

To remain relevant, IT must consistently deliver value in terms that make sense to business people.

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Communicating IT's Value in a Modern Business Climate

Justifying an IT investment has never been easy, but over the last decade and a half, senior IT executives have felt increasing pressure to communicate the value of technology in real economic terms, characterizing how an IT investment financially benefits the firm relative to financial performance targets and real business objectives. Traditionally, they have relied on the capital investment process, using return on investment (ROI) and other familiar financial measures. Executives today take a much broader approach to reflect the diverse nature of how an IT department contributes to the organization and the pivotal role that technology has in many strategic projects.

IT managers have matured in their approach to communicating the value of IT in these years while a whirlwind of high-impact developments in the marriage of technology and business have unfolded—the proliferation of client-server applications and distributed open system architectures, the explosion of cost-effective PC use, the birth of the commercial Internet and Web, the dot-com era, Y2K, and now the post dot-bomb recession. During this time, expensive three-letter enterprise applications have proliferated—ERP, CRM, SCM, SFA, EAI, BPM, BPA, and EPM—each promising to deliver a competitive advantage, stratospheric ROI, and the ever-elusive transformational business value.

IT managers who have weathered these changes are a little wiser for the experience. They have realized that

IT in and of itself does not create value; rather, value stems from IT's impact on business processes. They also know the impossibility of sustaining any competitive advantage from IT alone, since competitors are always ready to mimic any novel approach. IT must give the firm enough agility to keep up with or surpass its competitors and IT managers must be vigilant about their customers' needs and the market's direction. Perhaps most important, seasoned IT managers realize that for IT to remain relevant to the business, it must consistently deliver value in economic terms that make sense to business people.

Even so, IT contributes to the business in many ways that most companies would find hard to measure strictly in terms of financial outcomes. Few would dispute the value of having employees use email on PCs, but no one demands an ROI analysis. Rather, modern businesses just assume that these tools are essential to productivity. Other functions in the company such as human resources would be hard pressed to justify their existence purely in economic terms, but they also deliver what most consider an essential business function.

So why are all eyes on IT investments? For one, IT consumes significant resources relative to other functions because of the cost to operate and manage the IT infrastructure—networks, systems, applications, and a highly skilled workforce. This visibility forces managers to seek creative ways of quantifying the value that IT delivers—in both economic and noneconomic terms—and to pursue tools that will help them maximize this value. While not all performance and value metrics for

Inside

Resources

IT are financial, more successful firms still rely on financial methods to tie IT value to the economics of the business it supports. A broad look at financial techniques for *IT value management*—a company's collective approaches to analyzing and communicating IT value—reveals no cookbook approach to implementation. Every method has unique applicability, success factors, and limitations.

FINANCIAL VALUATION METHODS

IT managers can use a variety of approaches to analyze IT value—all of which are based on the quantifiable economic outcomes of a given IT investment. A disciplined program will typically apply one or more approaches to decide if a project is worth doing (meets a minimum objective or hurdle, for example) and if it is more valuable than another project competing for the same resources. The idea in applying any method is to translate project costs and benefits into an investment profile with a definable impact to the bottom line, cash flow, or any number of other parameters that indicate financial performance for the company.

Total cost of ownership

Early approaches to quantifying IT value focused on the cost side of the equation, with a focus on exposing hidden costs. Total cost of ownership (TCO) is a comprehensive approach that the Gartner Group perfected to capture a technology's full lifetime costs. TCO instilled the discipline of viewing the cost of introducing technology more comprehensively than just the initial investment; TCO pays special attention to hidden support costs, for example. Analysts compare the TCO of two technology alternatives to select the lower cost option, or they can express a project's merits in terms of how it affects TCO for an existing set of IT assets.

Return on investment

ROI most commonly means internal rate of return (IRR) investment analysis, a method based on cash inflows and outflows. Most IT managers are well-versed in financial management techniques that use discounted cash flow to account for the time value of money. A firm's cost of capital is now a common basis for minimum required return, which is the same criteria applied to other investments the firm makes in new business ventures. The CFO organization within the firm provides IT managers the IRR—a hurdle rate, that the project must meet—usually along with related project criteria such as payback period. A minimum 20 percent IRR and a one- to three-year payback period are typical. To compare the IRR of two projects, analysts often compute the net present value, which is essentially the discounted value of the net cash flow. The bigger the value, the better. Together, IRR, payback period, and net present value provide a well-rounded perspective on an IT investment that is soundly rooted in money management principles.

