Findings

Soaring Interest in ITPM

Respondents (%)

	Optimized ITPM	Have or are Adopting	Plan to Have or Keep
Value	24	45	78

(Y-axis: 0, 25, 50, 75, 100)

Interest in ITPM is very high. Three in four senior IT executives said they will have these practices in place within a year. However, only a minority has optimized the ITPM process for maximum business value.

Management

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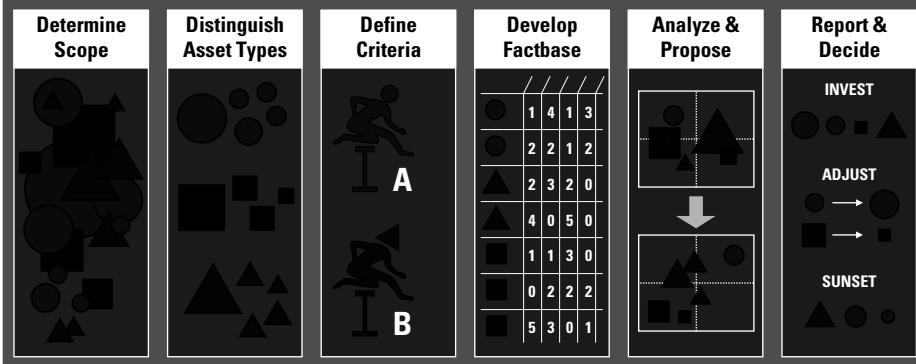Kellogg School of Management
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- 46 percent of respondents do not have applications and infrastructure well documented.

Putting a fancy framework on a slide, presenting metrics on a spreadsheet or simply implementing a portfolio management tool won't accomplish that.
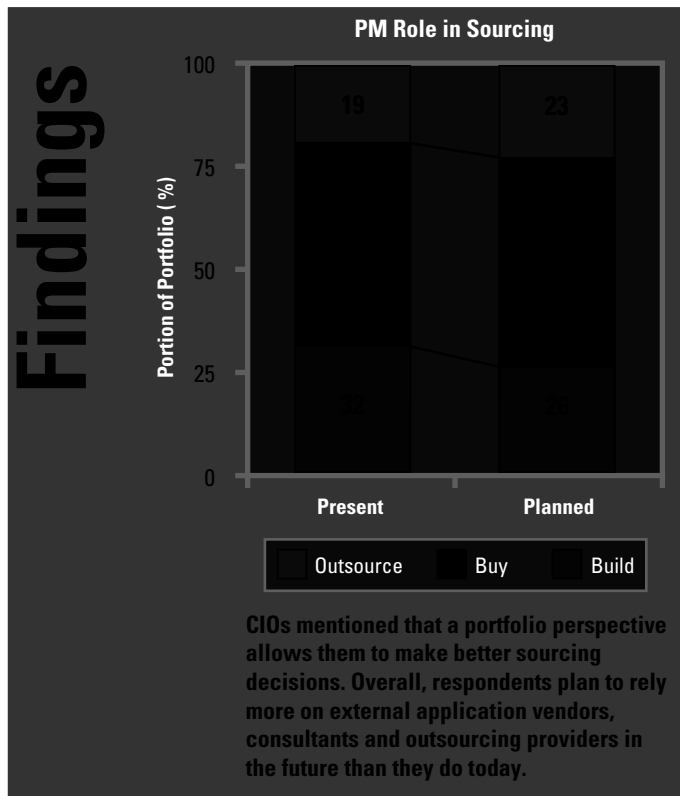
"The biggest value was an organized process that both the business people who ask for the work and the IT people who build to the business requirements understand."

