





2008 Design Firm Information Technology Survey

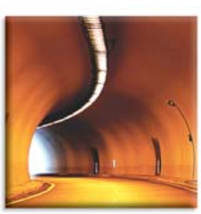
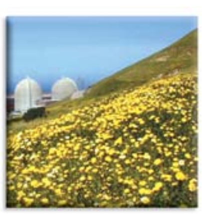
A Survey of CEOs and CIOs on the Topic of Information Technology

Conducted by

Farkas Berkowitz & Company

Sponsored by

Bentley Systems, Incorporated



2008 Design Firm Information Technology Survey

A Survey of CEOs and CIOs on the Topic of Information Technology

Conducted by

Farkas Berkowitz & Company

Sponsored by

Bentley Systems, Incorporated

Table of Contents

2008 Design Firm Information Technology Survey

A Survey of CEOs and CIOs on the Topic of Information Technology

Farkas Berkowitz & Company recently conducted their second annual Design Firm Information Technology (IT) Survey of CEOs and CIOs. Bentley Systems, Incorporated sponsored the survey. The purpose of this survey is to gauge the current state and future outlook of IT at leading design firms. CEOs and CIOs answered questions on similar topics in order to understand where they were aligned on IT issues, where they see opportunities, and how they view one another.

This report first describes the methodology and then presents an overview of the survey results. Following the overview, the report details how CEOs and CIOs view IT, the current IT environment, potential IT opportunities, internal IT practices, and the demographics of the respondents

Survey Methodology and Population

The survey was conducted on line. It took ten minutes to complete, and contained a series of closed-ended questions. Respondents received both an email and postal mail invitation. The survey was conducted between February and April 2008.

Invited participants included both CEOs and CIOs. Ninety-five CIOs and 45 CEOs participated from firms with annual revenues ranging from $18 million to $6 billion.

The number of employees at participating firms range from 52 to 54,000, and the number of IT employees range from two to 1,200. The 2007 IT expenditures range from $100,000 to $85 million. More than 93 percent of the firms that participated in the survey are headquartered in the United States.

The survey had two parts. CIOs responded to the first part. CEOs responded to the second part. Some of the questions in the two parts were the same in order to understand the similarities and differences in the views of CIOs and CEOs. Many of the questions were different.

Overview of the Survey Results

IT is having a positive impact on operations and strategy at design firms, but the survey points out clearly where many IT departments need to better focus their energies.

The vast majority of CEOs surveyed think that IT doing a good job of serving the day-to-day needs of their firms, and most CIOs think their CEOs appreciate the value of IT. Eighty-one percent of CEOs believe IT makes a vitally important contribution to operations, and 79 percent rate their CIOs as excellent or very good for their understanding of operations. In turn, 81 percent of CIOs believe that their CEOs have an appreciation for the contribution that IT makes to operations.

The survey results point to some missed opportunities for IT to have a greater impact on strategy. Fifty-four percent of CEOs believe that IT is making an important contribution to strategy in addition to making an important contribution to operations. This tracks with what the CIOs believe where only 59 percent of CIOs believe that their CEOs have an appreciation for the contribution that IT makes to strategy. Perhaps the CEOs that do not believe that IT is making an important contribution to strategy are not fully giving IT a chance to contribute. The CEOs themselves admit that they do not always consult their CIOs when making most strategic decisions. In fact, only 48 percent of the CEOs agree or strongly agree that they consult with their CIOs before making most strategic decisions. CIOs are not as generous; only 41 percent of the CIOs agree or strongly agree with the statement. The lack of consultation may be a missed opportunity since 75 percent of CEOs believe that their CIOs are able to contribute to strategic decisions.

One major area of strategy is developing competitive advantage in the marketplace. CEOs believe that IT can create competitive advantage and would like to see their CIOs be more proactive in developing competitive advantage. A whopping 95 percent of CEOs believe that IT can be a potent source of competitive advantage. And, 71 percent of CEOs are impressed with their CIOs on being proactive in suggesting how IT can facilitate competitive advantage. But the survey results imply that more can be done. CEOs rank creating sources of competitive advantage third on a list of items where they would like to see IT play a larger role. The only items that receive a higher rank are improving collaboration and productivity.

As design firms face increasing resource constraints, a major concern is how IT can facilitate better productivity. Both the CIOs and CEOs rank improving the productivity of staff third on the list of objectives they would undertake if they had more time and money. Further, 71 percent of CEOs would like IT to play a larger role in supporting improvement in the productivity of client service delivery. These results point to major opportunities for IT especially because only 59 percent of CEOs currently believe that IT is helping to overcome engineering resource constraints.

Increased collaboration can impact all of the areas discussed in this overview. Sixty percent of CEOs believe that their firm is very good at sharing knowledge and work across organizational and geographic boundaries, but only 10 percent believe they are excellent. Obviously, they see room for improvement. Both the CEOs and CIOs rank the need for increased collaboration as the number one force driving the IT agenda, and both rank it as the number one wish-list objective. In addition, 76 percent of CEOs would like IT to play a larger role in facilitating collaboration. These CEOs rank support of collaboration as the area most in need of more attention from the IT department.

The rest of this report presents the survey results in greater detail.

Views of Information Technology

The CIO needs to have a good relationship with the CEO and vice versa. In order to gauge that relationship, the CEOs and CIOs answered series of questions about each other and about the IT department.

Exhibit 1 displays how CEOs view their IT departments. Fifty-four percent see the department making a vitally important contribution to both strategy and operations. Given the importance of IT to strategy, CIOs who work for the other 46 percent have room to improve. Another 27 percent of the CEOs find IT is at least making an important contribution to operations. Therefore, a total of 81 percent of CEOs see IT's contribution as vitally important to their organizations. The other 19 percent presumably want more from their IT department.

