

IT Value Management in Practice: Interviews with CIOs in Today's Corporate Environment

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Introduction

No industry has enjoyed, and suffered from, the dynamics of change as the information technology sector has in only the past few years. Many would describe the past decade as it relates to technology in Dickensian terms: "It was the best of times; it was the worst of times."

A number of strategic management techniques are being applied to IT in an attempt to gain control over the growing cost and exposure associated with infrastructure, architecture, application, networks and delivery platforms that have now become the technical backbone of every corporate enterprise. MIS has evolved into IT governance, strategic IT and business alignment, scorecards and value management. Attempts to determine the real, business value of IT investments and quantify the business impact of IT projects have led to the adoption of financial techniques such as portfolio management and formulaic quantifiers including return on investment (ROI) and total cost of ownership (TCO).

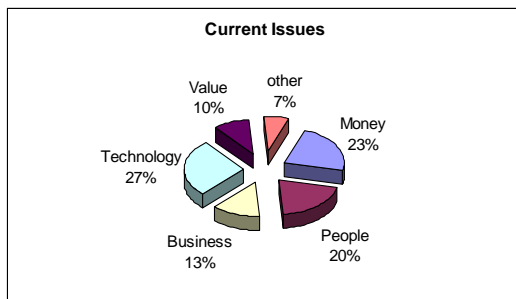
A decade ago these terms would not have had a place in senior IT management's vocabulary. Now these phrases are part of daily conversation and every trade magazine has sections devoted specifically to these topics. But what has really changed in terms of actual IT management? Are we speaking new words, but implementing the same MIS practices that many of us learned in technology management courses many years ago?

The data in this study was compiled from one-to-one interviews with CIOs from 12 companies. The companies range from small organizations with one location and a handful of IT staff to large, global firms with overall IT budgets in the billions. Rather than focus on numerically intensive input, this study looked at the rationale behind the numbers in order to share the "stories" as to why CIOs make the decisions that they do. There are countless statistics from leading publications, and many of them have been included in this paper, so the intent for this report was to provide background and information that would provide insight into the thought process behind the decisions.

Current Challenges

The two ubiquitous forces driving IT decisions today are budget constraints and outsourcing. So common are these forces that most CIO's don't even consider them to be a "challenge". It is simply a way of life that will most likely remain part of the corporate landscape for the foreseeable future. Cost slashes have cut deep into the core of technology resources, all the way from employee headcount, to consulting, to decreased, or even curtailed, new projects. Vendors have been squeezed for lower maintenance and support fees. Business lines have had to delay application development projects. Reducing expenses and eliminating costly overhead has fueled outsourcing, both domestic and offshore. This focus on reduction of costs has brought IT to its leanest point and now there appears to be an ever-so-slight shift towards leveraging the existing investments rather than purely cutting expenses.

The dynamic economic environment and the uncertainty it creates continues to impact IT investments. The lengthening of the value chain to extend outside of the corporate walls has also increased the importance of safe and secure information flow. CIOs now have to contend with security issues that balance the need for open systems. Any of the external business drivers, such as increased government regulations, dramatic market fluctuations, changing competitive strategies and global growth requirements due to mergers and acquisitions are all factors which directly affect the CIO and the management of the corporate technology structure.



The interviews conducted for this survey revealed that the current issues most often cited were closely tied to technology and money with people issues a not so distant third. Of the technology issues, legacy or infrastructure issues were the leading area of concern and in the money category, delivering what the business needs with an ever-decreasing budget was top of the list. Finding qualified technical people, particularly in those firms dealing with legacy system issues, was a strong concern. The pace of change in technology advancements increases the importance of constantly refreshing IT staff skill sets. Employees with a mixture of technical, business and communication skill sets are sought after commodities. Integrating new and existing employees and assimilating them into the business culture is a challenge with important overtones since the alignment of business and IT are so critical to the way in which IT is viewed at the corporate level.

Budget Issues

Not enough money and too many projects have become so common it is no longer seen as an unusual circumstance or problem. It just is what it is. IT has to make do with less while trying to solve all the technology needs of the enterprise in as little time as is possible. A Herculean fete to say the least.

What is the right way to determine the dollar amount to be allocated to firm-wide technology? Firms use various methods, some more formalized than others, to ascertain if they are spending too much on technology. Business has a very human side to it; it likes to know where it stands in comparison to others so consulting firms have obliged in the form of benchmarking studies. Some firms look internally and take a reading from the satisfaction level of the business lines. Are they requesting, but not receiving technology upgrades or support? Is there a standing list of new projects which can not be resourced and/or funded? If so, these firms may interpret this as a signal that additional funds need to be allocated to the overall technology budget.