Portfolio Management: A Working Definition

The research team defined IT portfolio management as the combination of tools and methods used to measure, control, and increase the return on both individual IT investments and on an aggregate enterprise level. A portfolio was defined as including all direct and indirect IT projects and assets, including components such as infrastructure, outsourcing contracts and software licenses.
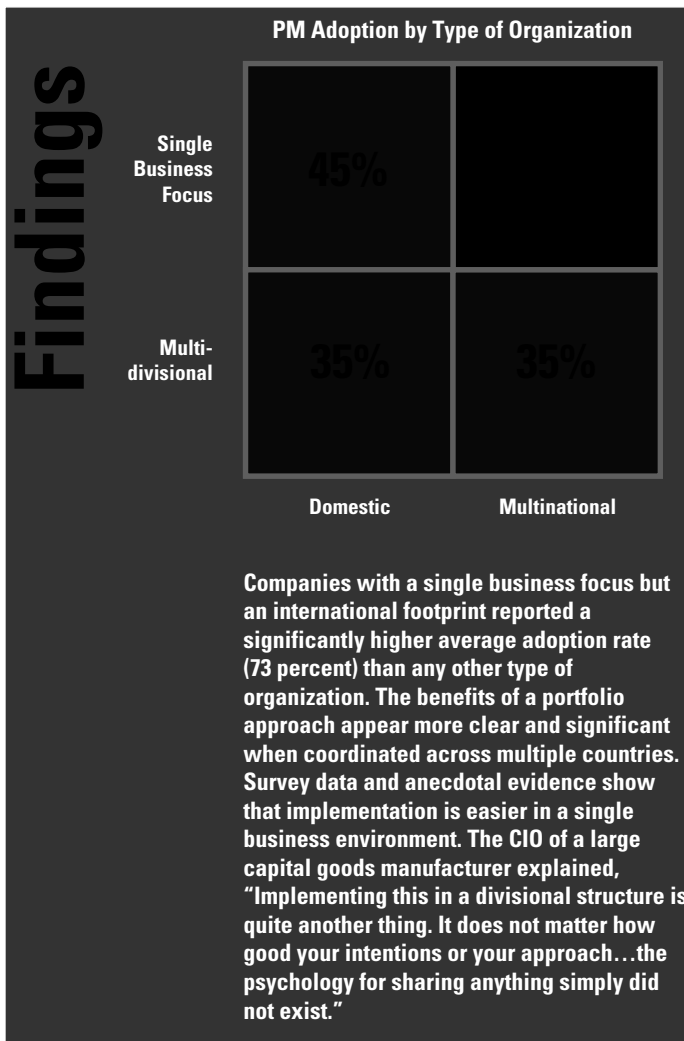
Determine Scope	Distinguish Asset Types	Define Criteria	Develop Factbase	Analyze & Propose	Report & Decide

"Our portfolio management approach has been instrumental in helping us cut costs by 40% in the last two years and increase productivity. We have developed strong application development and project management skills. We are training other parts of the organization in project management techniques. There is recognition in the company of our performance capabilities and it's unusual compared to what I hear from fellow CIOs and other experiences I've had."

Findings

PM Role in Sourcing

Portion of Portfolio (%)

100

75

50

25

0

19

22

23

Present

Planned

| | Outsource | Buy | Build |

CIOs mentioned that a portfolio perspective allows them to make better sourcing decisions. Overall, respondents plan to rely more on external application vendors, consultants and outsourcing providers in the future than they do today.
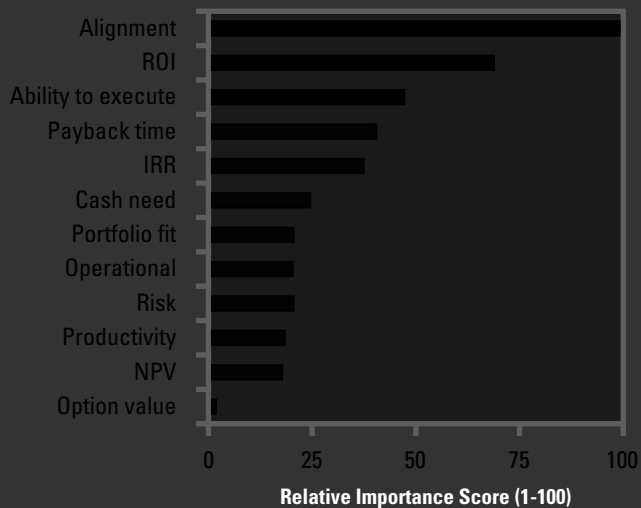
"The idea that the whole IT infrastructure is just a burgeoning, unmanageable, out of control cost area is simply not true. You can manage it. That's one of the big benefits of portfolio management, because it allows you to regain control, ensure alignment with strategy and then make smart day-to-day decisions towards identified objectives."

The disparity between ultimate goals and actual progress does not suggest that IT executives are to blame.