Economic value added

Relative to other methods, economic value added (EVA) focuses more on the bottom line, essentially subtracting the cost of money from an investment's net operating profit. As with IRR, analysts derive the cost of money from a unique return rate that the company must achieve to satisfy investors. EVA views the cost of money, or cost of capital, as an opportunity cost of applying available money to the IT investment compared to other business investments. For many years, firms have used EVA to evaluate corporate financial performance, but the method's use in valuing IT is becoming more widespread, particularly among CFOs. Because maximizing value comes from both increasing project returns and decreasing the use of capital, IT managers are motivated to leverage existing infrastructure and make the most of the available capital.

Although critics often disparage EVA for lacking any element of strategic alignment, the approach is simple and often easier to apply in measuring direct outcomes. Moreover, the lack of strategic alignment is not unique to EVA; it is a criticism that applies equally to most financial methods. The good news for IT managers is that EVA tends to magnify the business value of IT projects that lower cost, and put these projects on equal footing with revenue-generating new business ventures.

Real options valuation

Although much more mathematically complex than the other methods identified thus far, real options valuation (ROV) is becoming increasingly important as a component of IT investment analysis and as a management philosophy for IT programs. Using the same financial estimation techniques as stock option theory, ROV gives managers a quantitative method for assessing the value of an IT investment on the exercisable options that the investment creates, taking into account future uncertainty and attempting to put a value on investing in flexibility. Firms typically use ROV in conjunction with other financial methods to produce a modified ROI.

Once confined to unique business problems such as oil exploration or R&D for pharmaceutical research, ROV has found a niche in IT investment analysis. The classic application is for cascading application investments, or investing in infrastructure capacity for future applications. A bigger up front investment, such as an enterprise resource planning (ERP) platform, can enable a plethora of capabilities downstream to add application modules. Another example is an infrastructure investment, such as application servers for a service-oriented architecture. This investment's empowerment of future capabilities should be part of how the firm views the project's value, and ROV accounts for that. Yet another example is a software vendor's decision to adopt a still stabilizing open standard, investing in the option to be compatible with hardware

Resources

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platforms that have yet to hit the market. In all these cases, the project's present value changes on the basis of exercising future options.

RETURN ON INFRASTRUCTURE

ROV can affect management philosophy in intriguing ways. The methodology forces IT managers to consider the future opportunities that an investment might enable that are *outside* the IT project being analyzed. The result is a broader view of opportunities enabled or relinquished and more attention to the risks around future outcomes. A ROV outlook also forces IT managers to focus on flexibility and on keeping options open, since flexibility is what creates options with real quantifiable value.

Putting a value on IT assets

Return on assets (ROA) is another financial metric with interesting applications in IT investment. ROA treats IT assets like business assets, subjecting them to the same types of financial performance expectations on the profits that must be returned to the bottom line. To calculate a firm's ROA, analysts divide net income by the assets being used to produce this income. They can evaluate the productivity of IT assets in the same way by isolating IT assets and the impact of IT on the net income.

Because IT is often hard to isolate as an asset in accounting terms, applying ROA can require some creativity—both in identifying the asset's value and in determining what part of the firm's income to ascribe to IT. Still, ROA provides a useful mechanism for describing IT value in a way that CFOs can understand. An example is the return from taking existing applications, such as order fulfillment,

and making an investment to expose the system directly to customers for order entry. The firm gains an incremental return on the existing asset. Adding a Web site as a new sales distribution channel could also be viewed as adding incremental return on the firm's brick-and-mortar assets.

Return on infrastructure employed (ROIE) is a new financial metric that accomplishes a result similar to that of ROA but with a focus on IT services instead of assets. With ROIE, IT service cost (including depreciation) is the basis for computing a return. Analysts can apply ROIE to a single project, but it works best when applied to the firm's overall IT program. Any project that decreases IT cost to deliver the same service, or increases IT cost at a slower rate than the company's earnings growth will improve ROIE.

Managing with ROIE tends to motivate the reuse of existing infrastructure, especially to create revenue opportunities, and promotes lower fixed cost. This in turn maximizes the firm's flexibility to scale the IT infrastructure up and down to stay aligned with business conditions. ROIE is an interesting method to apply to outsourcing decisions because firms can increase value by both lowering infrastructure operating expenses and increasing flexibility by lowering fixed costs.

SUCCESS FACTORS AND LIMITATIONS

Not surprising, the financial algorithm to calculate IT business benefits is the easy part of applying any of these financial methods. The challenge is in properly identifying all cost elements and accurately predicting how such costs will vary in the future for a new technology investment. Complicating this effort is the need to compare the prediction with a baseline that itself is built on assumptions with future uncertainty. It is never completely clear how these variables will unfold to affect the cost of the present systems and technology. Sometimes, it is hard to determine if the current systems can even meet future requirements, regardless of how they are modified. In a sense, it hardly seems worth pursuing the precision of capital cost, time value of money, and other complex accounting formulas when the possible outcomes are fraught with uncertainties.

