues are:

(a) It is possible to assess SAIT outcomes against any number of organizational measures. For example, instances of IT implementation have occurred where SAIT has positively impacted sales growth, but not return on investment (ROI). In other words, sales may have increased, but when you look at the ratio of investment-cost to investment-gain the ratio is smaller.

(b) Other research has looked at the impact of SAIT on return on sales (ROS) and return on assets (ROA), and found that as that SAIT has a positive effect as long as the firm is focused on externally oriented strategies (Li and Ye, 1999).

C-suite members must carefully consider which measurements are appropriate when attempting to determine if the strategic alignment of IT with business objectives provides a positive net gain to the organization. A possible reason for the mixed results of the previous research into SAIT is that they operationalize the various factors of SAIT differently and therefore cause measurement differences. Symons (2006) notes that while the measurement of the value of IT is important, it is even more important that the limitations of quantitative approaches are recognized. Among the potential areas of concern are those of knowing how to choose between Return on Investment, Net Present Value, Internal Rate of Return, Economic Value Added and so on. These approaches can also be misleading if it is not recognized that they are based on assumptions and that these assumptions have to be taken into account when considering the target numeric values that they generate. Anyone using the methods suggested in this article or elsewhere should be wary of measurement issues.

1.2 What is SAIT?

The notion of organizational “fit” has been explicited in several ways to include adaptation (personal-environmental fit), compatibility (individual-organizational fit), assimilation (organization-organization fit), and coupling (internal-external fit). “In the context of organizational research, the construct is generally understood as ‘congruence, match, agreement, or similarity between two conceptually distinct constructs’” (Oh and Pinsonneault, 2007). In this paper, we take the position that SAIT is the fit between the strategic objectives of an organization, and how the organization proposes to meet their strategic objectives using IT. The “fit” comes when the CIO is able to envision the organization, align IT implementation with the organization’s strategic objectives, and cause IT to augment the organization. Along the lines of the primary strategic orientations of firms (Porter, 1980), IT is implemented for three reasons—cost reduction, quality improvement, and revenue growth, each of which has been shown to have varying impacts on organizational performance and are discussed below.
1.3 Cost reduction

Firms can attempt to achieve market leadership by reducing cost through a number of strategies. While all firms attempt to reduce costs, costs reduction strategies are generally aligned with Porter’s strategies of cost leadership in broad markets and a low-cost focus strategy in narrow markets. These strategies can include, for example, waste reduction, lower inventories, increasing productivity, and reducing cycle times. In any cost reduction strategy, the overarching objective is to reduce costs while not sacrificing quality, with the intention of achieving or maintaining a cost-leadership position within the marketplace. IT can be leveraged in a number of ways to effectuate this strategy, including, for example, supply chain management, inventory control, or ERP systems.

1.4 Quality improvement

It is possible for a firm to gain market share by producing higher quality goods at the same or higher costs as their competitors. Using product differentiation strategies (Porter 1980), firms seek to distinguish their products from others in the marketplace, while at the same time increasing market share and maintaining marginal revenue. In the marketplace, the perception of value needs to be created, allowing for higher price and increased market share. IT can be used both ways: (a) to improve product quality through manufacturing improvements, and (b) to enhance product perception in the marketplace (e.g. CRM).

1.5 Revenue growth

In the marketplace, revenue-growth strategies focus on increased sales and profits. This approach requires using IT to create/enhance products allowing for a wider variety of product offering, and/or to enhance sales, while at the same time maintaining market share. Perhaps a revenue growth strategy is easiest to conceive in online companies like Amazon, Google or e-Bay.

1.6 SAIT and core competencies

There are many examples of organizations that have used IT to achieve revenue growth and increased performance; however this poses some important questions:
(a) At what point does an organization switch from its initial core competencies to becoming a technology company?
(b) If that switch occurs, is it usually a strategic decision, or do the organizations more often find themselves becoming technology companies without even realizing it?
(c) If an organization switches from its initial core competencies to technological competencies, what is the competitive impact on the organization, and its sustainability?
FedEx is in interesting example of this as its VP of Worldwide Services, David Edmond stated: “We are really becoming a technology company enabled by transportation” (Krause, 1999).