Findings

PM Adoption by Type of Organization

	Domestic	Multinational
Single Business Focus	45%	
Multi-divisional	35%	35%

Companies with a single business focus but an international footprint reported a significantly higher average adoption rate (73 percent) than any other type of organization. The benefits of a portfolio approach appear more clear and significant when coordinated across multiple countries. Survey data and anecdotal evidence show that implementation is easier in a single business environment. The CIO of a large capital goods manufacturer explained, "Implementing this in a divisional structure is quite another thing. It does not matter how good your intentions or your approach…the psychology for sharing anything simply did not exist."

Findings

Investment Approval Factors

Factor	Relative Importance Score (1-100)
Alignment	100
ROI	~70
Ability to execute	~47
Payback time	~40
IRR	~37
Cash need	~25
Portfolio fit	~21
Operational	~21
Risk	~21
Productivity	~18
NPV	~18
Option value	~2

Relative Importance Score (1-100)

The chart above shows the weight of IT investment decision-making factors, relative to the one ranked number one (alignment with business objectives).

Investment Proposal Decision-Makers

Decision-Maker	Respondents (%)
CEO	62
CFO	23
Finance Committee	8
Line Executive	6
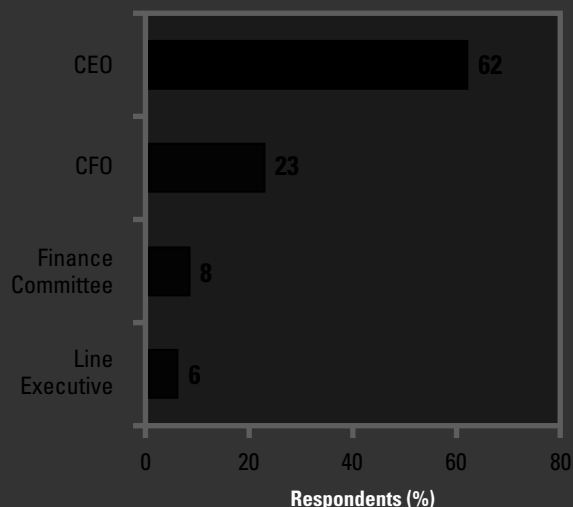
Respondents (%)

A majority of respondents (62 percent) say their CEO ultimately signs off on IT investment proposals. Most organizations have a threshold amount at or after which formal project sign-off is required. Specific reported thresholds vary widely from as low as $5,000 to as high as $5 million per project. The average threshold is $354,000, while the median is $100,000.

One CIO said about the impact of ITPM: "It has allowed us to step outside the boundaries of traditional budget constraints. When we can talk the language of a CFO with a proposal that says here's a 25% internal rate of return, regardless of what your budget is, it's hard to find a business person to say they don't want to fund that."

Slicing the IT Portfolio

The rise in interest in the portfolio topic has produced a number of advocates for specific frameworks or methods with which to segment an IT portfolio. The study results support the overall importance of investment segmentation but do not point to any specific framework as generally more effective. The key takeaway is that not all investments ought to be evaluated along the same criteria. It may not make sense to set financial return targets for a network security application, but rather measure its performance operationally, in terms of percentage of intrusions identified and blocked.

57 percent of respondents say they apply some type of project classification when it comes to allocating budget. The largest group among these respondents segments and reviews proposals in terms of their business purpose. Common categories are profit improvement, cost savings, infrastructure support and applications for specific business objectives. One CIO described how state level regulatory requirements for his industry have implications for IT. Nearly all respondents in this group used a portfolio category called "Mandatory." A smaller group evaluates projects separately by functional area, such as sales, manufacturing or customer service.

The survey data did not point to any prevailing portfolio breakdown or categorization method by industry. Balancing an IT portfolio appears primarily a company-specific function, driven by strategies pursued or age of assets.

"The biggest barrier (to managing the IT portfolio) is educating the IT staff on building a business case justification for making changes, versus just wanting to please the client."
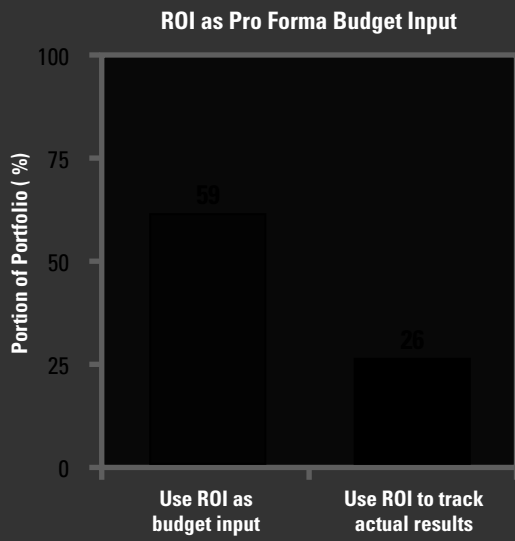
Findings