The benefits side of the equation is subject to the same future uncertainty, and the success of the business impact analysis rests even more heavily on creativity and credibility. An effective IT program requires sound performance data on myriad business parameters that technology investment can measurably affect. Achieving benefits is even more elusive than hitting the expected costs, however,

because firms must often account for market-driven revenue uncertainty in addition to project-related costs. Nonetheless, a systematic approach can ensure that no stone goes unturned in painting a comprehensive benefits picture.

For example, firms can avail themselves of numerous frameworks to catalogue the many IT value dimensions. One such tool is Gartner's Business Performance Framework, which lays out 48 metrics in nine dimensions ("How to Communicate IT's Contributions to Business," L. Mieritz and M. Smith, Gartner, Jan. 6, 2006, http://www.gartner.com/DisplayDocument?id=488084&ref=g_sitelink). The key in applying such frameworks is to understand which metrics drive a firm's economic engine and are therefore the ones critical to IT strategy.

The main advantage of using financial IT valuations is that other business leaders can then view IT in real economic terms—terms that reflect how they make decisions in their own business arena. The IT program benefits because it is more likely to be funded, particularly when competing with marketing or human resources, which might not present as solid a business rationale for their activities.

Of course, purely financial techniques have their limits—chief among them, the lack of strategic alignment. For a positive financial outcome, the investment must align with the firm's strategic objectives. Purely financial analyses do not assess the degree of this strategic business alignment. Conversely, saying a project is strategic does not excuse the need for financial analysis.

Purely financial techniques also fail to account for project-specific risks. A financially based analysis carries with it a risk because it establishes a required return. However, project-specific risks, such as the risk that costs will be higher than expected or that benefits will not be realized, are also important. IT managers tend to manage these risks by using conservative estimates of costs and benefits or to bypass them with overly optimistic estimates. With high failure rates on major IT deployments in many domains, financial analysis is clearly insufficient to fully characterize the likely value that a firm will reap from an IT investment. Fortunately, IT managers can always alter course, change the pace of investment, or stop the investment at some point if results are not favorable.

Another reason for the gap between predicted financial returns and actual results is a lack of accountability structure. Firms might not see that many project risks are outside the IT domain, such as reluctant user adoption, changes in business processes in other departments, and or weak stakeholder support. A management structure is needed to ensure that sufficient accountability exists across all stakeholders to fully realize the benefits.

BRIDGING THE GAP

Ultimately, multidimensional techniques for IT valuation will be the bridge between financial ITVM and the

strategically aligned application of IT investments. Portfolio management is one such technique, in which managers categorize various project classes. Even with these methods, however, managers must still rely on financial methods that define IT value in economic terms for individual projects in each category.

Short of adding dimensions to the ITVM program beyond financial methods, there are additional tools of the investment analysis trade that firms can apply to IT projects. Sensitivity analysis and scenario analysis in particular can go a long way toward helping managers understand the impact of identified risks. Sensitivity analysis varies the project's key economic parameters in an effort to gauge their impact on the outcome. Scenario analysis can be as simple as evaluating a best and worst case assumptions in addition to the nominal case, particularly if the evaluation involves varying the most sensitive parameters. This approach is extremely beneficial in complex development, system integration, or technology migration projects, or when market adoption is hard to estimate.

The most important success factor for ITVM is understanding IT's role in the business. Every business operates in a unique context that affects how IT contributes value to business performance. An obvious example is the difference in business drivers between government and commercial enterprises, or even in publicly traded versus privately held companies. In a commercial enterprise, executives view the technology's business impact differently for a centralized IT cost center or R&D organization relative to a full profit and loss center. IT managers can add much more value to their firms if they recognize IT's context in the business and pick the financial ITVM methods that are relevant to that business.

BUILDING BLOCKS

The financial methods described are but building blocks available to IT managers who want to communicate the full value of IT investments in terms that resonate with their peers in profit-generating business units. IT managers would do well to run their IT programs like their business counterparts, rather than to operate purely as a cost-center-driven support function.

Seasoned IT managers can use these building blocks to craft more sophisticated approaches to support the modern enterprise. Regardless of the combination, the best, most comprehensive ITVM program will have many of these basic financial valuation methods as its foundation. Only then can a firm put IT investment on a footing with other critical business decisions. ■

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