In the search for SAIT the switch of core competencies to IT changes an organization’s value proposition, and potentially its strategic objectives. When and how to implement IT and the effect of those decisions on organizational core competencies requires further study, but has direct bearing on the value search.

1.7 IT and business value

In this paper, we emphasize the search for SAIT using a business value approach. In line with the contingency perspective, Porter (2001) states that even when doing business online, companies need other strategic resources like inventory and warehouses to deliver customer value. The CIO must understand the value proposition and how to align IT in order to deliver
that value, making business value the driver in any search for SAIT. Therefore, we propose that the value-based approaches are most appropriate.

1.8 Aligning IT

In order to align IT implementation, the CIO must understand the organization and industry in which it operates, setting the stage for a review of core strategic competencies. A successful IT implementation must take into account the general needs of the industry as well as the specific needs and characteristics of the organization. To perform this alignment, it is imperative that the CIO understand the strategic direction of the organization. While there are many techniques to achieve SAIT through an organizational search for IT-driven value, this paper proposes two that we believe will facilitate the achievement of this alignment, while at the same time work toward discovering the IT value proposition within a context of techniques understood by the broader C-suite.

At the core of the IT value search is the thorough examination of the organization, though what we call Value Search Models. For example, Corporate Unbundling, Value Chain Deconstruction, Comparative SWOT Analysis, and Competitive Forces Explication provide tools for the CIO to discover ways to implement IT for competitive advantage and to explain those advantages to the C-suite; we will discuss these tools below. Analytical work carried out using these models will provide information to allow the CIO to understand where IT can be leveraged to enhance organizational performance. Table 1 summarizes the value search modeling tools.

<table>
<thead>
<tr>
<th>Value Search Model</th>
<th>Primary Strategic Focus</th>
<th>Porter’s Generic Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate unbundling</td>
<td>Cost reduction; quality improvement</td>
<td>Cost leadership</td>
</tr>
<tr>
<td>Value chain deconstruction</td>
<td>Cost reduction; quality improvement</td>
<td>Cost leadership</td>
</tr>
<tr>
<td>Competitive SWOT analysis</td>
<td>Revenue growth</td>
<td>Product differentiation</td>
</tr>
<tr>
<td>Competitive forces</td>
<td>Revenue growth</td>
<td>Product differentiation</td>
</tr>
</tbody>
</table>

2. Value Search Models

Analysis of an organization using the Value Search Models discussed below explicates foundational information about who the organization is, what they do, and their competition. In other words, Value Search Models provide an understanding of the organization in its competitive context by using unbundling and modeling.

The interjection of IT into businesses has been said to cause a morphing of the traditional enterprises into an e-business. We posit that today virtually all businesses use technology and can be regarded as being e-enabled. There are few organizations do not have at least one desktop PC, or use e-mail, or have an Internet presence, or use the World Wide Web to interact with their bank or a supplier – virtually all organization use technology at some level. Therefore, today, the “E” seems passé, with IT being incorporated into virtually all businesses at some level. It is for these reasons that we do not use the moniker “e-business” in this paper, but refer to all businesses as “organizations.” The extension of that thinking is that all organizations can benefit from using Value Search Models.

The information gained from the Value Search Models is used to drive IT implementation decisions so those implementations can support the organization’s value propositions, as well as to assist the CIO in their explication of IT value to those in the C-suite. The goal is to
delineate recommendations for IT features that are necessary to support strategic objectives which underlie the organizations value propositions. The recommendations must be specific enough to both support organizational strategy and at the same time allow the IT engineer to translate them into the necessary hardware/software configurations. Below we will present Value Search Models (i.e. corporate unbundling, value chain deconstruction, competitive SWOT analyses, and competitive forces) and we provide guidance in attaining SAIT in a way understandable to those in the C-suite. Using these types of models will facilitate successful explanation of IT project business value to C-suite executives.

