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## *Executive Summary*

*The responses to the 2007 Society for Information Management (SIM) survey showed that “Attracting, developing, and retaining IT professionals” is now the top managerial concern, followed by “IT and business alignment.” Since 2004, these two have consistently been major IT management concerns and have been in the top 10 since 1994. However, there are six new entries in the 2007 list of top-10 concerns—“Build business skills in IT,” “Reduce the cost of doing business,” “Improve IT quality,” “Manage change,” “Making better use of information,” and “Evolving CIO leadership role.”*

*The top-ranked technology was “Antivirus protection,” which entered the list of top key technologies for the first time. Other new entrants in the top five were “Networks” at No. 3 and “Continuity planning and disaster recovery” at No. 5. “Business intelligence” remained at No. 2, and “Business process management” remained at No. 4. Of the 65 key applications and technologies included in the survey, 28 were new in 2007.*

*The 2007 survey found that IT budgets are continuing to rise, with headcount accounting for 31% of spending (down from 41% in the previous two years). 77% of IT organizations are centralized, 31% of CIOs report to CEOs, and 60% of CIOs have at least four years in their current position. Respondents report that the role of the CIO is changing as they spend more time on non-technical issues.*

*The top three enablers of alignment—“Senior executive support for IT,” “The IT organization understands the firm’s business environment,” and “Close partnership between the IT and business”—have remained consistent since 2003, though the order has changed. However, the ranking of inhibitors has changed considerably. No. 1 in 2007 is “Lack of senior executive support for IT,” up from No. 9 in the previous survey. “Business units’ lack of understanding of the firm’s IT environment” jumped to No. 2 from No. 14, and No. 3—“Business units’ lack of support for corporate-wide IT initiatives” was previously No. 12.*

## IMPORTANCE OF IT MANAGEMENT ISSUES

Since 1980, the Society for Information Management (SIM) has sponsored research into the key issues facing IT executives,<sup>2</sup> and the annual SIM survey has become an industry barometer. The 2007 survey, conducted in the third quarter of 2007, focused on four important areas:

- Management concerns
- Application and technology developments
- Organizational issues (IT budgets, IT staff salaries, headcount and recruitment, CIO issues, and IT organization structure)
- Enablers and inhibitors of business-IT alignment.

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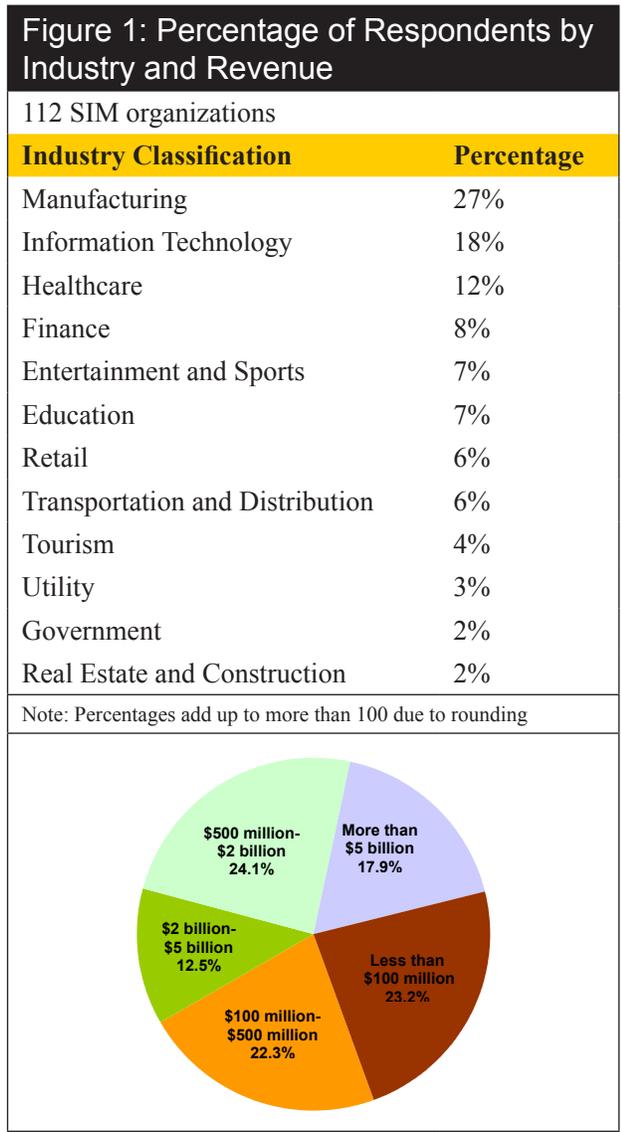
<sup>1</sup> Jeanne Ross is the accepting Senior Editor for this article.

<sup>2</sup> For an analysis of the 2005 research findings see Luftman, J. “Key Issues for IT Executives 2005,” *MIS Quarterly Executive* (4:2), June 2005, pp. 269-286.

Participants rated 38 managerial concerns and 65 applications and technologies, and prioritized a list of enablers and inhibitors that affect the alignment of IT with the business. (See the Appendix for a description of the survey design.)

The No. 1 management concern for IT executives in 2007 was “Attracting, developing, and retaining IT professionals,” compared to “IT and business alignment” in the 2006 survey. However, more respondents ranked “IT and business alignment” as very and extremely important than “Attracting, developing, and retaining IT professionals” (91 compared with 84).

The following sections of this article describe the findings for the 2007 survey. These findings are based on responses from IT executives representing 112 SIM organizations (Figure 1 provides a breakdown by industry and by revenue).



## THE TOP MANAGEMENT CONCERNS

The top-10 management concerns for 2007 are shown in Figure 2, together with the number of respondents rating each concern on a five-point scale (from not important to extremely important). These concerns are described below. Figure 3 shows the next 20 concerns in the order they were ranked by respondents.

