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AIMING AT A MOVING TARGET: IT ALIGNMENT IN TOY COMPANIES

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Abstract

For global companies that compete in high-velocity industries, business strategies and initiatives change rapidly, and thus the CIO struggles to keep the IT organization aligned with a moving target. In this paper we report on research-in-progress that focuses on how the CIO attempts to meet this challenge. Specifically, we are conducting case studies to closely examine how toy industry CIOs develop their IT organizations' assets, competencies, and dynamic capabilities in alignment with their companies' evolving strategy and business priorities (which constitute the "moving target"). We have chosen to study toy industry CIOs, because their companies compete in a global, high-velocity environment, yet this industry has been largely overlooked by the information systems research community. Early findings reveal that four IT application areas are seen as holding strong promise: supply chain management, knowledge management, data mining, and eCommerce, and that toy CIO's are attempting to both cope with and capitalize on the current financial crisis by more aggressively pursuing offshore outsourcing than heretofore. We conclude with a discussion of next steps as the study proceeds.

Keywords: IT alignment, resource based view, dynamic capabilities, CIO, leadership

1.   INTRODUCTION

Strategic IT alignment is both a goal and a process (Reich and Benbasat, 2000; Sabherwal and Chan, 2001). The process is not linear, since the IT organization has a dual alignment mission: support existing business strategy (strategy drives IT) and support new technology-enabled initiatives (IT drives strategy). In global firms, the CIO oversees an IT organization charged with delivering timely access to high quality information for visibility across globally distributed business processes, as well as providing access to tools that help employees work alone and with each other and their business partners. In such a global context, strategic IT alignment is a challenging task since the enabling information technologies and methodologies continue to evolve and change, and cultural and structural aspects of work in other countries add another dimension of complexity. For those global companies that compete in high-velocity industries, business strategies and initiatives change rapidly. Thus, in companies competing in global high velocity industries, the CIO struggles to keep the IT organization aligned with a moving target.

We report here on research-in-progress that focuses on how the CIO attempts to meet this challenge of aligning with a moving target. Specifically, we will conduct case studies to closely examine how toy industry CIOs develop their IT organizations' assets, competencies, and dynamic capabilities in alignment with their companies' evolving strategy and business priorities (the "moving target"). We have chosen to study toy industry CIOs, because their companies compete in a global, high-velocity environment, yet this industry has been largely overlooked by the information systems research community.

Many toy companies operate on a global scale, with most production off-shore and with a need for tight cross-functional and cross-boundary coordination thanks to highly seasonal demand, changing fads, and new pressure from competitors from previously separate industries such as video games and entertainment. Several factors, including digital convergence (of video games, computers, television, movies, and playthings), and the Internet as an increasingly important channel for electronic commerce and platform for social networks, have placed increasing pressures on toy companies as this industry shifts from a period of relatively stability to one characterized by high uncertainty and turbulence. As we will discuss below, this industry is undergoing a significant transformation as new media capture children's limited attention and parents' limited budgets; new selling channels threaten traditional ones; children's play patterns change; and heightened safety concerns put pressure on toy makers to bolster quality. The complexity of operations and competitive, financial, societal and regulatory pressures that toy companies face around the world give rise to a heightened need for effective IT tools and high quality information, which in turn places great pressure on toy industry CIOs to keep a sharp focus on the moving target, while investing in new IT assets, improved IT competencies, and dynamic IT capabilities.

In this paper we describe our grounded-theory research method, then review the theoretical foundations in prior research that are guiding our grounded-theory investigation at this stage of our study: strategic IT alignment, resource theory, and the dynamic capabilities perspective (recognizing as well that in grounded-theory research, investigators remain open to competing theories and theoretical extensions as the data suggest new connections and interpretations). Following this, we present early findings, including challenges facing the global toy industry and toy companies' IT organizations. We discuss application domains in which investments in state-of-the art IT assets and competencies are likely to yield value in helping toy companies cope with environmental turbulence and uncertainty, describe next steps, and close with the questions we intend to pursue as this research continues.