Exhibit 1. CEOs' views of the IT's contribution to the firm

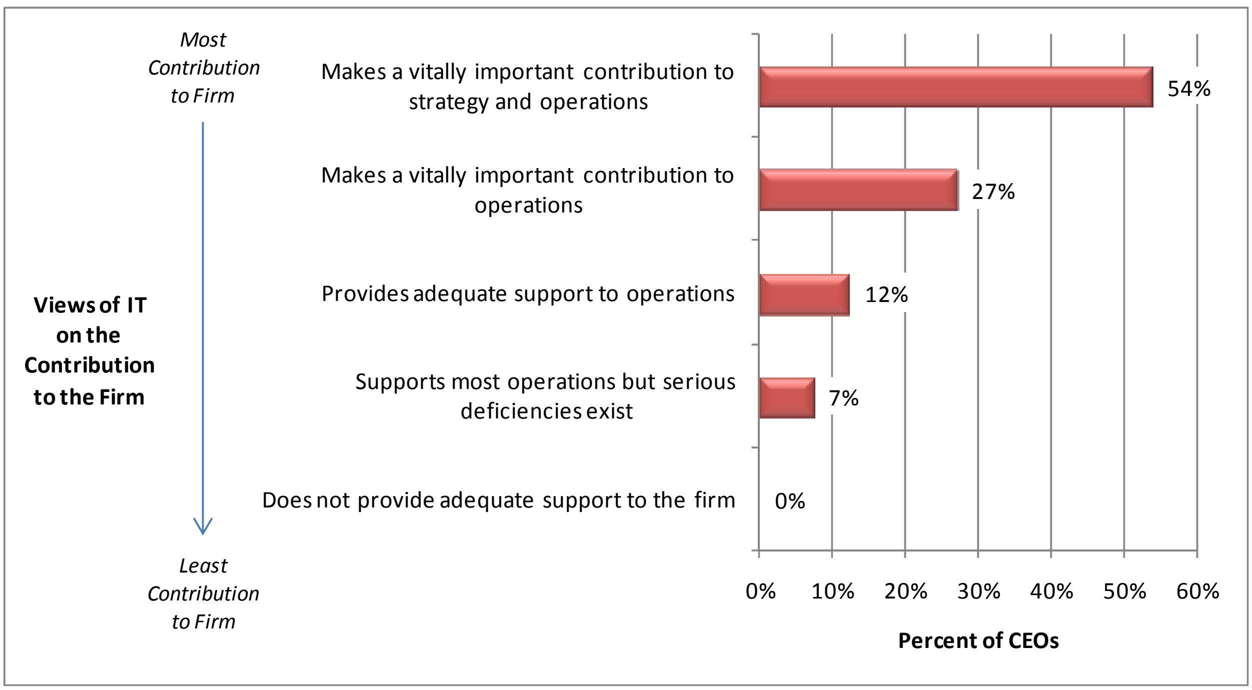


Exhibit 2 suggests that most IT departments are helping their firms overcome engineering resource constraints. When asked to provide their level of agreement with the statement that IT innovations are helping their firm overcome these constraints, 59 percent of CEOs agree or strongly agree with the statement. Only 10 percent disagree.

Exhibit 2. Statement: IT is helping overcome engineering resource constraints

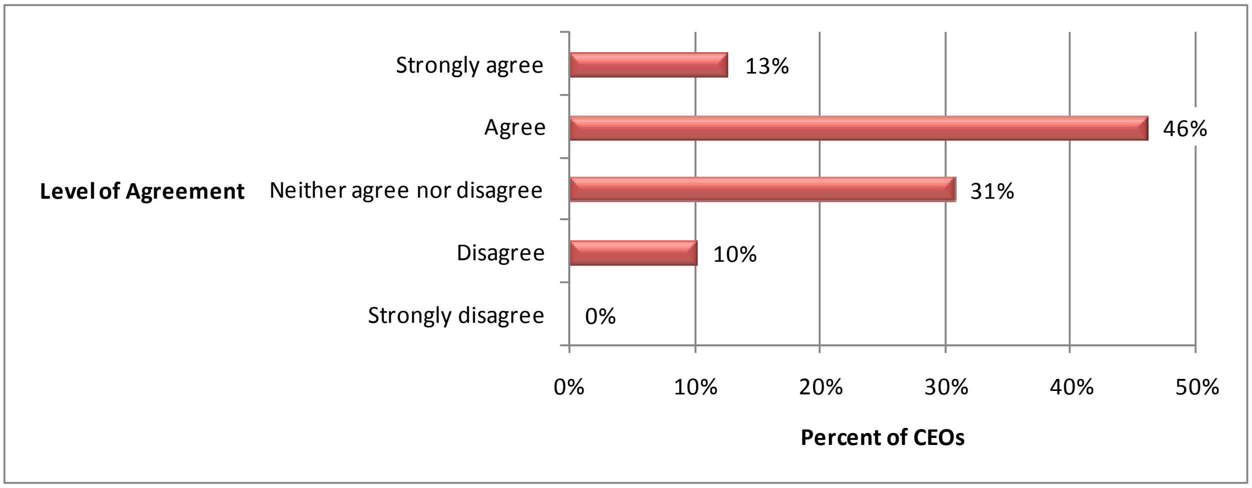
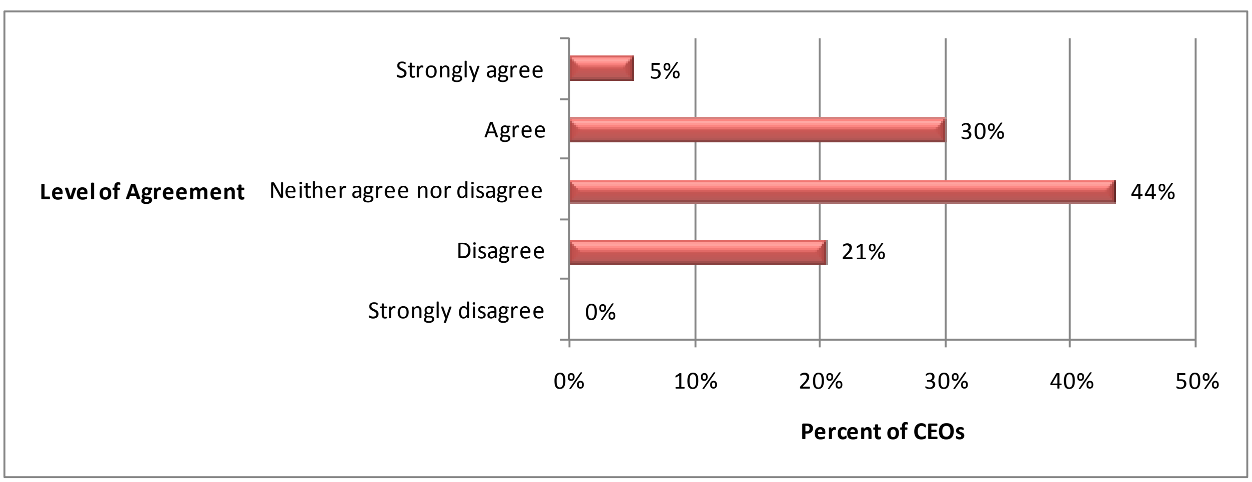


Exhibit 3 suggests that opinion is divided on whether IT innovations are helping in the recruitment of scarce professionals. Forty-four percent of the CEOs neither agree nor disagree with the statement that IT innovations are helping with recruitment. Thirty-five percent of CEOs agree or strongly agree with the statement, while 21 percent of CEOs disagree.