The first two Value Search Models presented—corporate unbundling and value chain deconstruction—focus on Porter’s strategic dimension of low cost generated by IT’s ability to examine internal costs and recommend cost reduction strategies to C-suite executives.

2.1 Low cost strategies

2.1.1 Corporate unbundling

The topics of unbundling of the corporation and the impact of the Internet on organizations have often been discussed by many researchers (e.g. Hagel and Singer, 1999, Porter, 2001). Hagel and Singer (1999) proposed interaction costs, shown in Figure 2, as an explanation for organizational reorganization, and choosing whether to perform an activity internally, or to outsource it. Interaction costs are defined as “the money and time that are expended whenever people and companies exchange goods, services, and ideas.” (p.134) Interaction costs occur in any transaction, whether it is business-to-business or consumer-to-business, and can take any number of forms, including meetings, phone calls, reports, and memos to name a few. It is important to note that interaction costs determine, either directly or indirectly, the way organizations operate, the form they take, and which processes they keep in-house. This knowledge should have direct impact on where IT is implemented, and how it can best benefit the organization.

<table>
<thead>
<tr>
<th>What are interaction costs?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Costs associated with business transactions.</td>
</tr>
<tr>
<td>(b) Occurs in business-to-business as well as consumer-to-business transactions.</td>
</tr>
<tr>
<td>(c) Includes meetings, phone calls, reports, memos, and any other hard or soft costs of running a business.</td>
</tr>
<tr>
<td>(d) Determine how organizations operate and the form they take.</td>
</tr>
</tbody>
</table>

Figure 2. Interaction costs.

As shown in Figure 3, following on interaction cost theory, dividing the organization into separate, but interacting functions can assist the CIO in understanding the most effective places to implement IT solutions. Corporate unbundling theory states that most organizations (corporations) are composed of three intertwined businesses (major processes) – Customer Relationship Management, Product Innovation, and Infrastructure Processes. In effect, most organizations are composed of these three businesses under one umbrella organization. Interaction costs determine how the organization will function, which parts of each major process it keeps in house, and the form the organization will take. Understanding how this unbundling affects an organization can assist the CIO in their quest for implementing IT for competitive advantage.
Understanding the three functions of the organization will assist the CIO in effectively defining the organization and identifying where IT can provide the most effective strategic support. The customer-relationship-management portion of the organization is responsible for finding customers, and building and maintaining relationships with them. Obviously, this includes the sales and marketing functions, and supports the organization through the marketing, sale, and service cycles. In shipping organizations such as FedEx, marketing people attempt to attract large corporate customers, maintain relationships with them, while service staff will deal with customer problems to bring about resolutions that maintain a positive customer relationship. It is obvious that these staffs are in different organizational units (departments) but it may not be so obvious that there is a strong interrelationship. Understanding this interrelationship is key to the CIO successfully recommending IT to support the CRM business of the organization. This broader approach may help reveal the networked social linkages between parts of the organization that may not have been recognized in an organizational structure that arises from a largely IT-biased perspective.

The purpose of Product Innovation portion of the organization is to “conceive of attractive new products and services.” (Hagel and Singer, 1999) In the shipping industry, as represented by FedEx, new services and products were key to changing FedEx from a shipping company, to what it now largely perceived as a technology company supported by shipping. The notions of supply chain management and logistics management were created through product innovation at companies like FedEx. However, it is clear there is an interrelationship between the product innovation and CRM processes and that new product need the CRM process to make it to market, garner market share, and service and maintain customers. This interrelationship is a key point that needs to be understood by the CIO, and IT implications need to be discussed with other C-suite members.