2.   RESEARCH METHOD

We have started one case study at a large global toy company. Case study research is useful for investigating "how" and "why" questions such as how the CIO oversees the development of IT assets, competencies, and dynamic capabilities, while aiming at the moving alignment "target." Within the spirit of grounded theory research, we are cautious to ensure we are not constrained by preconceived ideas or

frameworks (Strauss and Corbin, 1998). Theories of strategic alignment, management of resources and dynamic capabilities (see below) serve as sensitizing devices in the early phases of this study. In the constant comparative analysis method, data in one collection round are compared with data collected at other times. As this analytic and interpretive work proceeds, we will remain open to the possibility that other theories (or extensions to existing theory) might offer a better fit to the data we gather. We seek first to *identify* particular assets, competencies, and dynamic capabilities that toy industry CIOs deem especially important to develop, in light of current priorities. Secondly, we will study the *processes* through which the CIO directs and influences the development of these assets, competencies, and capabilities. Thirdly, we hope to identify the *challenges* the CIO experiences in undertaking these tasks while attempting to aim at the "moving target" of strategic alignment. Lastly, we hope to identify *profiles* of more and less successful processes and managerial tactics employed. This last research goal aims to move our findings beyond the lists of isolated factors ("senior management support," "strong leadership," etc. that prevail in many prior studies of strategic IT alignment), to patterns of effective behavior.

We have reviewed scholarly papers about the toy industry (such as Johnson, 2001 and Wong and Johansen, 2005) and trade reports (from sources such as the Toy Industry Association and Hong Kong Trade Development Council). A member of the research team attended the annual Toy Industry Fair in New York City in February 2009 and conducted informal interviews with representatives from toy companies and providers of ancillary services (such as toy safety and certification services). A member of the team invited several toy industry executives to speak to students in an MBA elective class (*Oversight of Global IT-Enabled Business Processes*, which in spring 2009 focused on the toy industry).

For each case, data are being gathered by means of site visits, semi-structured interviews, examination of company internal documents, and public-source information (such as annual reports, announcements, and news accounts), allowing for both a rich description of the phenomenon and triangulation of findings across multiple sources and types of data. Interviews are being conducted with a toy company CIO and up to ten other managers, representing a range of technical (e.g., IT infrastructure, systems development) and business (e.g., marketing, operations) functions. Interviews explore the following:

- Overview of IT governance structures and processes (such as planning and budgeting)
- The CIO's and other managers' views regarding the current mix of IT assets, IT competencies, and dynamic IT capabilities, and their opinions as to improvements needed at each company.
- Specific tactics the CIO employs to acquire, develop, maintain and oversee IT assets, competencies, and dynamic capabilities.
- Issues, concerns, and challenges in developing assets, competencies, and dynamic capabilities

Our aim is to gain a holistic understanding of how specific processes and tactics affect the development and maintenance of IT assets, IT competencies, and dynamic IT capabilities, and to uncover other issues in achieving strategic IT alignment. All interviews will be recorded and transcribed. Our analytic approach combines inductive and deductive coding and thematic development, allowing us to move from the findings in specific cases to more general conclusions (Schwandt, 2001). To generate themes inductively we follow a multi-phased approach that is influenced by Stake (1995). First, we review transcripts to ensure accuracy and make contextual notes to highlight early findings. Second, we begin factual coding to capture key events and facts, such as IS costs, major deadlines and milestones. Third, comparative coding uncovers findings that fit or seem inconsistent when compared to themes generated in earlier rounds. Fourth, open coding indentifies new, unexpected or unusual themes. Finally, we examine the relationships among themes to uncover and interpret the deeper meaning of events, actions, and viewpoints identified in the earlier coding phases. Our study findings should generalize to IT organizations in other globally distributed companies that compete in industries characterized by significant environmental uncertainty and turbulence (i.e., high velocity).

3.   THEORETICAL FOUNDATIONS

While IS researchers and practitioners agree that IT organizations can deliver strong business value by delivering well conceived and managed information systems and tools, many IT organizations fall short of delivering the expected value. One paper opined: "Increasingly, even at global companies known for their competitive and technical savvy, the gap between emerging strategic direction and IT's ability to support it is significant and debilitating." (Prahalad and Krishnan, 2002, p. 24). Some observers blame weak IS leadership (Basu, et al., 2002) or a lack of CIO business competence (Teo and King, 1997). Others believe that expectations for the CIO job have become unrealistic: "The CIO is expected to combine IS technical skills with an in-depth understanding of the organization across all functions from operational to strategic" (Karahanna and Watson, 2006, p. 171; see also Bassellier and Benbasat, 2004). Jose Ruggero, a Gartner Group executive, put it this way: "Today and tomorrow's CIO must lead like a CEO, analyze like a CFO, and execute like a COO. It's the hardest job in a large organization."