Exhibit 3. Statement: IT is helping recruit professionals



CEOs had the opportunity to give some feedback to their CIOs. The CEOs were asked how they would rate their CIO on seven attributes using a five point scale where 5 was "excellent," 4 was "very good," 3 was "average," 2 was "fair," and 1 was "poor."

CIOs received fairly high marks, with none of the attributes getting an average rating of less than 3.7. Not surprisingly, as displayed in Exhibit 4, IT expertise received the highest average rating (4.3). Apparently, CEO's would like to see their CIOs do more to control costs because the lowest average rating (3.7) went for cost control.

Exhibit 4. CEOs' rating of their CIOs

The CIOs also had the chance to give feedback to their CEOs by evaluating CEO attitudes on the importance of IT by using the same five-point scale. The CIOs rate the CEOs highly for their appreciation for the contribution that IT makes to operations. That attribute received an average rating of 4.1 with 81 percent of CIOs rating their CEO excellent or very good, seven percent rating their CEO fair or poor, and the remaining 12 percent rating their CEO as average.

CIOs did not rate their CEOs as highly on the CEOs' appreciation for the contribution that IT can make to strategy. That attribute received an average rating of 3.6, with 59 percent of CIOs rating their CEO excellent or very good, 14 percent rating their CEO fair or poor, and the remaining 27 percent rating their CEO as average.

CIOs and CEOs indicated their levels of agreement with a list of statements about CEO attitudes. Level of agreement was rated on a five-point where 5 was "strongly agree," 4 was "agree," 3 was "neither agree nor disagree," 2 was "disagree," and 1 was "strongly disagree."

The list of statements includes whether the CEO:

- Consults with the CIO before making most strategic decisions
- Believes that IT can be a potent source of competitive advantage
- Is generally inclined to fund the IT projects that the CIO proposes
- Wants to spend as little as possible on IT.

As displayed in Exhibit 5, both CEOs and CIOs suggest that CEOs are not that good about consulting their CIOs when making strategic decisions, but both tend to agree that CEOs recognize that IT can be a potent source of competitive advantage. Both CEOs and CIOs agree that the CEO is inclined to fund IT adequately.

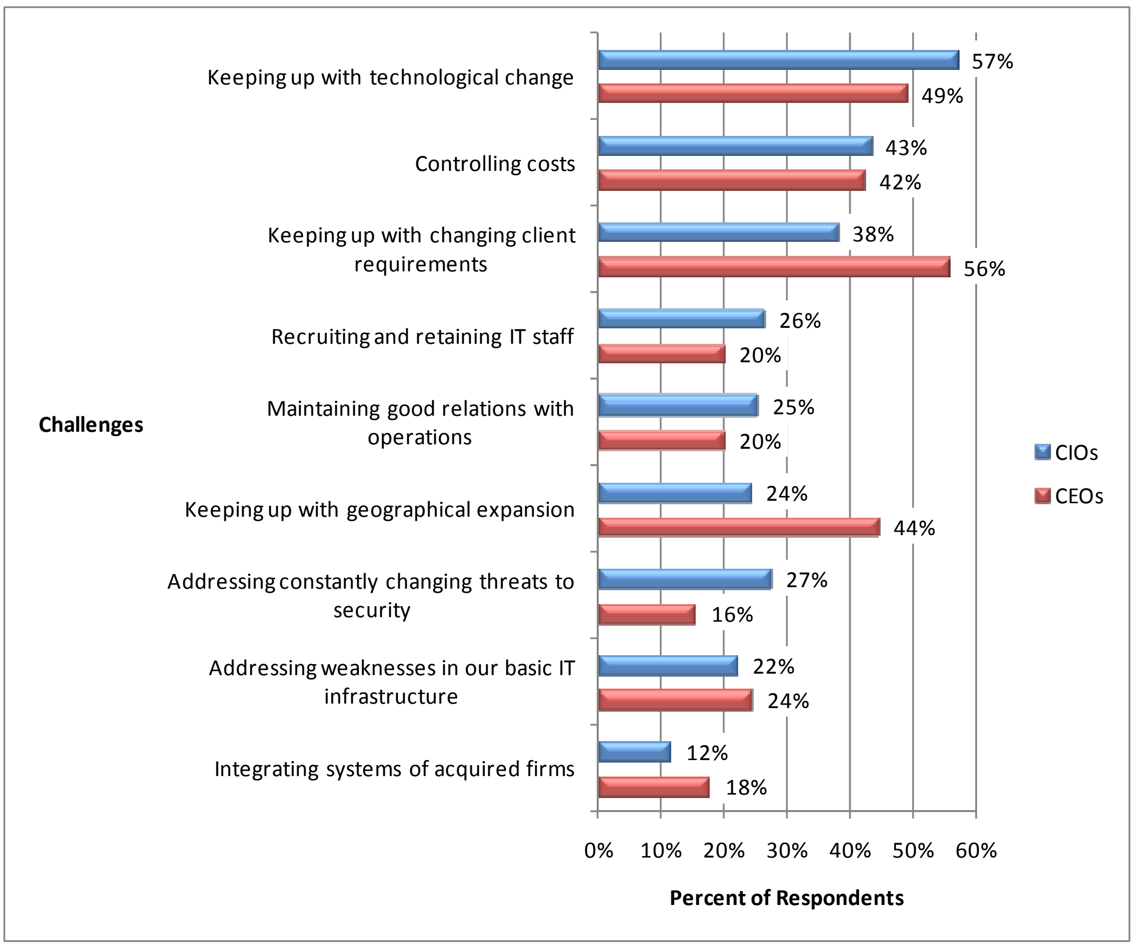
Exhibit 5. Views of CEO attitudes

CEO Attitude	Average Agreement Rating	
	CEOs	CIOs
The CEO consults with the CIO before making most strategic decisions	3.4	3.1
The CEO believes that IT can be a potent source of competitive advantage	4.5	4.0
The CEO is generally inclined to fund the IT projects that the CIO proposes	4.1	4.1
The CEO wants to spend as little as possible on IT	1.9	2.3