The financial issues which were brought forward during the interviews for this paper included the struggle to allocate budget dollars to new, forward reaching projects rather than to simply maintain the existing systems. The focus on short term returns is an obstacle for both business and IT when they are faced with creating a business case for a new project that may only begin to show economic or business returns months after development and deployment.

The tide does seem to be turning, at least for this sample, where 78% of the CIOs who distinguish between types of projects reported that 50% or more of their budget was allocated to new projects or major enhancements to existing projects. Some firms did not have available statistics that would distinguish between the two types of projects.

Cost containment is also an inherent part of the budget problem particularly in terms of rising vendor product and service fees. Ever-shrinking budgets mean that costs have to be reigned in and even fixed costs, such as support and maintenance fees, have to be renegotiated when possible. The management of costs was seen as a difficult part of the overall budget process. CIOs are not necessarily comfortable with the financial components of negotiation and they are now forced to develop financial skills in order to work effectively with cost containment, budget and business case development as well as managing difficult negotiations with third party vendors.

Infrastructure

No one is spared the challenge of dealing with legacy systems. Making do with existing systems, and the problems that go with them, is euphemistically known as “leveraging your IT investments”. Leveraging the infrastructure was a frequently mentioned challenge in this survey. Most technology departments aren’t given a clean slate; they are faced with legacy systems, infrastructure that is patched, systems that don’t talk to each other, and a number of problems associated with an architecture that was built for a different way of doing business than is needed for today’s integrated models. The hardening of the infrastructure, like the hardening of arteries, doesn’t allow you to simply get rid of the arteries or the infrastructure, you have to find a way to fix, or leverage the system that you are stuck with. A related issue is that of personnel. There are typically few individuals left who were with the firm when the system was built. Current employees can’t be certain as to how or why things were grafted together and what fixes are appropriate to address current problems. Skill sets change dramatically over the years and it becomes more difficult to find employees with the necessary technology background for these legacy systems.

Infrastructure is critical to the corporation’s strategic agility. Not only is it the basis upon which the operations are built, but it also needs to be flexible enough to adapt the future changes which will be required in order to keep business at a competitive level. Since there is no crystal ball to tell us exactly what those changes will be at the time the infrastructure is built, creating this solid, scalable, flexible, yet cost-efficient foundation is problematic. This is often a major bone of contention with senior management that does not fully comprehend the technical limitation of the legacy structure; they only see that they can not accomplish their business initiatives in a competitive timeframe because the structure is not conducive to the changes that are required. A flexible, scalable infrastructure requires thoughtful advance planning and a fiscal mindset that doesn’t demand immediate returns. Typically, infrastructure isn’t on management’s radar until a business shift requires a change that is difficult to deploy due to a hardened infrastructure and at that point you can only send in the medics to do the patch work. The time for investment is long before the first chest pain is felt.

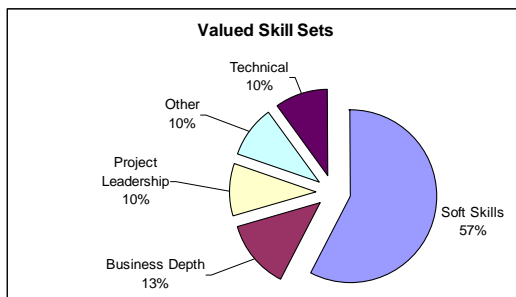
Legacy systems are also financially demanding. Waters (2003) quotes that 80% of IT budgets were allocated to legacy systems.¹ Along with that type of budget allocation comes an increased amount of scrutiny which may be the catalyst behind the CIO survey statistic that shows 51% of CIOs state that improving the IT infrastructure is a top IT management priority.²

Personnel

Personnel issues were clearly a major challenge to this sample of CIOs. The participants in this study indicate that due to the many different technology platforms which co-exist within the enterprise environment, it is critical to find personnel who can understand the system interactions and how to solve problems of a business nature rather than simply being an expert in one specific technical component.

The importance of relationship development, communication and other loosely termed “people skills” or “soft skills” is evident in each of the interviews and in particular the section regarding the types of skills that were most highly valued in new hires. This is a tremendous difference from the responses we would have encountered a decade ago when technology professionals were task- oriented and their main interactions were with other technologists. The dramatic change from technology-specific to solution provider has necessitated the development of a broader range of business skills for the IT professional.