The CIO is responsible for marshaling the organization's IT resources (including its tangible and intangible assets, competencies, and dynamic capabilities; see below), and aligning these with strategic business priorities, even as those priorities change (sometimes due to business challenges and sometimes due to IT-related opportunities). Prior studies propose that strategic IT alignment (defined as the fit of business and IT strategic priorities, processes, and structures) leads to improved business performance (Segars and Grover, 1998; Henderson and Venkatraman, 1999; Sabherwal and Chan, 2001; Bergeron, Raymond and Rivard, 2004; Melville, Kraemer and Gurbaxani, 2004) as well as more cost-effective future IT investments (Byrd, Lewis, and Bryan, 2005). Many MIS studies have identified *factors* associated with effective strategic IT alignment, including shared domain knowledge (Chan, Sabherwal and Thatcher, 2006; Reich and Benbasat, 2000, a strong working relationship between business leaders and IT leaders (Luftman and Brier, 1999), clear goals (Cragg et al, 2002), and aligned reporting relationships and incentive structures (Agarwal and Sambamurthy, 2002). Of the studies that have examined *processes* associated with strategic IT alignment, the emphasis has been on IT planning (Brown and Magill, 1994; Segars and Grover, 1999; Wang and Tai, 2003). Still, one observer finds that "the mechanisms through which organizations achieve repeated and sustained value through IT have received scant attention (Peppard and Ward, 2004, p. 167; see also Peppard, 2007). An extensive review of the strategic IT alignment literature (Baker and Jones, 2008) similarly finds that few studies have closely examined the processes through which CIOs achieve strategic alignment, especially in businesses competing in high-velocity conditions. This is a gap which we hope our case studies will address. We are especially interested in exploring the processes through which the CIO oversees and influences the development of valuable IT assets, competencies, and dynamic capabilities, which are described next.

The resource based view and its extension, the theory of dynamic capabilities, originated in the strategy studies branch of management research and has also been investigated in prior IS research. Among senior executives' most important tasks is the "continuous development, alignment, and reconfiguration of firm-specific *assets*" (Augier and Teece, 2009, p. 415). The resource based view initially proposed that organizations that possess valuable tangible assets (such as cash or land) and valuable intangible assets (such as a patent, well known brand or customer list) will have advantages over competitors, particularly to the extent that these assets (resources) are rare and difficult to imitate or substitute (Barney, 1991). Subsequent research found that valuable process *competencies* (such as production know-how, customer relationship management, and investment management) are also resources that (if rare, hard to imitate and non-substitutable) can confer competitive advantage (Prahalad and Hamel, 1990). Competencies, which combine technical, human, and other resources, are more potent than simple assets, because they are harder for competitors to disentangle and imitate; however, they are also harder to successfully manage. *Dynamic capabilities* -- which adapt to fit changing conditions -- are purportedly even more valuable than competencies. Dynamic capabilities are defined as the "organizational and strategic routines by

which managers alter their resource base ... to generate new value-creating strategies" (Eisenhardt and Martin, 2000; see also Teece, Pisano and Shuen, 1997; Zahra and George, 2002; Daniel and Wilson, 2003; Banker, et al., 2006). Examples of dynamic capabilities are new product development, strategic decision-making, and "alliancing" (Eisenhardt and Martin, 2000). Dynamic capabilities evolve to fit changing business, social, and/or technical conditions. It has been proposed that dynamic capabilities do not directly confer advantage, but rather do so indirectly through the unique constellations of resources (assets, skills, competencies) that they harness (Eisenhardt and Martin, 2000). Since competencies and dynamic capabilities can be imitated (albeit with some difficulty, as discussed above), firms succeed in volatile markets only by continuously reconfiguring resources. "Where does the potential for long-term competitive advantage lie? It lies in using dynamic capabilities sooner, more astutely, or more fortuitously than the competition to create resource configurations that have that (temporary) advantage. … The reality is that competitive advantage is often short term." (Eisenhardt and Martin, 2000, p. 1117).

IT assets include data, software applications, software patents and other tangible or intangible assets. *IT competencies* include skills in software development, data base design, network architecture, and so on. *Dynamic IT capabilities* combine IT assets and competencies, and may also incorporate business assets and competencies (Karimi, Somers and Bhattacherjee, 2007). Some examples of dynamic IT capabilities -- systems development, IT planning, and vendor management -- parallel the dynamic business capabilities noted above (new product development, strategic decision making and alliancing). A higher-order dynamic capability – such as effective IT management -- may combine multiple lower-order competencies and dynamic capabilities (such as relationship management or IT planning). Studies find that the highest-order dynamic IT capability of "IT management" contributes to organizational performance (Mata and Barney, 1995; Bharadwaj, 2000), but they leave open the question of what specific processes are employed to achieve this, as well as the question of the relative contribution of various lower-order dynamic IT capabilities, assets, and competencies. Therefore, further research is needed to uncover effective steps that CIOs can take to develop and sustain IT assets, IT competencies, and dynamic IT capabilities (Piccoli and Ives, 2005; Newkirk, Lederer, and Johnson, 2008), especially case research that can examine these questions in specific competitive and social contexts.