Current Information Technology Environment

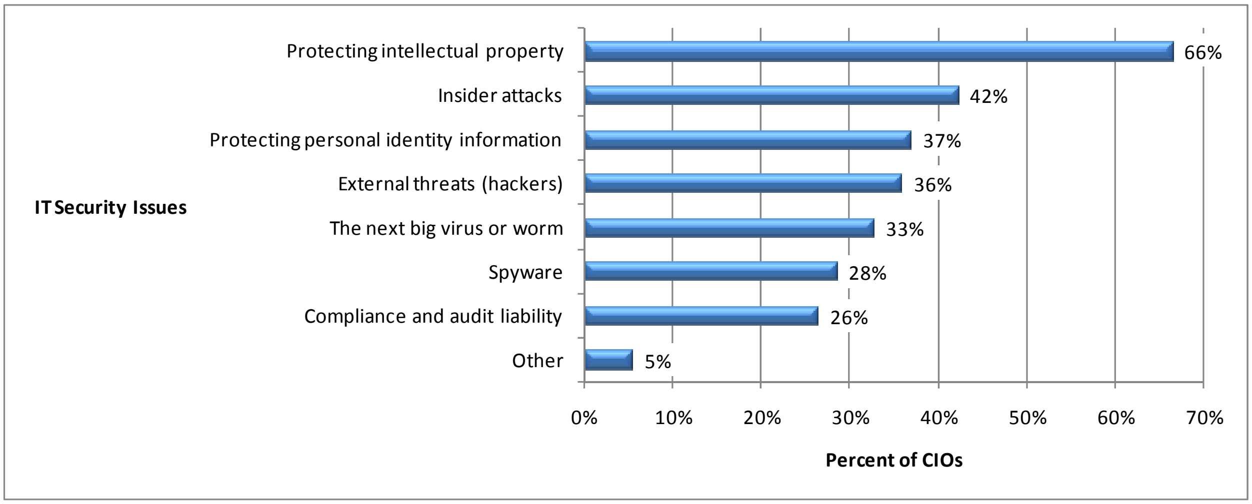
Both the CEO and CIO respondents were asked to choose the top three challenges facing the IT department from a list of 12, including an "other" category. Both the CEOs and CIOs rate keeping up with technological change and keeping up with changing client requirements in the top three. The CEOs are more concerned with keeping up with geographical expansion than the CIOs. Exhibit 6 shows the percentage of CEOs and CIOs ranking each challenge to be among their top three. The exhibit shows only those challenges judged to be among the top nine. Because respondents chose their top three, the percentages in the following exhibit add up to more than 100 percent.

Exhibit 6. Challenges facing IT departments ranked by percent of respondents



CIOs chose the top three IT security issues facing their firms from a list of eight, including an "other" category. The number one security issue cited by 66 percent of the CIOs is protecting intellectual property. This is the same number one issue cited in last year's survey. Insider attacks are cited as the second biggest security issue and was chosen by 42 percent of the CIOs. Exhibit 7 shows all of the IT security issues.

Exhibit 7. IT security issues

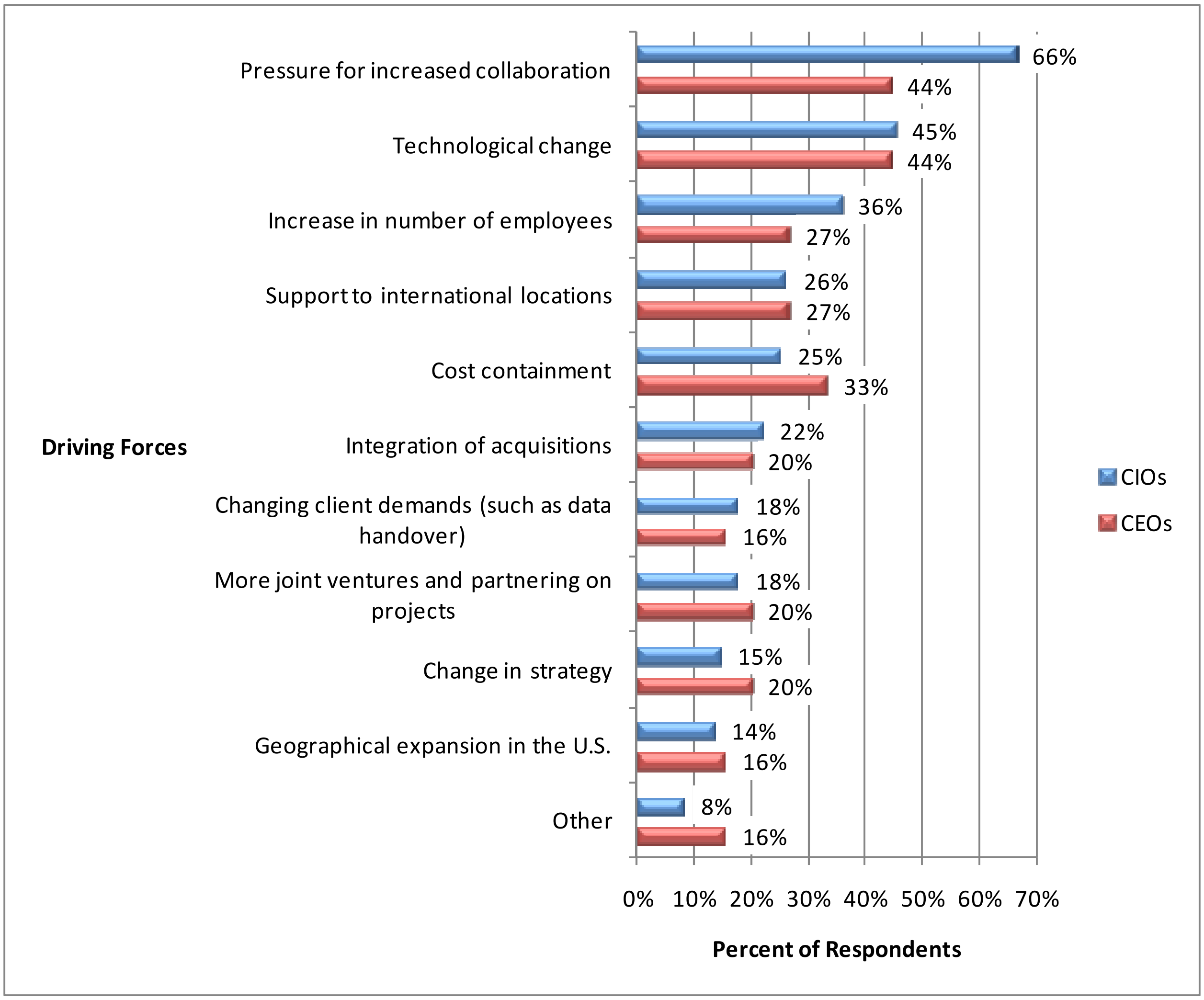


Issues in the "other" category are ensuring security and confidentiality of client data protecting the integrity of the network, and identifying and categorizing company data to enable proper security handling.