Only four of last year’s management concerns remained in the top 10. “Attracting, developing, and retaining IT professionals” moved from No. 2 in 2006 to No. 1 in 2007, displacing “IT and business alignment.” New to the top 10 in 2007 are “Build business skills in IT,” “Reduce the cost of doing business,” “Improve IT quality,” “Manage change,” “Making better use of information,” and “Evolving CIO leadership role.”

### 1. Attracting, Developing, and Retaining IT Professionals

“Attracting, developing, and retaining IT professionals” replaced “IT and business alignment” as the top-ranked concern for IT executives. For the past several years, researchers have been trying to identify best practices for managing IT professionals.<sup>3</sup> In today’s dynamic business and technical environments, organizations need both experienced professionals and new hires to have the appropriate balance of skills (e.g., technical, business/management, industry, communications, working in teams).

IT management faces significant challenges in understanding the mix of skills that is required, in defining an appropriate sourcing strategy, and in retaining the critical talent the organization currently has. The demand for IT professionals with suitable skills continues to be high, even with the threat of recession. Also, the turnover rate of IT professionals has historically been high (although it increased from 7% in 2006 to 8% in 2007, compared to the long-term average of over 20%). When IT professionals leave, an organization incurs costs for hiring and onboarding new employees, as well as the cost of losing their knowledge about the organization. Effective ways of reducing IT professionals’ turnover include motivating them by providing challenging projects and career support.

3 See, for example, Brown, C. V., Ferratt, T. W., and Moore, J. E. “Five Mindsets for Retaining IT Staff,” *MIS Quarterly Executive* (5:3), September 2006, pp. 137-150; and Zweig, P. et al “The Information Technology Workforce: Trends and Implications 2005-2008,” *MIS Quarterly Executive* (5:2), June 2006.

Figure 2: Top-10 Management Concerns in 2007

Rank	Concern	Number of Respondents Rating Concern as:				
		Extremely Important		Somewhat Important		Not Important
1	Attracting, developing, and retaining IT professionals	57	29	17	4	5
2	IT and business alignment	47	44	20	1	0
3	Build business skills in IT*	44	45	19	2	1
4	Reduce the cost of doing business	32	31	37	8	4
5	Improve IT quality	31	42	29	7	3
6	Security and privacy	30	40	27	12	3
7	Manage change	29	43	31	9	0
8	IT strategic planning	28	54	22	5	3
9	Making better use of information	27	52	28	4	1
10	Evolving CIO leadership role	22	44	26	12	8

\* One respondent did not rate this concern

Figure 3: Management Concerns Ranked from 11 to 30 in 2007

Rank	Concern	Rank	Concern
11=	Government regulation	19=	Standardized processes
11=	Innovative new services	19=	True return on individual IT investments
11=	Introducing rapid business solutions	23=	Architecture agility
11=	Measuring the value of IT	23=	Project management capability
15	Business process reengineering	25	IT staff salaries
15=	IT governance	26	Build IT skills in the business
17	Service improvement	27	Improving “paying customer” service
17=	Speed and agility	28	Complexity reduction
19=	Globalization	29	Managing outsourcing relationships
19=	Measuring performance of IT organization	30	Mergers or acquisitions

IT professionals have high achievement and growth needs. If organizations do not provide them with, for example, education and training, career opportunities, a good work/life balance, competitive pay, awards and benefits, they will likely move to other jobs. Also, IT jobs are becoming more stressful, with the need to cope with long working hours, unexpected user demands, and unmet deadlines. Organizations therefore need to provide IT professionals with the support appropriate for successful work performance. IT leaders should work with their HR organizations

and pay more attention to the impact these important factors have on their employees. This is equally true when recession threatens or in times of growth.

## 2. IT and Business Alignment

For the first time since the 2003 survey, “IT and business alignment” was not ranked as the top management concern, although alignment continued to receive the highest number of executives ranking it as important, as shown in Figure 2. “IT and business

alignment” addresses both how IT is aligned (e.g., integrated, in harmony, converged, linked, fused, synthesized) with the business, and how the business should or could be aligned with IT. Frustratingly, organizations seem to find it difficult or impossible to harness the power of IT for long-term business benefit. The need to find effective ways of linking IT and the business seems to grow in importance as business strategies become more dynamic and technologies continuously evolve. Recent research on alignment maturity assessment benchmarking<sup>4</sup> suggests that, while IT and business alignment has been improving of late, there are still significant challenges that remain.

### **3. Build Business Skills in IT**

“Build business skills in IT,” which is very related to “Attracting, developing, and retaining IT professionals,” is new to the top-10 list of concerns. Competitive advantage in today’s business environment depends on how successful IT professionals are at aligning IT strategies and business strategies. Business partners expect IT professionals to effectively communicate with them and demand they possess strong business skills. But effective business skills are not innate—they have to be developed. Some of the other skills needed by entry- and mid-level hires identified in this year’s SIM survey are: problem solving, ethics and tolerance, communication (oral and written), collaboration, project leadership, decision making, and business analysis.

FedEx is improving the business skills of its IT professionals through its “6x6” transformation initiative. IT professionals take a six-month job rotation by swapping job responsibilities with someone else through an international program or domestic positions, or through a leadership-building “purple line” program in which 16 workers participate in a six-month job swap every year. This initiative is aimed at building business knowledge and skills for IT professionals so the IT organization will be more agile, fluid, and responsive to business needs. Participating in this program not only strengthens the skills of the participants, but also spreads best practices, insights, and fresh perspectives across departments.