In an extensive review of IS studies, Wade and Hulland (2004) identified eight valuable dynamic IT capabilities, in three broad categories: Outside-In, Spanning, and Inside-Out. They proposed that some dynamic IT capabilities involve purely human competencies (such as external relationship management), some utilize both human and technical assets and competencies (such as IS development), and some involve purely technical assets and competencies (such as IS infrastructure). *Inside-Out capabilities* are the core IS capabilities typically under the purview of the CIO, reflecting the need to ensure that members of the IT organization have the skills, tools and platforms needed to carry out their tasks effectively and achieve the desired ends. A well designed IT infrastructure is a platform that constitutes a vital resource (Weill, Subramani, and Broadbent, 2002; Sambamurthy, Bharadwaj, and Grover, 2003; Mitra, 2005) that can be leveraged in various IT capabilities (although on its own, the infrastructure does not provide a direct competitive advantage, per Bhatt and Grover, 2005). Inside-out capabilities also interact with both outside-in and spanning capabilities (see below) in that they are subject to rapid business and technical change, which adds pressure and cost. For example, an IT organization may have an ongoing need for competence in maintaining legacy systems on aging platforms, while also needing to develop competencies and capabilities for working with new platforms and approaches, such as a service-oriented architecture. Many inside-out capabilities are likely to be necessary but insufficient to strategic success.

Outside-In capabilities refer to an IT organization's abilities to partner well with vendors and to respond to market needs. This latter aspect, responsiveness (or "agility") is particularly challenging because it requires IT organizations to quickly shift focus and mobilize resources in ways that complement business units' efforts to be agile (defined by van Oosterhout, Waarts, and van Hillergsberg, 2006, p. 132, as "the ability to swiftly and easily change businesses and business processes beyond the normal level of

flexibility to effectively manage unpredictable external and internal changes."). According to Overby, Bharadwaj and Sambamurthy (2006), a flexible IT architecture and an options-based IT planning and investment process are two important dynamic IT capabilities that support enterprise agility, which they define (p. 120) as "the ability of firms to sense environmental change and respond readily."

Spanning capabilities address the IT organization's relationships with its internal customers and their business requirements. Effective IT planning is a vital capability that the CIO needs to build, and has been the subject of many studies (e.g., Lederer and Sethi, 1996; Segars and Grover, 1998 and 1999). The spanning capabilities of planning and internal relationship management are challenging to develop and maintain. One important activity in support of this capability is frequent CEO-CIO communication, which promotes mutual understanding (Johnson and Lederer, 2005). However, while IS leaders and non-IS business leaders may share a similar *vision* for the role of IT, they often differ on specific operational priorities, levels of involvement, and commitment (Burns and Szeto, 2000; Drury, 2005). Also, rapid business and technical changes affect spanning activities, as follows: "The planner must [plan] rapidly … but doing so risks compromising [the plan's] fit to the organization and therefore reduces its chances of implementation. The planner must thus plan rapidly enough to produce the plan quickly, but carefully enough to produce a relevant one." (Lederer and Sethi, 1996, p. 35). Ideally, planning takes full consideration of both business and technical developments; that is, business developments drive IT priorities and IT developments can drive business priorities, since emerging technologies can sometimes "enable new, superior business strategies" (Feeny and Willcocks, 1998, p. 10).

According to Wade and Hulland (2004, p. 123) Outside-In and Spanning capabilities are more critical to both the near-term success of the IS organization and the broader organization's ultimate long-term success than are Inside-Out capabilities, which are necessary but not sufficient for success. Applying this lens to the toy industry, we propose that one or more types of dynamic IT capabilities are likely to be useful (and perhaps essential). For instance, changing play patterns might require a careful analysis of market responsiveness (outside-in), whereas safety and regulatory issues might give rise to new ways of capturing IT requirements (IS development: Inside-out) as well as negotiating with suppliers and partners (External relationship management: Outside-in). Through this study, we seek to identify specific IT assets, IT competencies and dynamic IT capabilities that are needed in global toy companies. We also seek to investigate the relationships among these assets, competencies and dynamic capabilities, and the processes by which the CIO oversees and influences their development.

4. EARLY FINDINGS

We next provide an overview of the industry and high-priority IT application domains for toy companies.

