

# Technology Spending Guidelines

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## Abstract

We must change content coverage in the Management Information Systems (MIS) course to reflect the growth in importance and the larger share of the total budget of information technology (IT) in all organizations. A one-paragraph coverage of return on investment (ROI) within a systems development chapter is insufficient coverage. Other factors to be considered in IT spending must also get more in-depth attention in this course as it prepares both IT personnel and general management personnel for the future.

**Keywords:** MIS course, teaching about IT spending, more than ROI, choosing technology projects

## 1. INTRODUCTION

Budget cuts, a recession, the fast change in pace of technology developments, and accusations that US companies are wasting billions of dollars on technology make a strong case for examining the process of deciding how to spend on technology. As IT has moved from a niche that was hardly a speck in the total budget of most companies and gained a foothold as a valuable and important part of a company's strategy, IT has also come under greater scrutiny.

The technology spending issue has become more critical over the years as IT has moved from automating repetitive tasks to providing information for managing the business. IT has become a strategic executive partner rather than just playing a support role. The MIS course that is typically a junior level course often taken, and in many instances required, by all business majors must reflect this change. Another important aspect to be incorporated into this MIS course is the use of IT for competitive advantage rather than just a cost reduction (or savings) application.

"A CEO who's not totally knowledgeable about information systems—how to invest in them and how they help the business—just isn't competent," says Harvey Padewer, president and chief executive officer (CEO) of Aquila Energy Corp., a \$4 billion energy trading company in Kansas City, Mo. "If you look at the most successful companies, the senior officers really understand IT. I think it separates the winners from the losers." (Garner 1998)

The MIS course that is typically offered in most schools and taken by Information Systems (IS) majors as well as most other business majors has an obligation to make these potential CEOs knowledgeable. The focus of the knowledge should be the ability to evaluate technology and make decisions regarding which technology should be deployed.

With US companies wasting \$130 billion on technology spending (Hopkins and Kessler 2002), the importance of wise spending on technology is readily apparent. Putting the emphasis in the course on "managing" information systems rather than acquiring technology knowledge, or learning to conduct systems development seems appropriate.

## 2. THE MIS COURSE AND SPENDING GUIDELINES

The times demand CEOs as well as other managers become expert at managing information technology. In response to a survey (Garner 1998), the Number 1 answer to the question "If you or your management team could benefit from learning more about IT for business decisions, what would you most want to learn about?" the CEOs' response was how to evaluate new systems, software and trends, as well as familiarity with each other's terminology.

The MIS course presents a perfect opportunity to begin a foundation for acquiring this knowledge these since the course most often includes a mix of students who are IT majors as well as majors representing other business disciplines. This course, more than any other, has the chance, obligation, and responsibility to teach future

CEOs and other managers IT lingo, future IT managers business lingo, and teach both how to evaluate IT projects.

The Yankee Group, a Boston-based consulting firm, reported that the "focus on the customer has never been greater, mandating the use of non-financial metrics such as customer satisfaction, in addition to financial measures such as payback and return on investment" as a basis for making IT decisions (Efstathion 2002). While most MIS texts and courses routinely include financial metrics as a means of making IT decisions, few do much more than just mention the "soft" returns (intangibles).

What is needed is a more structured approach and a greater emphasis to this important topic area.

### **3. WHO NEEDS TO KNOW AND WHAT DO THEY NEED TO KNOW?**

Chief financial officers (CFOs) charge that IT is afraid of ROI and are clueless about how to find it, figure it, and finesse it (Johnson 2002). Computerworld's Premier 100 IT Leaders indicate that most (68%) rarely or never measure ROI of key projects six months after completion and admit (65%) that they lack "knowledge or tools needed" to even do ROI calculations.

While most MIS textbooks, and therefore, most MIS courses give some coverage to computing ROI, it is usually a very limited overview as a part of the system development process of feasibility. It seems that the business world views ROI in a more expanded role.

Technology spending that is not aligned with business and IT objectives, means that ROI is just an effective way to save money while doing the wrong thing.

Even in good times, internal financial analysis determines 90% of technology investments. In September 2000, Forrester interviewed 50 eBusiness leaders at Global 3,500 firms to understand their typical approaches to funding and measuring eBusiness. Ninety percent cited traditional metrics as their chief decision criteria. But 40% of the 50 leaders complained that eBusiness hype and a lack of objective data forced them to make investment decisions based on gut feel (Pohlmann 2001).

Firms must make technology spending decisions an inextricable part of every business plan (Botwinik 2001). Botwinik reported that a Forrester research showed more than half (54%) of firms don't measure the success of IT spending. Executives must stop viewing technology as separate from their business. It's not just a question of centralized versus decentralized. Technology spending decisions require:

- Business objectives and metrics. Technology spending has no value without measurable business impact.

- Business ownership of technology decisions. Technology decisions must cease to occur apart from business decisions.

- Process-based, distributed decision-making, employing cross-functional teams to lead projects and make decisions.