### **4. Reduce the Cost of Doing Business**

“Reduce the cost of doing business” is new to the top-10 list of concerns. Given the threat of recession,

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4 Luftman, J., and Kempaiah, R. “An Update on Business-IT Alignment: “A Line” Has Been Drawn,” *MIS Quarterly Executive* (6:3), September 2007, pp. 165-177.

it will likely remain high on the list in 2008 and may perhaps move closer to No. 1. It is essential that IT executives proactively work with their business partners to identify opportunities to not just reduce the cost of doing business, but to ensure that the right initiatives are underway to sustain the business and prepare for when the economy turns. Having an effective governance process at strategic, tactical, and operational levels is central to making and carrying out these important decisions.

In today’s global environment, one way that many organizations are reducing costs is by using employees in lower-cost countries. Tesco, a U.K. retailer, has 1,600 staff in Bangalore, India, who support existing technologies, pioneer new technologies, and provide business services. Having an effective IT-enabled collaborative environment is fundamental to the success of Tesco’s Bangalore center. Nearly half of the staff develops software, and the rest run back-office processes such as internal support, payroll, and accounts payable. The center processes £20 billion (\$39.5 billion) of payments annually to thousands of suppliers worldwide. By outsourcing to its Indian global service arm, Tesco has reduced costs by between 30% and 40%. However, it is interesting to note the 2007 survey found that, while outsourcing accounts on average for over 7% of IT spending, offshore outsourcing accounts for only 1.1% (compared to 4.2% in 2006).

### **5. Improve IT Quality**

“Improve IT quality” is another new entry in the top-10 concerns. The increased dependence of the business on IT has resulted in a growing need to improve IT quality. IT quality encompasses “content” attributes such as accuracy, timeliness, conciseness, completeness, accessibility, flexibility, and relevance. Quality is also concerned with the reliability of IT systems. Initiatives such as complying with government regulations, streamlining the supply chain, and enhancing the customer experience demand a dependable IT environment. If properly leveraged, organizations will be able to gain strategic advantage and operational efficiencies by improving customer service and managing their assets more efficiently and effectively.

Jacob and Sundstrom, an IT support services firm based in Baltimore, Md., recognized it needed to improve IT quality. The firm’s revenue is driven by billable hours, and it needed to replace the disparate systems used in tracking time, generating invoices, and managing finances with a single solution.

Originally, employees working at remote customer sites faxed their monthly time sheets to the corporate headquarters. The data was keyed manually into a third-party software product and was then used to generate invoices for each customer. Manual entry increased the risk of introducing errors, and the firm lacked a simple way of identifying which projects were profitable and which were not. Also, the data was dispersed among several disconnected systems, and the IT system used to manage the business could not cope with the company's growing needs. Automating the process has improved quality because the firm is now able to calculate project "actuals," make intelligent decisions, and pursue new avenues of business. The firm can also now determine easily whether a fixed-price contract was profitable and make suitable adjustments to similar future proposals. With improved IT quality, Jacob and Sundstrom now has the capability to better manage its business.

## 6. Security and Privacy

"Security and privacy" has dropped to No. 6 from No. 3 in 2006. Data breaches and their affect on stakeholders (customers, employees, partners, and so on) are continually in the news. But ensuring security in today's complex environment continues to be challenging. As organizations become ever-more interconnected and electronically linked to larger supply chains, their lack of information security will increase the risk through all levels of their value chains.

One well-known "horror story" is TJX Companies, the U.S.-based retailer (parent company of T.J.Maxx, Marshals, and HomeGoods). TJX failed to secure its Wi-Fi network, failed to use firewalls or install software patches, and did not adopt the Payment Card Industry Data Security Standard. As a result, it lost data relating to credit and debit card transactions worth around \$45.7 million and personal information relating to 94 million credit card records. This is the worst security breach in the history of the Internet to date. It could cost TJX more that \$1 billion for security upgrades, consultants, attorney fees, and damage-control marketing.

## 7. Manage Change

"Manage change" is yet another new entrant to the top 10 list of concerns. Recent research and anecdotal evidence shows the importance of managing change.<sup>5</sup>

5 Gibson, C. "IT-Enabled Business Change: An Approach to Understanding And Managing Risk," *MIS Quarterly Executive* (2:2), September 2003, pp. 104-115.

IT organizations are clearly in the business of managing change. They are constantly being driven by changing demands from the business as well as by changes in technologies; they also regularly drive or enable changes in the business. The objective is to maximize the effectiveness of people involved in planning, controlling, and implementing change, while also minimizing the negative effects of change on the business. Motorola has implemented change management at every phase of the project life cycle, from planning to implementation support.<sup>6</sup> Managing change should be included as a fundamental part of strategic planning and IT governance. A large percentage of IT systems fail to deliver the benefits because the process of managing change was not appropriately addressed.

An example of the benefits of managing change is provided by the State of New Jersey's plans to use computers for casting votes. Voting in this way is a dramatic change from a paper ballot or the old "lever" voting booths. A Superior Court judge declined to mandate the use of new voting machines statewide for the 2008 elections, ruling that a full trial was needed first. During the 2008 Presidential Primary Elections, several districts used the new automated system but also provided a paper receipt verifying how the person voted. The paper receipt tally was compared to the computer system tally to demonstrate the viability of the change. Irregularities in the automated counts when compared to the paper counts were found in several districts. All districts will have the paper verification process in place for the General Election in November 2008. Introducing this additional step to demonstrate the viability in the dramatic change in voting procedures will likely prove invaluable to the success of the project.

## 8. IT Strategic Planning

"IT strategic planning" has dropped to No. 8 from No. 4 in 2006. Strategic IT planning is concerned with plans and priorities for the application and support of IT initiatives. To keep IT and business strategies aligned, organizations should have long-range strategies and project plans that address current and future system requirements.