4.1 Toy Industry Overview

The $78 billion global toy industry is dominated by two large US-based companies, Mattel and Hasbro, accounting for nearly half of toy sales worldwide. Mattel was the leader in 2008 (nearly $6 billion revenues), with Hasbro in second place ($4 billion in revenues). US toy companies employ only about 17,000 workers, thanks to extensive off-shoring of production in the last several decades – most to China (in 2008, 77% of US toy imports -- about 20 million toys -- were produced in China). Smaller toy companies rely almost exclusively on external contractors. Very large toy companies utilize company-owned factories (mostly in China but to a lesser extent in Mexico and a few other countries) to produce large quantities of their "classic" toys (such as Barbie or Hot Wheels), for which demand can be predicted fairly well. These company-owned factories give economies of scale that are difficult for smaller competitors to replicate. External contractors (mostly in China) are heavily used for producing toys with less certain demand (those toys that companies hope will be this year's fad). Denmark-based Lego, which held the number 4 slot in 2008 (with $1.7 billion in revenues and a healthy 14% profit margin) divides most of its production among facilities in Denmark, Czech Republic, and Mexico. Germany-based

Playmobil divides its production among China, Germany, Malta, Spain and Czech Republic. Thus, toy companies shift much of their demand risk to their contractors and/or to lower-cost production locations.

US customers account for nearly 28% of toy sales worldwide (Table 2). Japan currently holds the number 2 slot; however, as the economies of China and India have expanded, so have their shares of retail toy sales. In the US toys are sold primarily through "big box" discounters, specialty retailers and the Internet. While previously toy sales were tracked separately from video games, some analysts now place these two categories together in a single "playthings" grouping. In traditional brick-and-mortar channels the U.S. big box retailer WalMart dominates, with more than twice the playthings sales as their nearest competitor.

Key challenges facing the toy industry are summarized next.

Seasonality Issues: Seasonal demand is extreme, with a large percentage of US toy sales taking place in the November-December holiday season, when "Santa Claus" and his helpers fulfill children's wishes. Toymakers and retailers have tried to break this pattern by promoting toy sales for other holidays such as Easter; offering collectibles for sale throughout the year (e.g., the Beanie Babies craze in the nineties); promoting complementary accessories (such as the clothing, books and other accessories that accompany Barbie and American Girl dolls); and signing licensing deals with television and movie studios, game makers and others to embed toys in the broader context of children's play and entertainment. Nevertheless, the November-December holiday season remains a critical time of year for retail sales.

Table 1			Table 2				
			Rank 2007	Rank 2008	Country	Toy Sales ($000,000)	%
Top US Playthings Retailers	2007						
1. Walmart	$ 11.4 B		1	1	US	$21,650	27.7%
2. Toys 'R Us	$ 5.5 B		2	2	Japan	$ 5,828	7.5%
3. GameStop	$ 5.4 B		5	3	China	$ 4,527	5.8%
4. Target	$ 3.5 B		3	4	UK	$ 3,986	5.3%
5. Best Buy	$ 1.4 B		4	5	France	$ 3,189	5.1%
6. Kmart	$ 1.0 B		6	6	Germany	$ 2,092	4.1%
7. Circuit City	$ 0.48 B		7	7	Brazil	$ 1,940	2.7%
8. American Girl (Mattel)	$ 0.43 B		9	8	India	$ 1,795	2.5%
9. Meijer	$ 0.41 B		12	9	Mexico	$ 1,703	2.3%
10. Build-A-Bear Workshop	$ 0.38 B		10	10	Italy	$ 1,689	2.2%

Source: French, D. The State of the Stores. Playthings, November 1, 2008.

Changing Play Patterns: Experts now refer to KGOY: Kids Getting Older, Younger. Where for many years toys were targeted at children aged 14 and under, now the upper bound has moved down to age 12 and threatens to drop by as much as two more years, thanks to media and other forces that cause children to aspire to adolescent interests at younger ages. Furthermore, computer-literate children increasingly play in front of a screen, either interacting with traditional computer games or in online social networks such as NeoPets.com. In 2008, US sales of computer games, at $21.4 billion, came close to totals for toys, at $21.7 billion (Table 3), leading some analysts to count these together under the umbrella of "playthings."