Portfolio Software

Respondents (%)

Use portfolio software	14
Plan to use in next 18 months	31
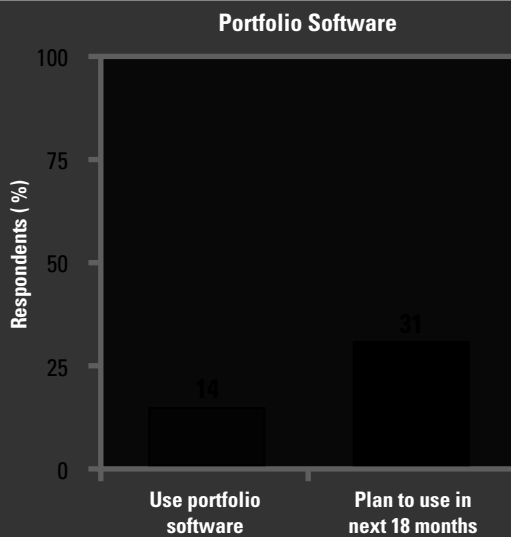
Lack of resources to gather data and conduct analysis ranks high on the list of implementation hurdles. So what would be better than an automated software application to track and monitor IT portfolio data? A product niche has emerged, currently served by perhaps a dozen dedicated software companies.

A growing percentage of respondents find that such software can help establish portfolio discipline and save time gathering and analyzing data. Of course, an application alone will not provide insight and results. Factors such as executive alignment, trust, data quality and analytical rigor are prerequisites for any portfolio software application to add value.

Findings

ROI as Pro Forma Budget Input

Portion of Portfolio (%)

	59	26

- 100
- 75
- 50
- 25
- 0

Use ROI as budget input

Use ROI to track actual results

ROI is most commonly used as pro forma input in budget calculations and substantially less so to measure and track actual results after investments have been made.

Portfolio Management Capability

|		HAVE %	PLAN %	GAP
1	Track benefits after investments have been made	25	65	40
2	Manage projects and assets as a portfolio	42	78	36
3	Define and document IT projects and assets	55	90	35
4	Have success criteria to evaluate projects	45	79	34
5	Use investment results to improve decision-making	54	85	31
6	Centrally track key project and asset information	48	79	31
7	Have methods to evaluate investment proposals	53	82	29
8	Process to evaluate business objectives alignment	47	75	28
9	IT requirements part of strategic planning process	48	74	26
10	Weighted score to rank IT projects	23	49	26
11	Measure value through full project lifecycle	25	50	25
12	Centralized PMO to coordinate IT projects	55	76	21
13	Process to roll up IT spending into central budget	57	74	17
14	Automated software to monitor IT portfolio	14	31	17
15	Use Earned Value as project metric	11	22	11

Project data is codified and logged in a central database.

"First, (IT portfolio management) instills the discipline of making sure that we are investing in those projects that are floated by the needs of the business and create a tangible return as evidenced by the business case that has to be developed. At a later stage, that discipline then leads to not just evaluating projects on the front end, but then comparing what the actual performance is on the back end to make sure we're actually achieving what we set out to do."
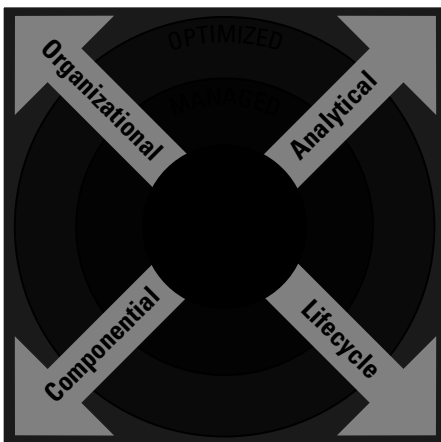
A Lifecycle Perspective on Portfolio Value