Infrastructure processes within the organization manage and build operations facilities. This includes routine, low- and high-volume repetitive operations within the organization. Everything that it takes to make an organization run is included in the infrastructure function, and it can be said that it is the “engine” of the organization and the “interface” between the other functions. From the CIO’s standpoint the infrastructure function represents the core business activities, and perhaps the largest expenditures. In the FedEx example, the infrastructure function handles logistics for all shipping, while at the same time building new branches, maintaining IT, and providing all back office transactional processes.

2.1.1.1 Unbundling, interaction costs and the CIO

The CIO is challenged with how to implement technology to best support their organization. By viewing the organization unbundled along the lines described above, the
CIO can identify *interaction costs* in an attempt to decide which processes to keep in house and which to outsource, and to understand which IT solutions bring the greatest benefit. Quantifying interaction and transaction cost, and comparing them across the options of performing a process in house versus out-sourcing is relatively simple. However, unbundling the corporation and looking for ways to decrease costs or increase quality is a bit more complex. Suppose a CIO is looking over three Enterprise Resource Management Solutions which are: (a) believed to bring about varying cost savings to the organization, (b) each with varying level of support for each unbundled function, and (c) each process contributing a varying amount to the value proposition being supported IT implementation – how would the CIO go about selecting a solution using *Corporate Unbundling*? The CIO would proceed as follows:

(a) Identify the organizational value proposition being supported.

(b) Identify systems (options) to support the value proposition.

It is incumbent on the CIO to determine the amount each option supports the unbundled corporation, and from that develop a metric showing how much each option supports the organizational value proposition (e.g. Table 2). While unbundling does not give the entire picture in selecting systems, it could be used as one tool to estimate the value of an IT implementation.

<table>
<thead>
<tr>
<th>Option</th>
<th>CRM</th>
<th>Product Innovation</th>
<th>Infrastructure</th>
<th>Overall value proposition supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>40%</td>
<td>15%</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>25%</td>
<td>65%</td>
<td>10%</td>
<td>70%</td>
</tr>
</tbody>
</table>

2.1.2 *Value chain deconstruction*

Another useful technique the CIO could use in their search for opportunities to increase value is value-chain deconstruction. Deconstruction is based on transaction cost theory, and fundamentally states that “industries get unbundled and reconfigured as a result of two main developments. These are (a) the separation of the economics of things (physical goods) and the economics of information (digital goods) and (b) the blow-up of the trade-off between richness and reach.” (Jelassi, 2005). The first point (separation of economics) means that physical goods and digital goods possess different economic qualities, for example, the ease in which they can be stored, copied or ownership can be transferred; this affects business processes and costs.

As an example of the separation of economics, assume you are manufacturing office furniture. At a minimum, your organization would have to be concerned about manufacturing facilities, warehouse space, logistical support to ship to your customers, and marketing staff. Compare that to a firm developing digital products like software. The firm developing software can use traditional office facilities, may not need any warehouse space, logistical support may be handled through the Internet, and marketing probably happens online. These factors in the software company lower transaction costs and necessitate that the CIO look at the value chain differently.

The “blow-up of the trade-off between richness and reach” states that in the digital environment in which we live in today, the trade-off between richness and reach have changed due to the digitalization of customer interactions and business processes, and that the
resultant costs and benefits have changed. In the pre-digitalization era marketing was predominantly focused on traditional media channels (e.g. TV, radio, print) while today marketing can be much more fluid through digital channels (e.g. World Wide Web, Email). “The trade-off between richness and reach, then, not only governs the old economics of information but also is fundamental to a whole set of premises about how the business world works.” (Evans and Wurster, 1997). The richness/reach discussion now centers on things like available bandwidth, server speed, and similar topics. These concepts can be extended through the value chain, and the value chain can be deconstructed to locate opportunities to reduce costs or improve quality through IT implementation.