Table 3						
SUPERCATEGORY	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**
Action Figures	$ 1.5 B	$ 1.5 B	$ 1.4 B	$ 1.5 B	$ 1.3 B	$ 1.3 B
Arts & Crafts	$ 2.6 B	$ 2.6 B	$ 2.7 B	$ 2.6 B	$ 2.6 B	$ 2.6 B
Building Sets	$ 878 M	$ 670 M	$ 684 M	$ 696 M	$ 605 M	$ 58 M
Dolls	$2.7 B	$3.0 B	$3.1 B	$3.2 B	$2.8 B	$2.9B
Games/Puzzles	$2.3 B	$2.3 B	$2.4 B	$2.5 B	$2.7 B	$2.7B
Infant/Preschool Toys	$3.1 B	$3.2 B	$3.4 B	$3.3 B	$3.1 B	$3.1B
Youth Electronics	$872M	$1.0 B	$1.0 B	$862M	$896M	$849M

Outdoor & Sports Toys	$2.7 B	$2.9 B	$2.9 B	$2.9 B	$2.9 B	$2.9B
Plush	$1.7 B	$1.4 B	$1.4 B	$1.4 B	$1.6 B	$1.7B
Vehicles	$1.9 B	$2.3 B	$2.1 B	$2.1 B	$2.1B	$2.2B
All Other Toys	$1.3 B	$1.4 B	$1.6 B	$1.6 B	$2.3 B	$2.1B
Video Games	$21.4 B	$18.0 B	$12.5B	$10.5B	$9.9B	$10.0B

Source: The NPD Group (www.npd.com) in conjunction with Toy Industry Association, Inc.

Digital convergence combined with other factors also means that product offerings are becoming more complex as toy companies coordinate their production and marketing efforts with their business partners in television and movie studios, clothing, and other industries. Adding to these pressures is the child's inherent fickleness; a hot fad today may be "so yesterday" tomorrow.

Localized Global Market: Few children's fads take hold on a global basis; most are quite localized. Generally, the top five selling toys each season vary markedly around the world, with almost no overlap, according to the US-based Toy Industry Association. As margins grow slimmer, toy companies seek to produce products with mass market appeal so they can achieve economies of scale. Yet, varied cultural norms and practices pose a challenge. For example, Leapfrog, an educational toys company, has found that the processes necessary to sell their products in the United States needed significant modification in other countries, where parental attitudes, school board practices and other factors differ markedly.

Safety and Regulatory Issues: Events in summer and fall 2007 placed a spotlight on toy safety concerns. Toymaker RC2 recalled 1.5 million Thomas the Tank Engine toys because of unauthorized use of dangerous lead paint by Chinese factories. Mattel recalled more than 2 million toys containing imper-missible levels of lead paint and more than 18 million products containing small magnets (if ingested in pairs, magnets can perforate a child's intestine, with potentially fatal effects). Aqua Dots -- distributed by Bindeez in Australia and Spin Master in North America -- were found to contain an unauthorized chemical which, when combined with water, acts like the "date-rape" drug GHB; 4.2 million were recalled when a few children who ingested them grew gravely ill (Bradsher, 2007). In response to this toy-safety crisis U.S. legislators enacted the Consumer Product Safety Improvement Act (CPSIA), with new regulations regarding lead and phthalate content in children's products, stringent new product testing and documentation requirements, and strict penalties for non-compliance. Among the new requirements: every component of every toy must be traceable to its source, in order to facilitate future product recalls.

Global Financial Crisis: The CPSIA had an effect on the toy industry that was similar to the enactment of HIPAA for health care and Sarbanes-Oxley for publicly traded US companies; full compliance is costly in both directly-applied resources and in managerial attention. Thus, toy company executives were already in crisis mode as they prepared for the new CPSIA regulations to go into effect, when the global credit crisis of fall 2008 occurred, setting off a financial meltdown and triggering a deep global recession. As unemployment and financial uncertainty rose, toy sales have both declined and shifted. Industry sources note that in 2009 parents and grandparents are purchasing relatively more classic toys and board games, and are more reticent to purchase fad toys or more expensive toys. These changes are adding new complexity to the already-difficult challenges of global supply-chain management.

4.2 Toy Industry IT Leadership

The turmoil in the toy industry is apparently having an effect on choices that the CIO makes, particularly in light of financial constraints due to the current recession. One CIO reflected on the changes underway. While many executives think about their organization as a "toy" company, this CIO believes it is important to see it as a "play" company, largely because of the dual forces of digital convergence and the increasing embeddedness of toys in a broader constellation of play and entertainment activities. We hope to further explore this topic, and the implications for IT management, in subsequent interviews.