The advantages of strategic IT planning are illustrated by Amazon, the online retailer. Amazon originally used mainframe systems but recognized these could not

6 Roberts, B., Jarvenpaa, S., and Baxley, C. "Evolving At The Speed of Change: Mastering Change Readiness At Motorola's Semiconductor Products Sector," *MIS Quarterly Executive* (2:2), September 2003, pp. 58-72.

cope with its growing business. The company needed a flexible architecture to handle more than a million partners and over 70 million customers. It planned and built Web services to integrate and leverage business applications, while also shielding its databases. Using Web services provided Amazon with the integration and flexibility it required and also ensured that it would not be locked in to any one technology or standard. This value focus demanded that the IT organization and the business work together to create an effective strategic plan. However, focusing just on infrastructure without a strategic plan for applications (that would leverage the information residing in the infrastructure) would not have kept Amazon as an industry leader.

### **9. Making Better Use of Information**

“Making better use of information” is another new entrant to the 2007 list of top-10 concerns. One of the biggest opportunities for organizations is to link their enterprise systems with their business partners so that they can leverage their valuable information assets.

By the end of 2007, General Motors expected to have around 8,000 dealers using its Retail Inventory Management (RIM) systems, which recommend restocking policies at dealerships. Previously, order volumes varied by 21% from Monday through Friday. In the RIM pilot, order variation dropped to 2%. General Motors has 1.3 million parts, and a dealership typically holds 5,000 to 12,000 parts. Misjudgments in ordering can leave the dealer without a required part. Once a dealer agrees with the RIM recommendation, the system automatically gathers the required information and fills the order on a daily basis.

### **10. Evolving CIO Leadership Role**

“Evolving CIO leadership role” is also new to the 2007 list of top-10 concerns. As described later, CIOs are keeping their jobs longer than ever. The CIO leadership role is evolving due to drastic changes brought about by new technologies, the use of outsourcing, compliance issues, and the increasing impact IT is having on businesses. Organizations expect their CIOs to be more accountable, especially for improving and demonstrating the performance of IT to the business, aligning IT and business units, and putting proper governance practices and policies in place. The role of CIOs also involves managing internal and external partners, and the IT organization’s customers/clients. CIOs thus need to have strong business, industry, technical, communication, and relationship-management skills.

Lawrence Kinder, CIO at Cendant Corporation, brings together the company’s IT leaders from the United States, Europe, and Canada to “give each other a shot of adrenalin.” He states that developing and supporting global business is more demanding than developing strategic plans. He has created a true learning organization by giving his global IT leaders the opportunity to think and solve international business problems. He recognizes that his role is not just about technology, but is concerned with business transformation, business success, and business leadership.

## **THE TOP-FIVE APPLICATIONS AND TECHNOLOGIES**

New IT applications and technologies have fueled, and will continue to fuel, the development of new products and services for all organizations. Figure 4 lists the top-10 application and technology rankings for 2007, together with the number of respondents rating each concern on a five-point scale (from not important to extremely important). The top five are described below.

### **1. Antivirus Protection**

“Antivirus protection” entered the list of top technologies for the first time in 2007. Legislation, such as Sarbanes-Oxley and the Government Information Security Reforms Act, require companies to have antivirus protection in place, and most organizations use antivirus software to protect their e-mail against viruses, worms, spam, and inappropriate content. Antivirus protection also helps with maintaining compliance with organizational policies and eliminating inappropriate attachments.

Most organizations use commercial antivirus products (e.g., McAfee, Norton) that use pattern matching and unique algorithms to block or remove a virus within moments of it being distributed on the Internet. Many organizations now outsource virus protection responsibility either to their Internet service provider or to security management companies because these providers have networked antivirus systems that can be used to support all of their users and customers.

### **2. Business Intelligence**

As in 2006, “Business intelligence” (BI) was ranked No. 2 in 2007. BI suites provide the capability to sift through large amounts of data, extract information, and turn that information into knowledge to help

Figure 4: Top-10 Applications and Technologies in 2007

Rank	Application/Technology	Number of Respondents Rating as:				
		Extremely Important		Somewhat Important		Not Important
1	Antivirus protection*	43	21	21	12	14
2	Business intelligence	37	37	20	11	7
3	Networks	32	35	27	7	11
4=	Business process management	31	46	24	8	3
4=	Continuity planning and disaster recovery	31	47	21	8	5
6	Enterprise resource planning (ERP)*	26	19	30	18	17
7	Collaborative and workflow tools	24	43	32	10	3
8	Security technologies	22	39	24	14	13
9	Wireless*	20	38	26	8	18
10	Integrating applications	19	43	27	15	8

\* Two respondents did not rate "Antivirus protection," "Wireless," and "Enterprise resource planning"

executives make better business decisions. BI applications include leveraging technologies such as decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining.

Nestlé Italiana, part of the Nestlé Group in Italy, used a BI system to improve the accuracy of sales forecasting by 25% because the company's managers were able to make objective decisions based on facts instead of subjective decisions based on intuition. The BI solution gathers, organizes, and analyzes huge volumes of information to produce a powerful model that helps business leaders identify trends and predict confectionary sales. The output from the solution is based on five years of historical information. The company has benefited from a 40% reduction in inventory and a 50% reduction in order changes.

### 3. Networks

"Networks" is also new to the list of key technologies. Organizations benefit from their network infrastructures because they provide reliable global reach to employees, customers/clients, and business partners. Worldwide, organizations are building network infrastructures that allow more choices in how they build and market their products and solutions globally.

Hackensack University Medical center in Hackensack, N.J., is an example of an organization benefiting from

its networked software, which acts as the hospital's "central nervous system." Nurses use wireless laptops for recording patient information and progress. Doctors log in via wireless devices to order prescription and lab tests. Everything from the pharmacy to the X-ray lab is linked by the network, eliminating the need for phone calls and faxes, and removing administrative hassles.