In early work on value chain deconstruction, it was proposed that organizations would deconstruct and perhaps put some of their business functions online. Following our proposition that all organizations are digital to some level, we offer that deconstruction can be used as a way to understand the IT needs of an organization, not just as a way to determine which functions are made available online.

Value-chain modeling can be thought of as an attempt to understand how an organization works – how the constituent components add value to enable product and service creation, shown as in Figure 4 (Porter, 1980). These are not organizational departments, but rather functions within the organization that add value to its products. Simply stated, the value chain model identifies the major sets of value creating activities within an organization without regard for departmental boundaries. Since the value chain relates to and exposes value-creation activities, the technique is often used to establish the foundation for firm-level strategic planning. In order to adequately create the value-chain model and to do firm-level, value-chain-based strategic analysis, one must obtain a considerable amount of information about the organization. The value chain can be used to identify business processes for process improvement or innovation, and value chain deconstruction will yield information that will help align the parts and subparts of the value chain with the organizational strategic objectives and IT resources.

<table>
<thead>
<tr>
<th>Support activities</th>
<th>Firm infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human resources</td>
</tr>
<tr>
<td></td>
<td>Technology development</td>
</tr>
<tr>
<td></td>
<td>Procurement</td>
</tr>
<tr>
<td>Primary activities</td>
<td>A1 Inbound logistics</td>
</tr>
<tr>
<td></td>
<td>A2 Operations</td>
</tr>
<tr>
<td></td>
<td>A3 Outbound logistics</td>
</tr>
<tr>
<td></td>
<td>A4 Sales and marketing</td>
</tr>
<tr>
<td></td>
<td>A5 Service</td>
</tr>
</tbody>
</table>

Figure 4. Generic value chain (Porter, 1980).

The CIO can use the organization’s value-chain and apply the theories discussed above in their search for value through IT. By looking for ways to reduce cost or improve quality the CIO can add to the bottom line of the organization. The value chain can be deconstructed into disaggregated parts that can be supported by IT. By taking the organizational value chain, the CIO can parse it into smaller organizational units that provide value, and then look across those units for opportunities to implement IT.

2.1.2.1 Deconstructing the value chain

From the vantage point of this article, deconstructing the value chain means to find IT-mediated value by taking the organizational value chain and identifying places where IT can either reduce costs or increase quality. The CIO would proceed as follows:
• Identify the organizational value proposition being supported by the value chain.
• Obtain agreement on the current value chain among the C-Suite executives and possibly below.
• Analyze the value chain, and overlay IT options (e.g., 1, 2, and 3 in Table 3) on the value chain looking for opportunities to enhance the organization.
• Develop a map of which options give greater support to which value chain activities and the overall value proposition.

Table 3. Deconstruction and value support.

<table>
<thead>
<tr>
<th>Option</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>Overall value proposition supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>40%</td>
<td>15%</td>
<td>33%</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>2</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>23%</td>
<td>42%</td>
<td>55%</td>
</tr>
<tr>
<td>3</td>
<td>25%</td>
<td>65%</td>
<td>10%</td>
<td>42%</td>
<td>11%</td>
<td>60%</td>
</tr>
</tbody>
</table>

A1-A5 refer to the value chain activities, for example see the generic value chain in Figure 4.

2.2 Product differentiation strategies

Following Porter’s (1980) model, corporate unbundling, and value chain deconstruction focus on internal efficiencies that enable low cost strategies. Competitive SWOT analyses and competitive forces models lead to considerations of environmental scanning to determine opportunities to introduce products to markets. Competitive SWOT analyses and competitive forces models focus on revenue growth by differentiating the organization’s product. While all value search models reflect a cost reduction emphasis, the primary focus of competitive SWOT analyses and competitive forces models is revenue growth through unique products.