An executive with whom we spoke reflected on tension between the needs of specific business units versus priorities for the broader organization. For example, at this individual's company each business unit has its own order management system, but a single companywide order management system would cost far less to operate. At this and some other toy companies, different business units face different strategic challenges. Some deal with classic toys with relatively stable demand and production efficiency, for example, while others manage newer toys (some in response to children's fads) with more volatile demand and fewer production efficiencies because the designs are both new and likely to change. For this reason, some business unit managers are reluctant to move to a centralized system. Thus an important IT alignment challenge is this choice between global processes that emphasize efficiency versus local processes that are customized to particular business unit needs. This is not a unique challenge; many Chief Information Officers wrestle with similar concerns (Applegate, Austin and Soule, 2008). Yet, we also find that some CIO's see a "silver lining" in the cloudy financial situation, as follows: Since managers of every function and territory are being asked to cut costs, the argument in favor of enterprise-wide software applications (such as for purchasing or for order management) is a little easier to make, because of the potential to reduce total costs to the organization (albeit the functionality will be somewhat less customized). Thus, some CIO's definitely intend to take advantage of the financial crisis by pushing the enterprise software agenda. Chief Information Officers, along with other executives, are also taking a fresh look at their companies' IT sourcing strategies. This is motivated primarily by a desire to reduce IT-related costs, but also to take advantage of pockets of expertise in offshore destinations.

In our early findings we see hints that CIO's actively try to build their IT organizations' competencies and dynamic capabilities, as well as tapping into lower cost competencies beyond domestic boundaries. Some IT organizations are taking on an aggressive agenda for change that appears to be in synch with the toy industry's rapid pace. We are eager to continue our study so as to tap the perspectives of technical and business employees and managers in order to uncover more alignment challenges.

5.   DISCUSSION AND DIRECTIONS FOR FURTHER RESEARCH

As the CIO oversees the development of IT assets, competencies, and dynamic capabilities, it is necessary to set priorities concerning the application domains that will be emphasized. As noted above, one CIO mentioned an enterprise IT application area of concern: order management. Four other IT application domains were identified that hold promise for addressing some of the challenges currently facing toy companies: supply chain management, knowledge management, data mining, and eCommerce.

Supply Chain Management: With unpredictable demand and seasonality, there are clear advantages to be gained through improved supply chain visibility (Johnson, 2001) in the toy industry, which can help companies reduce the risks of both unsold inventory and unmet demand. It seems that many factories in China do not yet have sufficiently strong inter-enterprise software capabilities to exchange data directly with toy companies or with their own suppliers and sub-contractors, so end-to-end supply chains may be more opaque than transparent at this point. We assume that rudimentary databases to track important vendor metrics (product quality, on time delivery and so on) are in place and that these databases do help inform toy company managers' product sourcing decisions. And, there are hints that some toy companies may have become reliant on somewhat more sophisticated supply chain software, because they reportedly have suffered ill effects when it fails them. For example, when educational toy maker Leapfrog had a bad year in 2004, their Annual Report explained, *"We have experienced problems with our supply chain, our information technology systems, and other business processes…."* Also, industry backlash against new component traceability requirements hints that some companies have not yet developed robust two-way supply chain capabilities, even though product recalls have been a fact of life for more than two decades. Thus, it appears that investments in supply chain-related IT assets and competencies could be quite beneficial for toy companies. We further believe that a company that develops an effective dynamic IT

capability in the area of supply chain management will attain a competitive advantage, particularly if this capability is matched by or includes a similarly effective set of complementary business competencies.

Knowledge Management: We see several opportunities for gaining benefit from well designed knowledge management systems. The toy safety crisis of 2007 revealed problems that a good knowledge management system could have helped to avert. For example, we previously noted that Mattel recalled more than 18 million items containing small magnets which, due to a design flaw, could become dislodged and pose a hazard to young children. Since many new products are designed each year, a product design knowledge management system could include tips and guidance on effective ways to encase small magnets as well as remind designers about designs of popular toys that manage to do without such magnets. New restrictions on materials containing phthalates suggest that a knowledge repository containing detailed information on the properties of various allowable materials would also be a useful resource for product designers. A repository of documents that provide cross-cultural guidance related to children's play patterns and acceptable business practices in various locales might also be helpful. Thus, knowledge management would be a useful IT application domain in this industry. We will be interested to learn to what extent toy company CIOs, general managers and others see this as a priority area.