Managing expectations, communicating progress, and working as a team with business units are critical to the success of IT projects. Failed projects are often attributed to poor business requirement documentation, inadequate end-user training, and lack of relationship development all of which are non-technical in nature.



These people skills have become so visible within the firm that the CIOs interviewed for this survey listed them as the most important skill set they looked for when hiring new employees. Technical skills ranked low on the list and CIOs were quick to mention that technical skills are easily taught whereas intangible skills such as the creativity and problem solving are much more difficult to develop in new hires. Soft skills, which represent 57% of the skills most valued, include problem solving, communication, motivation and the desire to learn. Common sense, creativity, willingness to take responsibility and to perform as a leader were also mentioned as important traits. Technical skills were not a critical factor when it came to evaluating new hires.

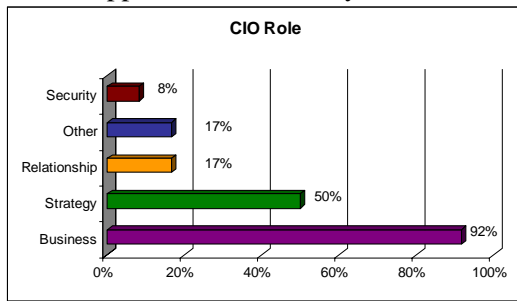
Clearly, this is an issue to be addressed by academic institutions which are educating the next generation of IT professionals.

Business Alignment

Business alignment is one of the hottest topics in IT trade publications and on the conference circuit. The Meta Group’s 2003 Worldwide IT Benchmark Report listed business alignment as the #2 priority for IT executives only topped by the concern for reducing costs.³ There is widespread agreement that business alignment is a good idea and the interviews indicate that most IT managers believe they are acting in alignment by working with the business units to prioritize projects. If business alignment means simply that both sides agree to the project list, then what’s all the fuss about this? It seems pretty simple.

The real issues are often in the details and go much deeper than project prioritization. At the 50,000 foot level, IT and the business do have to agree on what needs to be done and in what order it needs to be accomplished. But achieving that goal (which isn’t always easy) doesn’t mean that there is alignment. True alignment means that the two units are in sync with the way each needs to conduct their business. For example, business needs can shift dramatically during the course of a single market quarter due to external conditions outside of the firm’s control. This shift could require complete rewriting of requirements documents, stopping a project in mid-development, or moving a lower priority project to the top of the list with a rush-for-completion stamp. An IT team that is truly aligned with the business is not caught off guard by these changes because they have been working side by side and are as aware of the business marketplace as they are of the new trends in software development methodology. Is this asking too much? In the past, it might have been. But today technology and business people are learning more about each other, not because they have to, but because their work is so closely integrated. Competitive

enterprises encourage and reward this cooperative work environment. The CIO role reflects this mixed skill set in that many CIOs are now coming into their responsibilities equipped with an MBA and a background in business finance. The surveys revealed that in some companies, heads of business units had attained that position after a successful career in the technology division. As careers cross over traditional divisional boundaries, we can expect to see business and IT truly become more aligned in their strategy, their problem-solving abilities, and in their tactical approaches to delivery.



The relationship between business lines and IT is clearly evident in the responses to the question regarding the role of the CIO.

Partnering with the business was the most frequent response (92% of those interviewed) not only to the direct question regarding roles, but throughout the interview. Developing the strategic vision in concert with the business teams was also a role of great importance. There is no doubt that technology leaders are expected to participate in strategic discussions and be an active part of the strategy committees. It is critical to note that the major responsibilities of top technology professionals are business related rather than technology-centric. The academic implications of this finding are seen in the curriculum and program changes being instituted at colleges and universities that are rounding out technical courses with business classes.⁴ A very positive survey finding was that 42% of CIOs are members of the executive management committee and are thereby part of the overall strategy and business planning of the organization.

IT Investment Decision Process

Decision Science is a core curriculum in academic institutions, but it seldom translates well into the corporate world. Theory is a weak opponent when it faces real-world situations that bring finance, cultural norms and internal politics to the battlefield. In a perfect world, decisions could be made following a well-formulated and time-tested pattern. In today's dynamic environment, in an even more dynamic industry such as technology, even if a decision pattern existed, it would need to be changed so frequently to meet the current state of the environment that its worth would be questionable.