### 4. Business Process Management

"Business process management" (BPM) was ranked No. 4 in 2007 (the same as 2006) and tied with "Continuity planning and disaster recovery." BPM focuses on making business processes more efficient, effective, and capable of adapting to the fast-changing environment, frequently by leveraging the Web to integrate existing software systems. BPM also provides executives with the ability to monitor, analyze, control, and improve the execution of processes in real time.

To provide quality service, Costco Wholesale needs to communicate effectively and quickly with thousands of vendors; it cannot afford slow response times when accessing purchase orders, debit memos, or invoices. Costco processes about 30,000 documents per day and stores scanned images of more than 75 million documents, any one of which can be accessed in seconds. BPM has provided Costco with easy storage and quick retrieval of information and enabled it to integrate workflow processes with automated data input. Faster payment processing, easier transaction

storage and retrieval, and improved service to warehouses, depots, vendors, and customers are critical success factors at Costco. Faster document retrieval times and quicker problem resolution led to increased vendor satisfaction. Costco recouped the cost of its BPM solution in just 11 months and saved \$7 million in labor and payment term discounts.

#### 4. Continuity Planning and Disaster Recovery

“Continuity planning and disaster recovery” is also new in the 2007 list of key technologies and tied in fourth place with “Business process management.” Business continuity planning is concerned with being able to run business operations 24x7, regardless of the situation. Disaster recovery planning is a detailed process for reviving or re-creating an IT environment in the event of a catastrophe. Organizations will inevitably be affected by unforeseen events, such as power outages, floods, hurricanes, fires, and even terrorist attacks, resulting in application downtime, data loss, negative public relations, and even personnel losing their lives. Any of these events can lead to significant revenue loss. Since the September 11 terrorist attacks and Hurricane Katrina, organizations have recognized the need to prepare for the worst.

Employees at Juma Technology were not able to get into their offices when a steam pipe exploded in New York City in July 2007. The health department ordered that Juma’s building be closed down because of asbestos contamination and other health risks, and employees were cut off from their laptops for six weeks. Despite the inconvenience, Juma was able to successfully resume operations the very next day because it had a disaster recovery plan in place. It

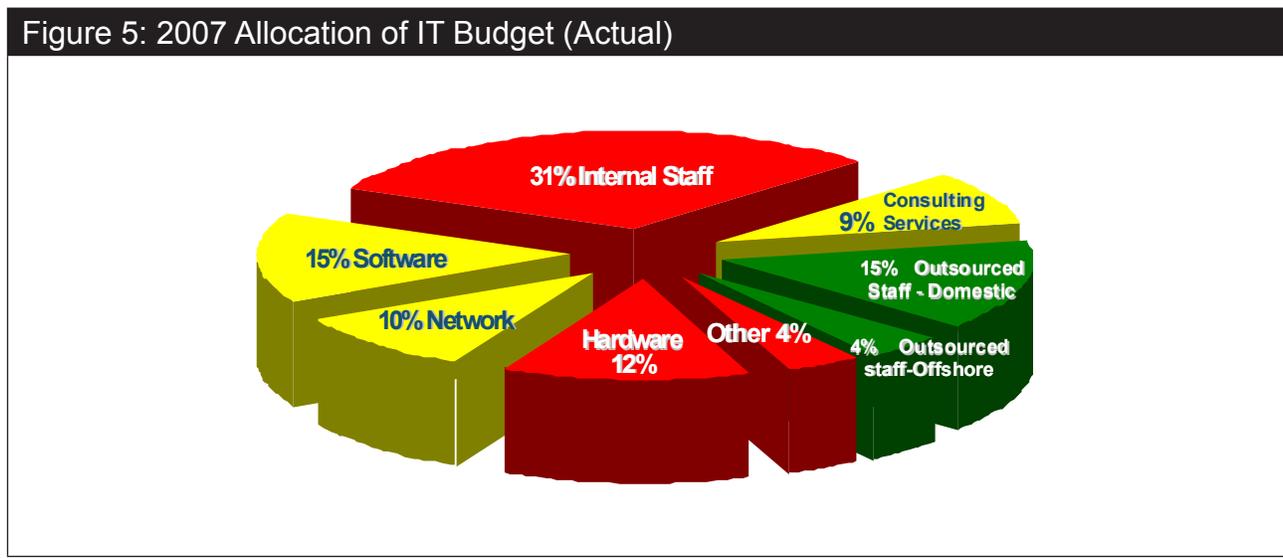
used third-party computers to create a virtual private network and the Secure Socket Layer protocol to ensure data and application security. Remote VoIP technology, together with a WAN-optimization appliance, enabled Juma to answer sales and service calls.

### IT BUDGETS

The 2007 survey showed that IT budgets are still growing and are expected to increase modestly in 2008. 61.3% of the respondents indicated their 2007 IT budgets were higher than 2006, and 48.7% indicated their 2008 budgets will be higher than in 2007. With the threat of recession looming in the U.S., Forrester and IDC have downgraded their predictions on IT spending growth in 2008 from 8% to 4.6%. Organizations are becoming more cautious about IT spending and executives will be more selective in their IT spending. Having effective governance processes is fundamental to ensure appropriate budget allocations.

In the past, spending was focused on technology, hoping for a payoff. More recently, organizations have become far more disciplined in their IT spending and devote more time to measuring results. As Figure 5 shows, staffing is the largest component of IT budgets in 2007, accounting for 31%. But this is 10 percentage points lower than in 2006 and 2005, when staffing costs accounted for 41% of the IT budget. The proportion of the IT budget allocated to staffing costs plays a major role in attracting, developing, and retaining IT professionals.