Both CIOs and CEOs chose the top three forces driving IT objectives from a list of 11, including an "other" category. Pressure for increased collaboration is the number one driving force chosen by 66 percent of the CIOs and 44 percent of the CEOs. Technological change is the number two force chosen by both the CIOs and CEOs.

Exhibit 8 shows all of the forces driving IT provided to the respondents.

Exhibit 8. Forces driving IT agenda



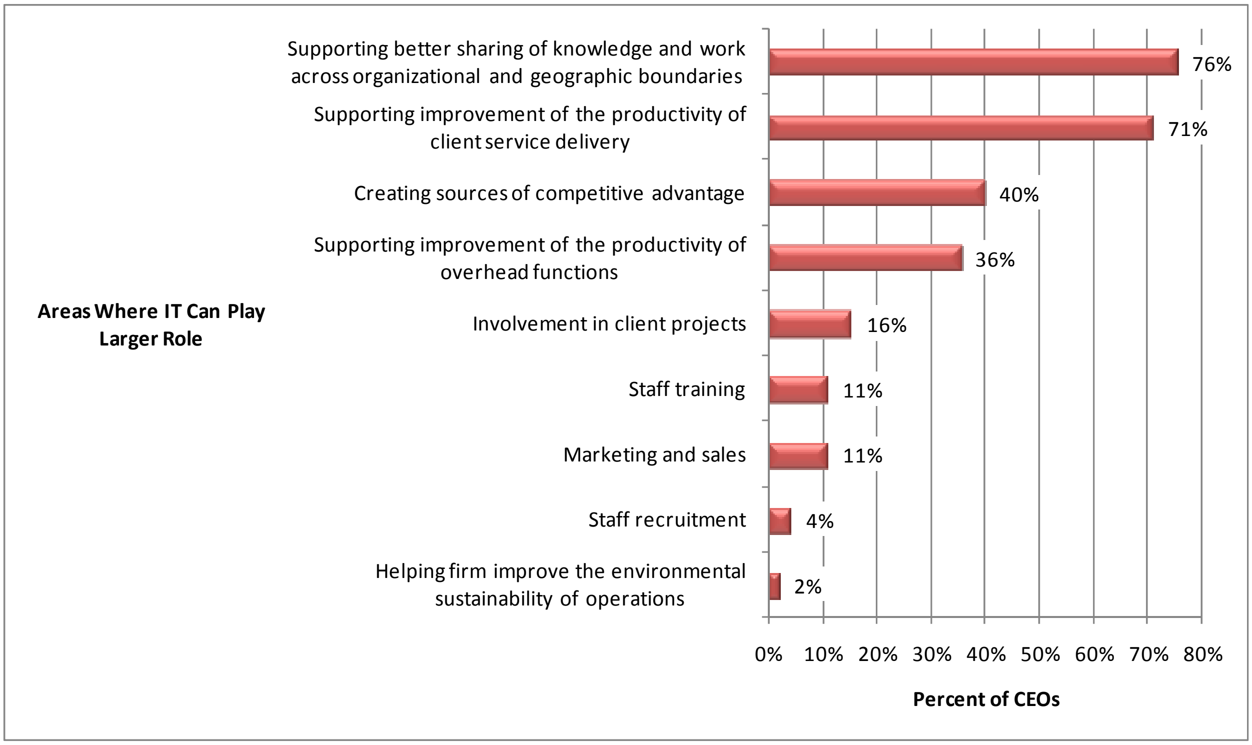
The CIOs cite decrease in number of employees, increased efficiency, security, and software tools to improve business processes in the "other" category. The CEOs cite global geographical expansion and concerns about a possible U.S. recession in the "other" category.

Opportunities for Information Technology

Once CIOs and CEOs overcome the day-to-day needs of their organizations, they may have an opportunity to do more future planning. Respondents answered a series of questions relating to potential opportunities for applying IT in strategy and operations.

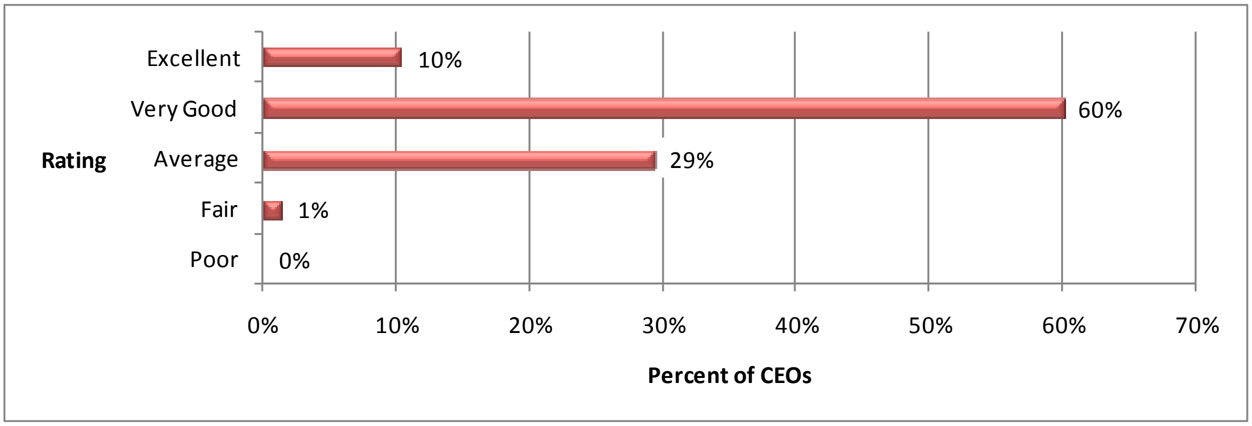
CEOs chose the top three areas in which they wanted IT to play a larger role out of a list of nine. The number one area, cited by 76 percent of the respondents, is supporting better sharing of knowledge and work across organizational and geographic barriers. The number two area, cited by 71 percent of respondents, is supporting the improvement of productivity of client service delivery. Exhibit 9 shows the areas in which the CEOs would like IT to play a larger role.