Data Mining: With thousands of units and a continual stream of new products, retired products and recalled products, marketers can gain much from analysis of their own databases and that of their retail partners. For example, which Barbie accessories (clothing, shoes, purses, sporting items) do girls in different demographic and cultural groupings purchase in which patterns? Do purchases of American Girl doll accessories share any common patterns compared with Barbie? What's the optimal product mix strategy for GI Joe promotions in different cities around the world? Which promotions cause fathers to purchase these action figures for their boys, and which ones incite mothers to purchase them? Which channel-product combinations work best (for example, individual action figures sold in supermarket end-caps versus bundled action figures sold at Target or Wal-Mart?). Such in-depth analysis can be supported via careful implementation of data mining systems. We expect to interview a high-level marketing executive at each toy company in order to get a perspective on this application domain, since marketing is undoubtedly a critical function in this industry, and one which relies heavily on well-managed IT.

E-Commerce: In recent years, toy companies have relied heavily on a few key retail partners (e.g., Toys 'R Us, Wal-Mart, and Target in the US). Some also utilize "e-tail" partners (such as Amazon.com) and some offer online sales from their own web sites. Some toy companies are also involved (either on their own or with various partners) in tapping the social networking phenomenon. At NeoPets.com and other kid-friendly online communities, children play with each other, sometimes in virtual worlds that feature real-life products such as Capri Sun drinks. They discuss their favorite TV and movie characters, share photos of their favorite dolls in various outfits and poses, and influence each others' opinions about the latest toy trends. Thus, a sound e-commerce strategy in this industry will go well beyond the technical aspects of establishing data sharing standards and integrating transaction processing systems.

While the internet offers great potential to enhance business, it also brings great risk. For example, channel conflict issues may arise if toy do companies succeed in bypassing their retail partners. Liability and brand identity issues can arise if e-Commerce activities do not incorporate sufficient protections of their vulnerable "little" customers. Interviews with a marketing executive should reveal some insights here, and in addition we hope to interview one or more managers responsible for protecting customer privacy (particularly since in many countries there are specific laws and regulations governing children's privacy and security that are more strict than those in place to protect adults).

If appropriate investments are devoted to building related IT assets, competencies and dynamic capabilities in the above domains, toy companies' strategic IT alignment should improve. In interviews with the CIO and other managers, we plan to further explore whether these application domains are on their priority lists (if so, why) and if not, what other application domains do they see holding greater

promise. We especially want to explore how the discussions around priorities take place at each firm, how conflicts are resolved, and the influence processes that the CIO employs to advance his or her priorities. We recognize that other high-priority application domains are likely to be revealed in further interviews. Collectively, the high priority areas will have significant implications for the choices the CIO makes as to which IT assets, competencies, and dynamic capabilities need to be developed and nurtured in order to achieve strategic IT alignment. Particularly in today's tough economic climate, no toy company can afford to pour resources into initiatives that don't provide sizable returns. We further note that supply chain management, data mining, knowledge management and e-Commerce are not completely separate; they are interdependently connected via well managed data and a robust IT architecture. We note further than in order to conserve resources, some companies will choose to outsource many IT activities. Yet, although most toy companies do outsource a great deal of their manufacturing and do use IT consultants, offshore IT outsourcing is a relatively new phenomenon in this industry.

As noted at the outset, this is a research-in-progress paper. We have chosen to frame our initial investigation in terms of strategic IT alignment, the resource based view and the dynamic capabilities perspective. We have reviewed the literatures on these topics, heard the views of several toy industry executives who spoke at the annual Toy Fair and in the above-noted class, examined industry reports to prepare a background overview of the toy industry, and begun interviews. As we proceed with our first case study, we intend to interview as many members of the executive team as are made available to us, as well as other managers suggested in a process of snowball sampling. We hope to conduct a second case study at another prominent toy company so we can do a cross-case comparison. Longer term, we hope to conduct similar case studies in a different, carefully chosen industry, per guidelines suggested by Chiasson and Davidson (2005). For example, in order to determine whether our findings can be generalized to other industries characterized by rapid technical and business change, it would be helpful to follow CIO's in an industry that shares these and other characteristics (globally distributed, for example) with the toy industry. We note that other industries do share some of the characteristics of the toy industry. Seasonality is an issue for sporting goods (e.g., ski equipment is mostly sold in the autumn), tourism (think of August holidays), and commercial insurance (most businesses renew their policies at January 1 or July 1, depending on their fiscal year). Safety is a critical concern in health care and transportation, and global supply-chain management, complicated by uncertain and changing demand, is certainly an issue for the apparel industry. So, close study of the processes that CIOs employ to develop their IT organizations' assets, competencies, and dynamic capabilities in other industries will surely be of value as we observe how they aim at their moving targets.

Clearly the job of toy company CIO is not just fun and games; there is much to learn from this industry, about strategic IT alignment and the development of IT assets, competencies, and dynamic capabilities.

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