On average, the IT budget in the 2007 SIM survey was 3.5% of corporate revenue (see Figure 6). This



**Figure 6: 2007 IT Budgets as a Percentage of Corporate Revenue: SIM Data vs. Forrester and *Information Week* 500**

Sector	2007 SIM Data		Forrester's Business Data Services*		Information Week 500**	
	Average	n	Average	n	Average	n
Education	3.71%	7	n/a	n/a	n/a	n/a
Entertainment and Sports	5.86%	7	4.4%	21	5%	28
Finance	4.75%	8	8.2%	36	5.6%	94
Government and Public Services	2%	2	6.8%	58	3.5%	38
Healthcare	5%	9	n/a	n/a	n/a	n/a
Information Technology	4.62%	8	5.8%	6	5.3%	15
Manufacturing and Chemicals	3.47%	27	2.9%	69	2.5%	177
Pharmaceuticals	2.67%	3	n/a	n/a	n/a	n/a
Marketing	5%	1	n/a	n/a	n/a	n/a
Real Estate and Construction	10%	1	3.6%	16	0.7%	14
Retail	2.2%	5	2.6%	33	1.6%	37
Services and Consulting	10.93%	9	5.1%	33	4%	44
Transportation and Distribution	1.83%	6	6.2%	13	2%	24
Travel and Tourism	2.67%	3	n/a	n/a	n/a	n/a
Utilities	1.67%	3	5.9%	11	2%	29
	<b>3.5%</b>	<b>99</b>	<b>3.7%</b>	<b>296</b>	<b>3.3%</b>	<b>500</b>

Note: Forrester and *Information Week* did not have (or did not split out) data for the Education, Healthcare, Pharmaceuticals, Marketing, and Travel and Tourism sectors.  
 \*Forrester's data is based on responses from 296 executives at North American Enterprises.  
 \*\*The *Information Week* 500 comprises 500 U.S. companies that are innovative users of technology, as determined by *Information Week*.

percentage is similar to data from Forrester Research<sup>7</sup> (3.7%) and the *Information Week* 500 survey (3.3%). In our survey, the sectors with the highest IT budgets as a percentage of revenue were real estate and construction, services, entertainment and sports, healthcare, and finance. The lowest sectors were chemicals, utilities, transportation and distribution, government, and retail.

## IT STAFF SALARIES, HEADCOUNT, AND RECRUITMENT

The IT job market remains buoyant and IT professionals have been reaping the benefits. As IT skills shortages deepen,<sup>8</sup> the likely effect will be a hike in salaries as organizations have to recruit from the

shrinking pool of candidates.<sup>9</sup> In the 2007 SIM survey, 85.9% of respondents said that IT staff salaries in 2007 were greater than in 2006, and 62.6% said that salaries in 2008 will be more than in 2007. Only 1% said that IT salaries in 2007 were less than in 2006.

85.4% of respondents reported that IT headcount in 2007 was the same or higher than in 2006. The number of organizations reporting an increase in IT headcount has been generally rising since 2004 (43% of respondents in 2004, 44% in 2005, 39% in 2006, and 49.5% in 2007; 52% project an increase in 2008). These hiring increases, along with "Attracting, developing, and retaining IT professionals" being ranked as the No. 1 concern, clearly shows that IT executives are investing in their professional staff. But there are simply not enough qualified IT professionals looking for jobs. Recruiting and retaining IT professionals will remain a priority.

7 Bartels, A. "US IT Spending Benchmarks For 2007," November 13, 2007, Forrester Research, Inc.

8 Luftman, J., and Kempaiah, R. "The IS organization of the future: The IT talent challenge," *Information Systems Management*, (24-29:138), 2007, pp. 129-138.

9 According to the U.S. Bureau of Labor Statistics, undergraduate enrollments in computer science between 2001 and 2006 dropped 40%.

The 2007 survey indicated that the top drivers for hiring IT professionals are:

- Business growth
- Replacement of employees who have left
- Customer support
- ERP installations
- Regulatory compliance.

As mentioned earlier, the top skills executives look for when hiring IT professionals are problem solving, ethics and tolerance, communication skills (oral and written), collaboration, project leadership, and decision making. Technical skills are less important. Managing IT work requires new skills, many of which are also in short supply. As discussed above, attracting IT professionals requires more than offering a good salary. Other factors include work/life balance, benefits, and flexible working to suit IT professional's life styles.

## CIO ISSUES

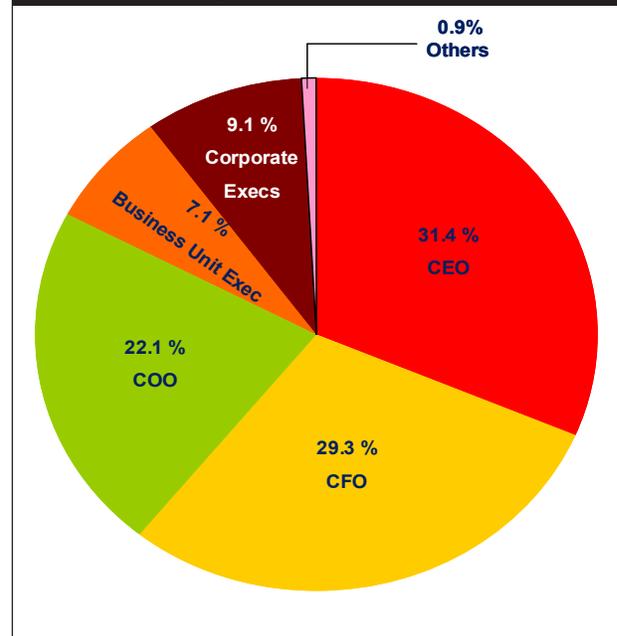
### ***CIO Reporting Structure and Role of CIO***

As Figure 7 shows, nearly 31% of CIOs in the 2007 survey report to the CEO, 29% to the CFO, 22% to the COO, and 7% to a business unit executive. However, the percentage of CIOs and other top IT executives reporting directly to CEOs has fallen dramatically from 45% in 2006 and 43% in 2005. It is unclear whether this is a start of a trend or a blip. On the other hand, the percentage of CIOs reporting to CFOs has risen from 25% in 2006 and 22% in 2005, suggesting perhaps, that some organizations do not see IT as strategic, or are more concerned with cost-cutting measures, or are concerned about complying with government regulations such as Sarbanes-Oxley. If the increasing number of CIOs reporting to CFOs is a trend (not just a one-year blip), it is a clear indication that CIOs' influence is waning.