Exhibit 9. Where CEOs want IT to play a larger role



Although CEOs want IT to play a larger role in supporting knowledge and work sharing, they recognize that IT has already made a valuable contribution to collaboration. All CEOs responded that their IT departments had facilitated the sharing of knowledge and work in the last five years. As Exhibit 10 shows, CEOs also give their organizations high marks when it comes to knowledge and work sharing.

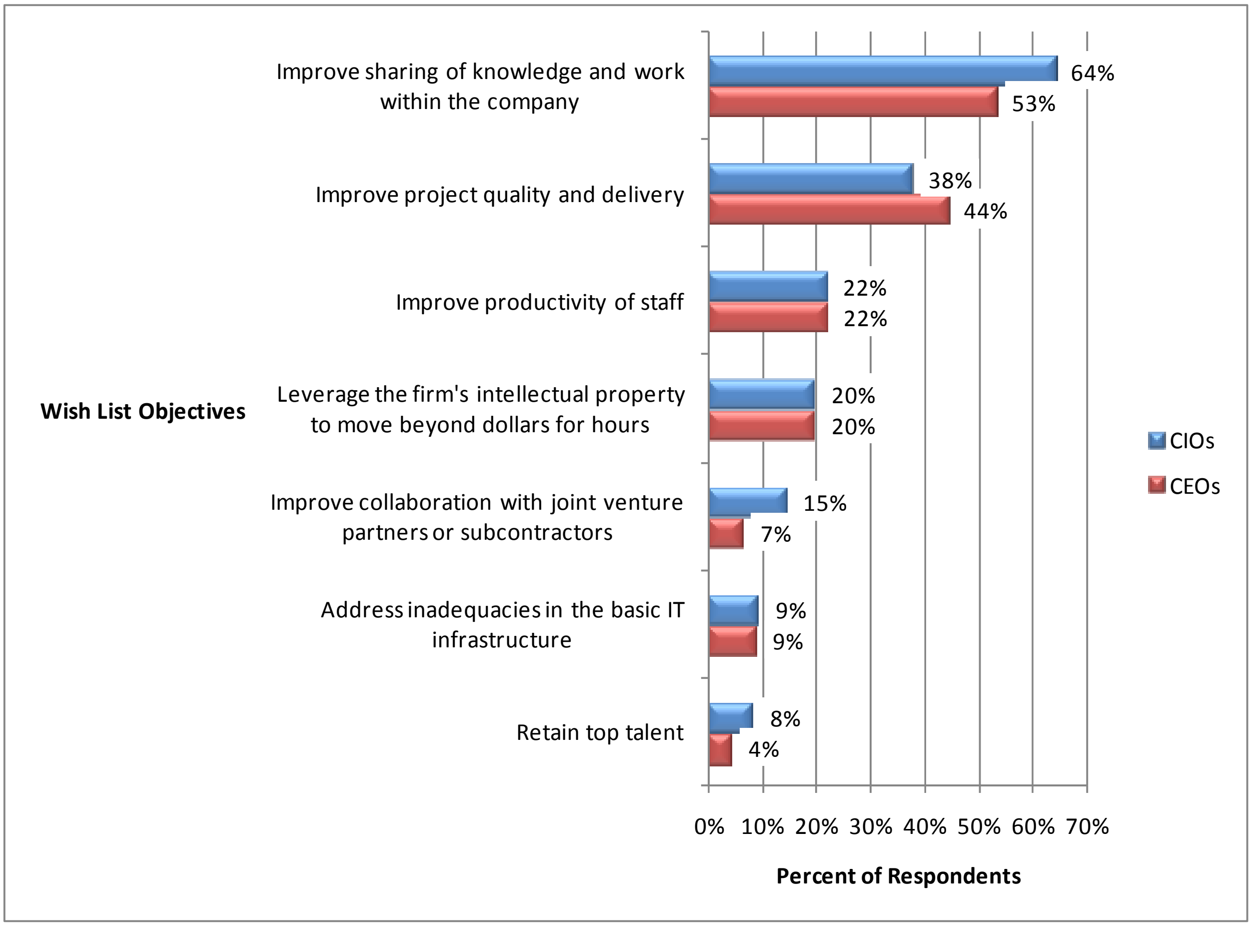
Exhibit 10. Firm's ability to share knowledge and work across organizational and geographic boundaries



Everyone dreams about what they would do if they had more time and more money. CEOs and CIOs are no different. The CEOs and CIOs were asked to choose the top two objectives they would pursue if they were able to implement their IT wish lists out of a list of 11 objectives, including an "other" category. All items are presumed to cost the same amount of money and take the same amount of time.

Improving sharing of knowledge and work within the company is most important to both the CEOs and CIOs (64 percent of CIOs and 53 percent of CEOs.) In fact, both the CEOs and CIOs rank the first four wish-list objectives the same. The second choice is improving project quality and delivery (38 percent of CIOs and 44 percent of CEOs) and the third choice is improving productivity of staff (22 percent of CIOs and CEOs). Exhibit 11 shows the top seven IT wish-list choices.

Exhibit 11. IT wish list



Both CEOs and CIOs rated their confidence that IT could deliver on the objectives chosen in the wish list. Both have confidence that if the money and time were available, the CIO could successfully attain the chosen objectives. The CEOs and CIOs used a scale of 1 through 10 with 1 being the lowest confidence level and 10 being the highest confidence level. The CIOs have an average confidence level of 7.6. The CEOs have slightly less confidence with an average confidence level of 6.9.

Internal Information Technology Practices

Every IT department has a unique way of doing business and meeting its goals. CIOs answered a series of questions relating to how they run their department. These questions were not posed to CEOs.

Only five percent of CIOs outsource all of their IT functions, 51 percent outsource some, and 44 percent outsource none. Outsourcing practices seem to have remained unchanged because last year's survey results were nearly identical to this year's.

Those CIOs who indicated this year that they outsource some of their IT functions identified what IT functions they outsource. Exhibit 12 displays the CIOs' responses.