Prioritization

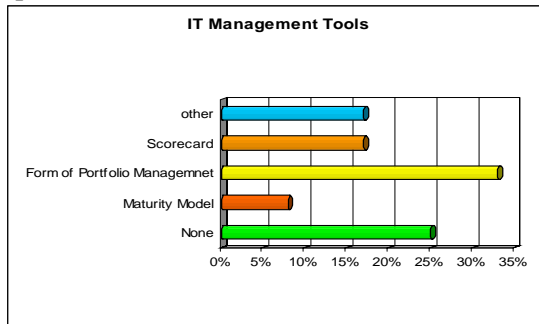
The various lines of business within an enterprise must compete with each other to obtain funding for their own unique technology needs and "wish list". One department may need enhancements to an existing software application, another may be looking to purchase or build a new portal system for its customers and yet another may have networking needs. It is also fair to say that in many instances the infrastructure also needs attention but since infrastructure projects typically affect more than one business unit, no one is raising their hand to put it on their business line "wish list" and consequently, end up paying for it.

Not surprisingly, one of the most popular methods for prioritization ends up being the process of elimination or the squeaky wheel gets the grease method. The majority of study participants indicated that changes to the project prioritization methodology have occurred over the last several years. IT management committees composed of the CIO, CFO, members of senior management, and representatives from business lines have become much more commonplace. However, the level of authority of this group ranges from full responsibility for all enterprise budget allocations to simply a rubber-stamp role.

Tools

The larger the enterprise, the more complex the funding and prioritization decisions become. Risk, cost, and real option variables at the enterprise level increase exponentially with each division that vies for funding from the one communal treasury.

As the complexity grows, so do the number of tools which can be applied to the decision process. Many large consulting firms have proprietary versions of IT portfolio tools which are a variation on basic investment concepts such as portfolio management, diversification, efficient frontier, and real options, and dashboard metrics.



The Balanced Scorecard (BSC) developed by Kaplan and Norton is a performance management methodology for evaluating the operational deployment of the company's strategic goals. It is based on the fundamental idea that financial analysis alone is not adequate for evaluation. Additional perspectives such as customer satisfaction and innovation capability should also be part of the evaluation process.⁵

Real options is a more recent entrant to the field of IT evaluation tools and it is based on the principals of financial options. In the most simplistic terms, the idea behind options is to manage risk by limiting the potential downside. Options are particularly important in times of uncertainty due the inherent risk associated with volatility. Real options allow for delayed decisions based on an investment made now. The initial investment buys the option, so to speak, to make a decision at a later date after the initial project has tested the waters and the

firm has been able to gather additional information as to the viability of the project. CFO.com quotes a Bain & Co survey that found only 9% of the participants used real options and this technique also had a high abandon rate.⁶ Implementing real options is an intensive undertaking of a very complex concept. The basic assumption that IT investments can be measured by the options they provide sounds simple and basic. Opponents argue that the sophisticated calculations and the number of assumptions that are part of these mathematics limit the ability to gain internal buy-in to the process. Real options have been making somewhat of a media-based comeback and are gathering some attention but the results are yet to be seen in terms of usability in the corporate environment. None of the companies surveyed for this study used real options as part of their valuing process.

Portfolio management encompasses the decision process, the monitoring tools and the execution of projects in alignment with the corporate strategy based on guidelines generated from the financial investment theories of asset allocation and diversification. Technology portfolio management is a not so distant cousin of Markowitz's Modern Portfolio Theory. The cost of IT investments can be quite substantial and actively managing that IT portfolio like any other financial portfolio creates a disciplined approach to monitoring risk, leveraging existing assets and maintaining a diversified set of projects that optimizes the total return at the enterprise level. There are many approaches to portfolio management and an equally wide array of software analysis tools ranging from basic frameworks to more thorough, customized tools that can be used to develop the initial portfolio, monitor its performance and recommend adjustments.

This is probably a good point to remember the age old paradigm: Garbage in, garbage out. The tools are only as good as the input data and the decision rules they are provided. It doesn't mean that tools aren't helpful. It does mean that tools can't replace the need for proper business decisions. Portfolio

management tools are useful, but they must be used with the understanding that while they aid the process of decision making, they can not be solely responsible for it.