Previous research<sup>10</sup> has shown that, on average, organizations whose CIOs report to CEOs have higher alignment maturity than those reporting to business executives, the COO, or the CFO. These findings suggest that having the CIO report to the CEO could provide the best structure for improving business-IT alignment.

<sup>10</sup> Luftman and Kempaiah, op. cit., 2007.

Figure 7: Where the CIO or Senior IT Executive Reports



### ***CIO Tenure***

Before the dot-com bust, the average CIO tenure was between 18 and 24 months. Since then, the average has steadily risen to reach 4.1 years in the 2007 survey (up from 3.6 years in 2006). 28% of respondents reported that their CIOs had been in the role for a year or less; 27% for seven years or more. However, average CIO tenure is still less than their "C" level counterparts, which has been consistently closer to seven or eight years. Rising CIO tenure is due to CIOs proving they are good business managers by delivering and demonstrating results. Organizations view the role of CIOs as vital to success, and CIOs are increasingly getting the respect that they deserve. It is likely that CIOs are getting more skilled at what they are currently doing, so are able to be more effective business partners. But this runs counter to the fact that more CIOs now report to CFOs. Also, in reviewing the correlation between CIO tenure and CIO reporting, it appears that, over time, slightly more CIOs move away from reporting to CEOs than move the other way.

### ***How Established CIOs Spend Their Time***

Established CIOs spend about two-thirds of their time on non-technical issues, such as managing relationships with the business (23% of their time), strategy (16%), HR (8%), IT governance (9%), and non-IT tasks (7%). The emphasis on non-technical

issues shows the leadership role of CIOs is changing, with a greater focus on business issues and improving organizational growth. This new focus requires IT leaders to have a very different set of skills (discussed earlier). For the first time, the 2007 survey asked about the evolving CIO leadership role, which was ranked the No. 10 management concern (see earlier).

## IT ORGANIZATION STRUCTURE

IT organization structure institutionalizes how power relationships are defined, the flow of communication, and how IT and business executives interact with each other.

In the 2007 survey, 77% of respondents said that their IT organization is centralized (up from 74% in 2006 and 72% in 2005). In centralized IT organizations, all aspects of IT (IT infrastructure, application software development and deployment, and management of IT projects) report to a single IT executive (CIO).

Only 5% of respondents in 2007 reported that their IT organization is decentralized, down from 10% in 2006 and 2005. With a decentralized structure, each business unit is responsible for its own application software development and deployment, IT infrastructure, and the management of IT projects.

The remaining 18% said that their IT organization is federated, compared to 16% in 2006 and 2005. A federated (or hybrid) structure combines the strengths of centralized and decentralized organizations, while minimizing the weaknesses. Each business unit is responsible for supporting its own applications, while infrastructure and common systems are managed centrally. A federated structure ensures that corporate-wide synergy is maintained, while providing effective responsiveness to individual business units' IT needs.

Previous research<sup>11</sup> has shown that IT organization structure affects business-IT alignment. In that research, 40% of respondents said that their IT organizations were centralized; these organizations had an average alignment maturity of 2.86 (on a scale of 1 to 5, with 1 being low maturity and 5 being exemplar). 13% said that their IT organizations were decentralized, with an average alignment maturity of 2.89. 47% said that their IT organizations were federated; these organizations had a significantly higher alignment maturity of 3.31. These findings suggest that IT-business relationships are enhanced in organizations with federated IT.

<sup>11</sup> Luftman and Kempaiah, op. cit., 2007.

## ENABLERS AND INHIBITORS OF IT AND BUSINESS ALIGNMENT

SIM surveys include questions on alignment enablers and inhibitors every other year. The questions in the 2007 survey were based on those used since 1993,<sup>12</sup> to see whether enablers and inhibitors have changed since then. The 2007 survey asked respondents to indicate the extent to which each item either enables or inhibits business-IT alignment in their organization. The response choices ranged from "greatly inhibiting" to "greatly enabling" and included a "not applicable" option.

The top-14 enablers identified by respondents were:

1. Senior executive support for IT
2. IT organization understands firm's business environment
3. Close partnership between IT organization and the business
4. IT and business personnel have close personal relationships
5. IT plans linked to business plans
6. Good communications between the IT organization and the business
7. IT organization demonstrates strong leadership
8. IT organization meets commitments
9. IT organization involved in business strategy development
10. Clear ownership of IT-business alignment
11. IT efforts well prioritized
12. Goals and visions are defined
13. IT enables strategic advantage
14. IT resources shared.

The higher an enabler is ranked, the more it enhances (fosters) alignment. The top three (senior executive support for IT, IT organization understands firm's business environment, and close partnership between IT organization and the business) have remained consistent since 2003, with minor differences in

<sup>12</sup> The list of enablers and inhibitors was originally developed from input provided by executives who attended IBM's Advanced Business Institute from 1993 to 1997; for more details, see Luftman, J., and Brier, T. "Achieving and Sustaining Business-IT Alignment," *California Management Review* (42:1), 1999, pp. 109-122. A 1999 study presented detailed findings of alignment enablers and inhibitors (see Luftman, J., Papp, R., and Brier, T. "Enablers and Inhibitors of Business-IT Alignment," *Communications of the Association for Information Systems* (1:11), March 1999, pp. 1-32.

their rankings. "IT organization demonstrates strong leadership" was ranked No. 7 in 2007, compared to No. 8 in 2005 and No. 9 in 2003. "IT and business personnel have close personal relationships" was No. 4 in 2007, up from No. 6 in 2005 and 2007.