Only one out of four respondents measures IT value through the full lifecycle of a major project yet it ranks high on the list of most sought after portfolio capabilities. The figure below shows the three main stages of a project: plan, deliver and maintain.
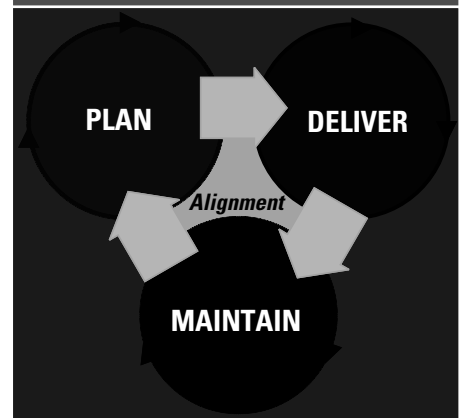
**In portfolio context, taking on such a perspective matters for three reasons:**

● First, interviews showed that several successful ITPM practitioners followed the different stages of the lifecycle to phase capability adoption. Says one respondent, vice president of Information System at a consumer goods company: "We started portfolio analysis by looking at new projects only. Next year we want to include existing ones as well."

● Second, success metrics should change from one phase to the next. The Plan phase often focuses on NPV and ability to execute, the Deliver phase could track earned value and alignment with changed business goals, whereas Maintain may look at employee productivity.

● Third, CIOs should be able to analyze the balance and success of a portfolio as an aggregation of projects across different stages. Do projects systematically get bogged down during delivery? Do maintenance costs show a trend of creeping up on a per unit basis?

Portfolio Management History

IT portfolio management has its roots in both financial and corporate portfolio theory. Though it borrows many of the key concepts of both, there are also ways in which managing an IT portfolio is fundamentally different.

Financial Portfolio Management

Modern Portfolio theory was first articulated by Markowitz in 1952.[5] The primary concept was how an investment decision-maker can lower risk for an expected return by creating a portfolio of diverse assets. Risk, or the uncertainty surrounding the expectation that a future cash flow will occur, measured as standard deviation, helps assess the attractiveness of an individual investment. Diversification evens out this project or asset-specific risk. What is left is the risk of the portfolio itself. An *efficient portfolio* maximizes aggregate expected return for a given standard deviation.

Modern Portfolio Theory

Expected Return On Investment (r, %)

Standard Deviation (σ, %)

100% Investment B

Portfolio of 40% B and 60% A
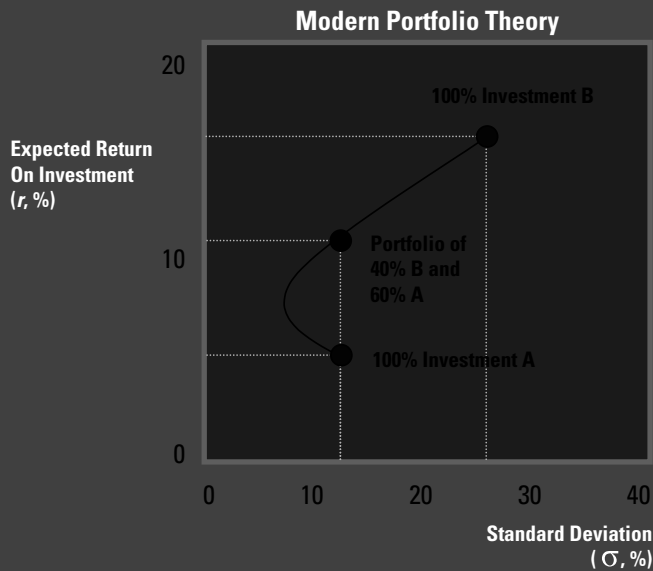
100% Investment A

The analogy for IT is limited for four main reasons:

1. Financial portfolio theory exclusively looks at financial returns. In an IT environment, operational and regulatory demands often overrule return on investment (though consequences of noncompliance could be expressed as a negative impact on returns).

2. In finance the maximum risk is to lose the initial investment (save for shorting and certain derivatives) and limited to a particular asset. In IT, a failed project or neglected maintenance can have severe implications for ongoing business operations.

3. In finance the goals of assets are largely interchangeable. IT projects serve specific operational goals.

4. Financial portfolios consist mostly of liquid, securitized assets. IT projects and infrastructure can't be traded easily (if at all), have little to no salvage value, and often carry significant exit costs.

Corporate Portfolio Management

In the late 1960s, the concept of corporate portfolio management became popular. Several frameworks were proposed to enable executives to better allocate resources within the organization. As an example, the growth share matrix plots market shares (relative to the largest competitor) of the businesses components relative to their respective growth rates. This portfolio view enables management decisions: products or business units that are losing market share and cash should be eliminated, and income from the cash-generating products or units should be transferred to high-growth market opportunities.