None of the participants in the survey used a formal method of IT portfolio management and only one used software to assist with the analysis and management process. It is interesting to note that, despite the lack of formal tools, portfolio management plays an important role to 33% of the respondents. Interpretation of the responses and further questions lead to the belief that the portfolio is being “managed” simply because the business units are involved in the decision processing. Among the constituents of this study there is the opinion that when multiple projects are being managed in agreement with lines of business than the portfolio management process is working. The true depth of the portfolio management theory has not been fully utilized by most firms. The value that portfolio management can bring to enterprise level is just beginning to be recognized.

Twenty-five percent of the CIOs in this study do not currently use any formalized tools to assist in the management of their IT portfolio assets. Some felt that the use of tools was not appropriate given their current low level of IT investment. Others didn't see the value proposition behind the expensive software packages or didn't have the resources to devote to this type of analysis. The time spent working directly on IT projects was considered by some to be more valuable than a reallocation of resources to the function of analysis. While several firms used internally developed methods loosely based on general scorecard techniques, others believed that scorecarding is little more than “consultant-speak” and that it could be achieved through carefully selected key performance indicators and business related success factors.

Value Measurement

Technology is certainly a tremendous tool for managing cost, but valuing IT simply by

the level of cost reduction for which it is responsible is too short sighted. Value is a broad concept that needs to be represented by more than a single measurement such as dollars saved. Factors such as improved response time, delivery flexibility, and competitive advantage are only a few examples of complex value components that are not easily measured in financial terms.

Return on investment (ROI) was mentioned only by a few survey respondents in regards to the value process but it was evident in every interview at one level or another. Most CIOs have to deal with ROI or financial based value calculations at some point whether it is for project prioritization decisions, developing a business case for a project or justifying a current project. Responses to questions on this topic ranged from adamant beliefs that technology purchases should not be based on ROI at all to those who felt it was a necessary part of the process even though no one really believed the numbers. Some firms have very exacting calculation methodologies whereas others were laissez-faire. Whatever your personal standpoint is, it doesn't seem possible to have a conversation about business technology these days without uttering those three letters. IT value has become inextricably linked to the standard value formulas.

From the responses in this study, it is clear that post-implementation evaluation is not given the same due diligence as is evaluation for funding. Value is most often measured in the loose categorization of “Did the project meet the needs of the business?” or the traditional measurement of “Was the project completed on time and on budget?” One instance of specific business metrics was elaborated on while the majority of firms determined that the business needs were indeed met if the project matched the “to do” list of the business unit. This is a means by which funding should be determined rather than a method of measuring value. The real value in the end-product is a complex mixture of results that include hard-dollar savings, revenue increases, qualitative factors such as brand

image or customer retention as well as end-user acceptance and satisfaction. When end-user satisfaction is indicated as a value assessment tool this measurement is not quantified or gathered in a formal process. Some firms believe that if the end user is happy, then value has been attained. Others equate value with the fact that the project has addressed a specific business need, but do not take a formal end-user measurement of satisfaction. This leaves “satisfaction” open to a wide range of interpretations. Formalized feedback via surveys or interviews is useful for on-going improvement and prevents surprises at the end-of-year review.

The need for evaluation leads directly to the question of metrics. Financial metrics are often used for investment justification; however, when it comes to evaluating the benefits and business impact of a technology project, the metrics aren’t as well defined. For example, infrastructure projects provide benefits that don’t necessarily have a direct correlation to dollars saved or increased revenues. This type of qualitative benefit needs to be evaluated in terms of meeting business needs and aligning with the overall strategy. Benefits exist even though they are measured in units other than dollars.

Summary

Organizational and environmental dynamics have changed the way companies are evaluating IT investments, managing technology and defining the corporate responsibilities of the CIO. Finding the best mix of tools and analytics to identify and quantify the value instantiated by technology is critical to the continued strategic role of corporate technology. Originally a support tool, IT is now a key indicator of strategic agility and competitive advantage. The next generation of IT professionals will need a new set of skills in order to meet the changing demands placed on them in this new and dynamic environment.

¹ Rodrigues, M., “New Thoughts”, Waters, November 2003, www.watsononline.com

² CIO Insight, “The CIO Role: Do You Have the Right Stuff?”, March 1, 2004, <http://www.cioinsight.com/article2/0,1397,1552849,00.asp>

³ Meta Group 2003 Worldwide IT Benchmark Report

⁴ Parry, Ed, “Universities Aim for More Rounded IT Grads”, April, 21, 2004, www.searchCIO.com

⁵ www.bscol.com; Balanced Scorecard Collaborative

⁶ Teach, E., “Will Real Options Take Root?”, July, 1, 2003, www.cfo.com