Respondents identified the following top-five inhibitors, or major roadblocks, to alignment:

1. Lack of senior executive support for IT
2. Business units' lack of understanding of the firm's business
3. Business units' lack of support for corporate-wide IT initiatives
4. Lack of clarity and predictability of corporate goals and directions
5. Business units competing for IT resources rather than sharing.

Several inhibitors were ranked higher in 2007 than in previous surveys and several new ones entered the list of top inhibitors. "Lack of senior executive support for IT" was No. 1 in the 2007 survey, compared to No. 9 in 2005. "Business units' lack of understanding of the firm's business" jumped from No. 14 in 2005 to No. 2 in 2007. "Business units' lack of support for corporate-wide initiatives" was ranked No. 3 in 2007, up from

No. 12 in 2005 and No. 11 in 2003. Interestingly, "Business communication with the IT organization," which was No. 2 in 2005, tied at No. 6 in 2007 with "Resistance from senior executives," which was No. 1 in 2003.

To improve business-IT alignment, organizations need to address both the enablers and inhibitors. The IT business alignment maturity assessment study, sponsored by SIM, has helped identify alignment problems and opportunities, and has provided the directions for further improving alignment. By improving business-IT harmony, organizations can improve their ability to gain business value from investments in IT.

## RESPONDING TO THE SURVEY FINDINGS

This consistency of the top management concerns over many years reinforces the importance for IT executives to:

- Ensure that they and their staff are prepared for the challenges of the changing business and technical environments

Attracting, developing, and retaining IT professionals	Making better use of information
Architecture agility	Manage change
Build business skills in IT	Managing outsourcing relationships
Build IT skills in business	Measuring the performance of the IT organization
Business process reengineering	Measuring the value of IT investments
Complexity reduction	Mergers or acquisitions
Creating an information architecture	Offshore outsourcing impacts on IT careers
Evolving CIO leadership role	Outsourcing IT functions/projects
Globalization	Project management capability
Government regulations	Reduce the cost of doing business
Improve IT quality	Reorganizing IT
Improving "paying customer" service	Salary for IT staff
Innovative new services	Security and privacy
IT and business alignment	Service improvement
IT asset and configuration management	Societal implications of IT
IT governance	Speed and agility
IT strategic planning	Staff reduction
Introducing rapid business solutions	Standards and standardized processes
Leveraging the legacy investment	True return on individual IT investments

- Understand the business and industry in which they participate and
- Work toward aligning the IT and business organizations.

IT and business environments are extremely dynamic. CIOs continue to struggle with changes to strategies, recruiting and retaining IT professionals, and infrastructure challenges. CIOs need to educate their IT executives and business partners to think about the implications of their decisions and how to work together in preparing for the future.

## APPENDIX: THE PLAN OF THE STUDY

The 2007 SIM survey was similar to the previous studies in methodology and process.

### **The Survey Process**

The survey was sent electronically and as hard copy to all SIM members (not just corporate members) in June 2007. By September, 112 organizations had responded. The results were presented during the SIM annual conference (“SIMposium”) in Memphis, Tenn. That brief presentation generated a lot of interest and was cited in various trade publications.

### **Identify Management, Application, and Technology Priorities**

The SIM Executive Board decided to once again ask participants about two major issues: “Management Concerns” and “Application and Technology Developments.” Participants were asked to rate the 38 managerial concerns listed in Figure 8 and the 65 applications or technologies listed in Figure 9.

Antivirus protection	Infrastructure/architecture developments	Service-oriented architecture (SOA)
Asset management	Integrating applications	Server virtualization
Autonomic computing	Integrating systems	Shared services
Biometric authentication	Java	Smart cards
Blog/Wiki/Social network	Knowledge management	Software as a service (SaaS)
Business intelligence	Language-translation	Speech/voice recognition
Business process management	Legacy applications	Stabilized systems
Collaborative and workflow tools	Life cycle applications	Standards defined/enforced
Continuity planning/disaster recovery	Linux	Storage virtualization
Corporate performance management	Mac operating systems upgrade	Supply chain management (SCM)
Customer/corporate portals	Mainframe computing	Supplier portals
Customer relationship management (CRM)	Microsoft windows Vista upgrade	Systems management tools
Data mining	Mobile and wireless applications	Ubiquitous computing
Data synchronization	Networks	Utility computing
Document management	Online forms processing	Video e-mail
E-business strategies	Open systems technology	Video/optical computing
Employee portals	Personal computers	Virtualization
Enterprise application integration/management (EAI/EAM)	Product life cycle management	Voice over IP (VOIP)
Enterprise resource planning (ERP)	Project management tools	Web services
GRID computing	RFID	Wireless
Hand-held computing	Security technologies	XML
Identity management	Servers	

The 2007 survey used some of the same questions and choices as in 2006. It updated a lot of questions based on input from SIM board members, similar lists from trade publications, and the lead author's experience.

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Luftman's research papers have appeared in several professional journals, and he has presented at many executive and professional conferences. His book, *Competing in the Information Age: Align in the Sand*, published by Oxford University Press, has been well received by industry and academia. His doctoral degree in information management was earned at Stevens Institute of Technology. He is currently SIM Vice President of Academic Affairs and President of the SIM New Jersey chapter.

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