Here, the analogy for IT works better. Too often, resource allocation decisions are made on a project-by-project or departmental budget-by-budget basis, rather than looking at what is in the best interest of the firm overall. In addition, it forces discipline to identify cash-needy projects or assets that produce little to no value.

"We spent a year conducting a portfolio analysis. Once done, we created a detailed report, put it in a nice envelope and sent it to our senior business managers. I expected us to get recognized for being proactive. But nothing happened. Nobody read the report. We drew an important lesson not to forget about the people part."

Research Methodology

Hypothesis

The formal research objective was to test five specific hypotheses:

1) **The majority of IT leaders are familiar with ITPM; a lack of awareness is not an issue.**

2) **Despite awareness, the majority of organizations do not apply ITPM methods.**

3) **The majority of companies that do apply ITPM are not as effective as they could be.**

4) **The minority that do apply ITPM successfully are achieving relative performance gains.**

5) **Companies unable to implement ITPM effectively are held back by similar obstacles.**

In parallel, the team wanted to find out if there were any broadly applicable stages of ITPM effectiveness. By comparing ITPM application data with responses regarding implementation hurdles, a general ITPM adoption trajectory was identified, and along with it, best practices to help organizations accelerate along that path.

Survey and Interviews

The data needed to test the five hypotheses was gathered through a mass survey and targeted interviews. A survey called "IT Portfolio Management Challenges and Best Practices" was mailed to and made available on the Web to top IT executives at U.S.-based Fortune 1000 companies. Both prior to and after sending the survey, the research team interviewed approximately 20 CIOs from a representative sample of organizations to gather more detailed examples of implementation hurdles and best practices, as well as to validate the team's interpretation of the survey results.

Sample: Respondent Demographics

The team received completed surveys from 130 respondents. More than 90 percent of the respondents are corporate CIOs, most often in multi-divisional organizations with a domestic focus. The average respondent has 17 years of IT management experience. Over 50 percent of respondents report directly to the CEO, followed by CFO (31 percent) and COO (22 percent). The average respondent's organization generated $8 billion in revenues last year and spent 2.9 percent of those revenues on IT. In total, the survey responses were responsible for approximately $30 billion in annual IT spending.

Glossary of Financial Terms

Return on Investment (ROI)	**Definition:** Often defined as the total quantitative savings or return, in hours, dollars, or other measurable units, generated by an improvement effort, divided by the total cost of that effort. **IT application:** What is ROI? Ask several executives and expect to get several different answers. The definition may or may not include the time value of money, so clarity on what definition is used is important. Even by approximation, its usefulness depends on the validity of underlying assumptions. IT staff that use ROI often do so as a budgeting input rather than as performance feedback.
Net Present Value (NPV)	**Definition:** The NPV is the sum of the discounted cash flows expected from a business project, less the investment amount. The cash flows are discounted at the firm's cost of capital. **IT application:** NPV is used to evaluate and select among investment proposals. In theory, projects with NPV greater than zero should be funded. In practice, NPV is one component of the investment decision and discussing NPV assumptions should help flag and address unrealistic expectations.
Internal Rate of Return (IRR)	**Definition:** The compounded annual growth rate of a project's net cash flows. Also defined as the discount rate where the NPV of the project is zero. **IT application:** Helps prioritize investment proposals. In theory, a proposal with an IRR greater than the cost of capital should be accepted. Project managers tend to prefer IRR over NPV as the time factor of the latter is less intuitive. A potential pitfall of only looking at IRRs is that they don't show the relative size of the opportunities.
Earned Value Analysis (EVA)	**Definition:** Metrics designed to quantify the actual work done on a project compared to the amount of money actually spent, and the original budget plan. **IT application:** Helps forecast and measure the implementation performance of an IT project. Used mostly on large efforts, such as an ERP system implementation, in which multiple teams and parts of the organization are involved in a large program.
Real Options	**Definition:** The value of investing in a project that will enable additional opportunities in the future. **IT application:** Real options enable executives to value management flexibility and additional follow-on investment opportunities. For example, by successfully completing a pilot enterprise data warehouse (EDW) project the downside risk of a large follow-on EDW project can be reduced and the upside potential can be increased. In addition, an EDW once complete might enable CRM and SCM. These are all real options that should be factored into the initial pilot EDW project investment decision.

For more information visit our websites:

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