Competitive SWOT analyses emphasize environmental scanning and discovering opportunities in the environment that may require refining existing products to make those products unique, or developing new products for the markets. The main strategic goal is to identify market niches where unique, most often superior, products can be sold at higher than average prices, leading to revenue growth. In these cases, the primary function is to discover unfulfilled market needs (opportunities), and competitive products (threats), and match these with the organization’s abilities to produce that product (strengths) and the organization’s deficits (weaknesses).

Competitive forces analysis (Porter, 1980) analyzes five major competitive forces that affect industry competition. Those forces are: the threat of new entrants, bargaining power of customers, bargaining power of suppliers, the threat of substitute products, and the jockeying for position among current firms in the industry. In these cases, the primary function is to analyze the firm vis-à-vis competitors in the organization’s current industry or, perhaps, an analysis of potential, attractive industries.

2.2.1 Competitive SWOT analyses and the CIO role in environmental scanning

In competitive SWOT analyses and competitive forces explication the CIO is role is to:
(a) Assist in environmental scanning to identify markets where unique products can be offered (opportunities).
(b) Identify competitor’s products that address the same customer need (threats).
(c) Identify internal capabilities to produce that product (strengths).
(d) Identify internal barriers to produce that product (weaknesses).
(e) Analyze the current competitive structure of the industry.

In summary, the CIO needs to develop data supporting the various levels of the organization’s value proposition being supported by the IT implementation. Then the CIO will be able to explain the value of IT implementation to their colleagues in the C-suite.

3. Conclusion

Above we have described ways in which the CIO could use tools generally known to those in the C-suite to explain the value of IT implementations. It is important that the other executives are able to comprehend the business value of IT implementation, and know whether the implementation will reduce cost, improve quality, grow revenue through product innovation, new product introduction, or any combination of reasons. As pressure increasingly falls upon CIO’s to ensure that IT plays a positive and accountable role in meeting the immediate needs of organizations and contributes to long-term value creation there is a need for approaches and tools that support CIO’s in this endeavor. Although there are new tools to assist in the attainment of SAIT being developed in the IT sector, it is important that existing business tools used for strategic planning are not abandoned. Business leaders need to work in familiar territory when they consider value chains and strategy and we argue that it may be easier for the CIO to adapt to the prevailing languages in the C-suite so that synergies can be obtained through the use of maximally shared understanding. This is not to suggest that the newer tools and frameworks do not have a place. Clearly the CIO needs to translate business strategies into practical IT-implemented solutions and the newer tools will support this. Alignment can most successfully be achieved by synergistic activity within the broad C-suite using tools that are well proven as ways of exploring business value followed by translation of those strategies into IT-based action using other tools. Corporate unbundling, Value Chain Deconstruction, Competitive SWOT Analyses, and Competitive Forces models supported by appropriately well-defined metrics, would appear to be key vehicles to support such an approach. Corporate unbundling and Value Chain Deconstruction focus on low cost strategies, while Competitive SWOT Analysis and Competitive Forces Explication focus on product differentiation strategies.

In closing, it is important to reflect on the point made earlier regarding organizational conversion from its original core competencies to becoming a technology company. FedEx realizes that it has converted from being a logistics company to a technology company supported by logistics. The impact of that realization was undoubtedly the realignment of resources, and the concomitant strategic refocusing to support that realignment. However there is not clear evidence that the FedEx conversion occurred as a strategic initiative, but it appears that FedEx has experienced that conversion as a result of market forces – they had the “we woke up one day and discovered we were a technology company” experience, rather than a carefully planned conversion. Conversion, if strategically planned, should lead to closer alignment between business strategy and resource allocation, something that will enhance success in the marketplace. Using a combination of the business and IT tools suggested in this paper will facilitate synergistic amplification of both business and technology core competencies thus maximizing target value propositions. It is clear that IT has to be aligned with the strategic goals of the business to ensure that both value and compliance are achieved to generate benefits for all stakeholders. The changing role of the CIO needs to be recognized as an opportunity for their unique skills and understanding of a range of approaches to assessing the value of IT to be complemented by the skills of the existing C-suite.
References