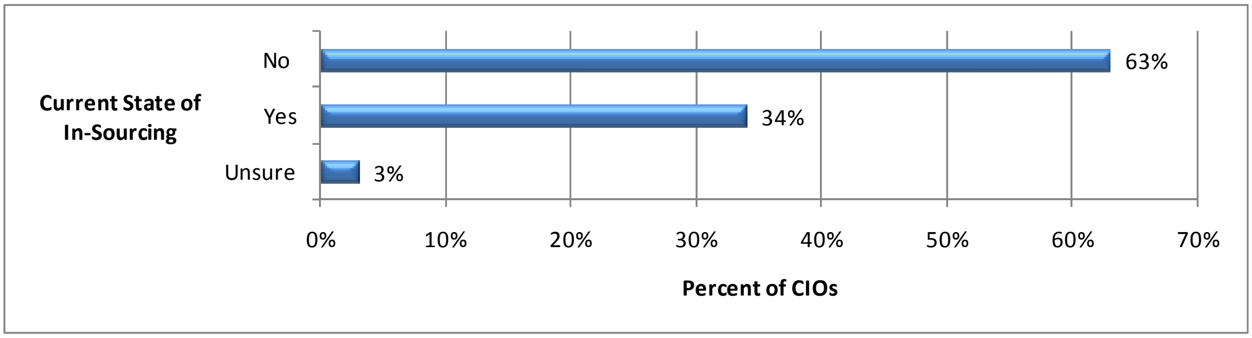
Exhibit 12. Degree to which IT functions are outsourced

IT Function	Level of Outsourcing (Percent of CIOs)		
	All	Some	None
Web Hosting	20%	41%	39%
WAN	15%	41%	44%
Data Center	12%	36%	52%
Software Development	7%	73%	20%
Programming	5%	71%	24%
Training	5%	66%	29%
Security	5%	38%	57%
Hardware Setup/Install	3%	33%	64%
E-mail	3%	29%	68%
Help Desk	2%	13%	85%
Network Infrastructure	0%	34%	66%
Network Support	0%	32%	68%
Software Setup/Install	0%	28%	73%

Sixty percent of CIOs do not plan to increase IT outsourcing over the next two years, while 23 percent do, and 17 percent are unsure.

Most CIOs state that their firms do not in-source. In-sourcing is defined as charging out IT professionals to the firm's clients (i.e., owner operators) to assist the firm's clients with IT implementation or innovation. Exhibit 13 shows that only 34 percent of CIOs currently in-source, while 63 percent do not. Of the CIO respondents that currently do not in-source, 56 percent do not plan to in-source within the next two years, while 18 percent do, and 26 percent are unsure.

Exhibit 13. Current state of in-sourcing

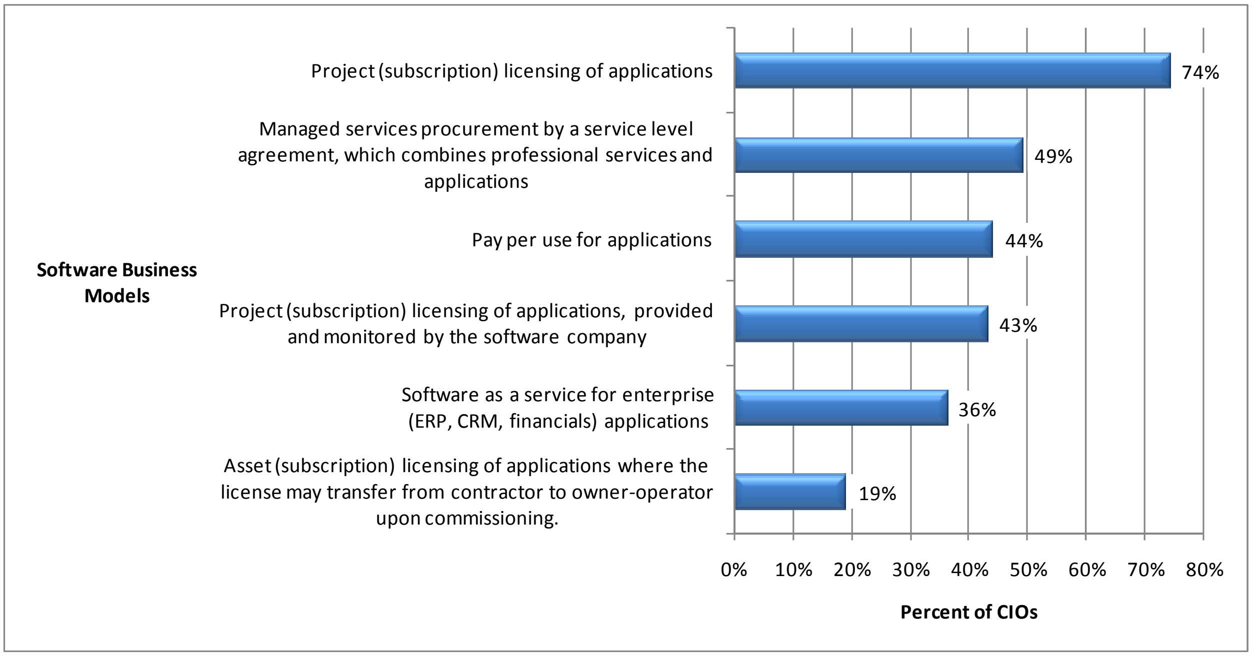


Software vendors use a variety of business models to structure financial relationships with their clients. The CIOs were asked about the following series of software business models:

- Software as a service for enterprise (ERP, CRM, financials) applications
- Managed services procurement by a service level agreement, which combines professional services and applications
- Pay per use for applications
- Project (subscription) licensing of applications
- Project (subscription) licensing of applications, provided and monitored by the software company
- Asset (subscription) licensing of applications where the license may transfer from contractor to owner-operator upon commissioning.