The focus is on process, not projects. Three steps make up business-owed technology spending: 1) drive business budgets using process-based competency management. Companies create only weak links between competencies and decisions. 2) prioritize projects according to business objectives and, if necessary, break projects into six-month chunks to prevent one large project from dominating the budget pool (divide large projects into chunks accounting for no more than 30% of the total budget). 3) adjust project priorities based on risks and interdependencies.

Instead of measuring success based only on internal ROI, firms must use metrics that track an investment's impact on the entire value chain and include risk in technology spending.

To maximize the impact of limited technology budgets and maintain the best balance across the three types of projects, IT execs should: a) adopt a portfolio view, 2) prioritize projects, starting with support for business objectives, 3) phase projects for earlier payback (Pohlmann 2001).

Vendors think that businesses favor leading edge technology. But user data shows that other factors—like reliability, compatibility, and support – actually drive today's technology buying decisions. Two out of o five large companies require formal justification for all technology purchases (Howe 2001).

### **4. WHAT TO INCLUDE IN THE MIS COURSE**

More than 2/3 of companies use ROI as their formal justification for an infrastructure investment. On average, these firms look for a minimum rate of return of about 30%. Forty percent of firms require formal justification for all infrastructure investments and another 6% require it for all investments of more than \$10,000. Seventy percent of firms say that ROI calculations involve the CIO, CTO, CEO, or CFO in the justification of their purchase. Only 16% of firms involve the technology vendor in this process. Price and Brand aren't driving the decision, instead reliability, compatibility with existing systems and support, and cost and implementation issues, and technology blueprints (Forrester Research, Inc. 2001).

During 2002/03, the emphasis on ROI will cause the biggest pitfall to be cancellation of portal projects/expansions due to failure to prove business value, rather than their technical failure. Each of the 10 most common portal pitfalls can be linked directly back to a failure to properly execute one of these six steps: 1)

sponsorship and ownership, 2) drivers and benefits, 3) features inventory, 4) infrastructure impact assessment, 5) product selection, and 6) internal marketing and feedback (Roth 2002).

The MIS course must include an expanded coverage of ROI during the project planning stages as well as after project completion. This coverage should include hands-on projects and cases.

What is becoming clear is that technology cannot stand alone. It must be coupled with an evaluation of and changes in the broader organizational environment. As Ayers stated (Ayers 1993), success with IT is partnered with TQM and reasons for success vary, but common pitfalls are: 1) lack of measurable success, 2) helping senior management develop visions, 3) helping decide which processes should be focus for improvement teams, 4) participating on improvement teams, 5) reevaluating the IT budget, 6) educating teams regarding technology, 7) conflicts with the traditional organization, 8) lack of senior management follow through, 9) environmental instability. The MIS course must give students practice in each of these areas.

Be sure that students are aware of aids that are available such as Gartner Vendor Ratings, an evaluation system by Gartner. It is provided to help IT users determine purchasing strategies. It assesses overall technology product and service performance of vendors and also individually assesses key product lines for viability for purchase and implementation (Gartner Announces 2001).

Teach the portfolio method, a method that takes all current and proposed projects into consideration, the effect they have on each other, and how the fit together to form a strategy that is consistent with the organization's strategy. "What's the difference between a 250,000-square-foot warehouse in Singapore, an upgrade to your firms' Web site and 10,000 shares in Genentech?" Nothing. They're all investments you make after weighing their risks and returns. Except, of course, when it comes to computer systems. Executives intimidated by technical terms that are meaningless to them don't ask tough questions about deadlines, deliverables, and costs. Technical staffs don't factor in the costs of long-term training, maintenance, and support. IT projects are rarely audited to see if they deliver the financial benefits they promised. Companies are savings millions of dollars each year through a portfolio approach to IT spending. Within an IT budget, an e-commerce project may be a high-risk, high-return investment. Infrastructure upgrades such as buying a faster network are lower-risk, lower-return. This is critical because as you're evaluating all proposed spending at once, it's easier to cut redundant projects or those that don't help the company meets its most pressing business needs. But moving to portfolio management requires firm backing from top

management, a strong program office to manage the process, an energetic and committed team to implement the change and a strong analysis methodology.

It may take years for firms to achieve business-owned technology spending and may require significant changes to corporate processes and culture.

## 5. CONCLUSIONS

"If IT managers don't succeed at connecting more closely with business executives, neither will be able to keep up," says Doug Busch, Vice President and Director of IT at Intel Corp. Companies need to decide where they want to fall on the investment spectrum when it comes to their IT spending. That could range from viewing IT strictly as a cost center that should be tightly reined in to spending aggressively on technology based on the assumption that revenue growth will eventually justify the expense—two extremes that he labeled as "very dangerous." In-depth talks with CEOs and corporate directors about IT plans are still rare in many instances. The fundamental dialogue needs to be a lot more explicit. It's still astonishing the degree to which IT is not understood in those venues.

The MIS course must lay this foundation for wise technology spending. Only by incorporating expanded coverage of ROI and including portfolio management and other soft factors in technology spending decisions will the MIS course meet this goal. This is more important material to cover than the steps in analysis and design since most development today is less formal.

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