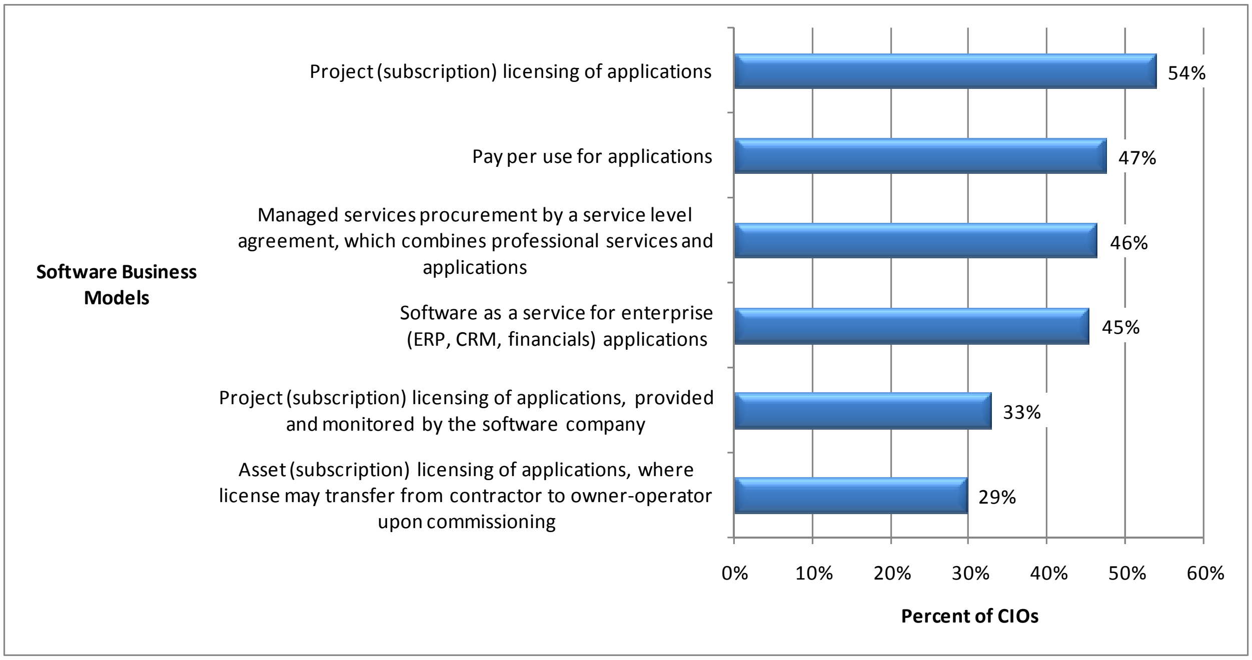
The CIOs first indicated which of these software business models they use. The top two business models being used by the CIOs are project (subscription) licensing of applications (74 percent of the CIOs) and managed services procurement by a service level agreement which combines professional services and applications (49 percent of the CIOs). Exhibit 14 shows all of the potential software business models and the percent of respondents who currently use each business model.

Exhibit 14. Prevalence of alternative software business models



The CIOs chose the top three software business models they prefer to use from the same list. The CIOs most prefer project (subscription) licensing of applications (54 percent of the CIOs) which is what they use most now as shown in the previous exhibit. The CIOs least prefer asset (subscription) licensing of applications where the license may transfer from contractor to owner-operator upon commissioning (29 percent of the CIOs). Exhibit 15 shows all of the software business models and their associated preference level.

Exhibit 15. Respondents' preferences for alternative software business models



The preferences for software business models almost match exactly with the extent to which software business models are currently used.

Investment in Information Technology and People

The CIOs and CEOs shared some information about themselves and their firms.

On average, the CIOs have 17.5 years of experience as IT professionals. The number of years of experience range from three years to 35 years.

Almost half (48 percent) of the CIOs have their undergraduate degree in engineering. Only 16 percent have their undergraduate degree in IT. The remaining CIOs (36 percent) have their undergraduate degree in something other than engineering or IT. Respondents were not given the opportunity to identify what their undergraduate degree was in if it was not in engineering or IT.

When asked if they had significant experience in the delivery of client services, 72 percent of CIOs responded “yes,” while the remainder responded “no.”

Both the CEOs and CIOs shared information about their IT departments and their firms as a whole.

To facilitate use in benchmarking, the information in this section is presented as the average and the 25th, 50th, and 75th percentiles. The average is the average value of all responses. The 25th percentile means that 25 percent of responses fall below that value. The 50th percentile is the exact middle value, otherwise known as the median. The 75th percentile means that 75 percent of responses fall below that value. Another way to look at the 75th percentile is that only 25 percent of responses are greater than that value. Exhibit 16 shows how 63 CIOs allocated their IT expenditures in 2007 and Exhibit 17 presents some firm demographics shared by 109 CEOs and CIOs.

Exhibit 16. Percentage of 2007 IT expenditures allocated to each major IT spending category

IT Expenditure Category	Average	25th Percentile	50th Percentile (Median)	75th Percentile
Computer/server operations	16%	10%	15%	20%
Support services	14%	5%	10%	19%
Security	4%	2%	5%	5%
Data & voice communications networks	14%	10%	11%	20%
Applications development	9%	4%	5%	13%
Software procurement	20%	12%	20%	28%
Hardware procurement	20%	15%	20%	25%
Other*	1%	0%	0%	0%

*Respondents shared what was in their “other” category if the survey offerings did not cover a major expenditure category. The “other” category included research and development, consulting services, outsourcing, and specialty items.

Exhibit 17. Firm demographics

Demographic	Average	25th Percentile	50th Percentile (Median)	75th Percentile
Revenue per total employee	$183,850	$135,417	$162,791	$192,500
IT expenditures per IT employee	$248,240	$125,000	$192,308	$250,000
IT expenditures per total employee	$3,892	$2,226	$3,333	$5,385
IT expenditures as a percent of total revenue	2.2%	1.3%	2.1%	3.1%
Percent change in IT expenditures from 2006 to 2007	6.8%	3.0%	5.0%	10.0%
IT employees as a percent of total employees	2.1%	1.4%	2.0%	2.5%
Percentage of company-wide workforce that telecommutes full time	3.4%	1.0%	2.0%	5.0%

About Farkas Berkowitz & Company

Farkas Berkowitz & Company is a management consulting firm serving companies that provide design, construction, and operational services for government and industry. Established in 1983, the firm assists clients with strategy, mergers and acquisitions, and operations improvement. Inquires should be addressed to Christopher Frangione at 202.833.7530 or frangione@farkasberkowitz.com or visit their website: www.farkasberkowitz.com.

About Bentley Systems, Incorporated

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial verticals spans architecture, engineering, construction (AEC) and operations. With revenues now surpassing $400 million annually, and more than 2,400 colleagues globally, Bentley is the leading provider of AEC software to the *Engineering News-Record* Top Design Firms and major owner-operators, and was named the world's No. 2 provider of GIS/geospatial software solutions in a recent Daratech research study. For more information, visit www.bentley.com.