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Integrated IT Management Drives Efficiency

by Margo Visitacion, Phil Murphy, and Thomas Mendel, Ph.D.

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Integrated IT Management Drives Efficiency

Role-Based Dashboard Views Will Make It Happen — Get Ready

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EXECUTIVE SUMMARY

Dashboard-type views permit business managers and executives to see business events, to understand their subsequent impact, and to take corrective action. It is ironic, then, that IT — the enabler of many dashboard views — lacks any comprehensive view across the existing applications, infrastructure, and planned projects that encompass its sphere of responsibility. Infrastructure-monitoring software like BMC Software's PATROL or IBM Tivoli has existed for a decade or more, and two emerging disciplines — application portfolio management (APM) and project portfolio management (PPM) — provide visibility within their individual domains. However, these colloquial views — where they exist — are insufficient. Forrester believes that convergence across these three areas in the next 24 to 36 months will culminate in integrated IT management (IIM) dashboards, which will enable IT management to reduce IT budgets by as much as 30% while realizing value increases of 10% to 15% in the first year. CIOs and their direct reports have a wake-up call: Organize for visibility and manageability or be replaced by someone who understands the value that this emerging technology represents.

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NOTES & RESOURCES

Forrester spoke with more than a dozen large organizations about their attempts to improve visibility across their organizations.

Related Research Documents

- "Application Portfolio Management Tools"
April 12, 2004, Market Overview
- "IT Trends 2004: Enterprise Infrastructure Management"
November 25, 2003, Planning Assumption
- "Processes And Tools — The Nuts And Bolts Of Project Portfolio Management"
April 11, 2003, Planning Assumption

IT MANAGEMENT HAS BEEN OPERATING BLINDLY

Conversations with IT management in organizations around the globe make one point very clear: IT management is frustrated with its inability to see fact-based views of IT activity. This includes demands on resources and plans for new initiatives, the cost and effort expended to maintain existing applications, and the performance and consumption of infrastructure resources on which the applications operate. Lack of information to manage these areas continues to stymie CIOs in answering very basic questions, such as “What is everyone working on?” and “Why does that project require more funding?”

Most IT organizations typically cover IT operations monitoring and/or project management status reporting reasonably well. But IT remains blind to major activities that can drain a budget, such as maintenance. While the idea of having one consolidated view is relatively simple, the response from tool vendors to provide this view has been feeble at best. In an attempt to answer this need, some PPM vendors have pasted an IT governance label onto their project management tools. Still other management tools offer slices of information in various types of management reporting. But a consolidated view across all areas of IT management remains elusive.

THE STATUS QUO IS NO LONGER SUFFICIENT; IIM IS THE SOLUTION

Forrester believes that the initial seeds of a solution exist today and that early vendor alliances that will make this solution possible are already beginning to occur. While the first complete solutions are 24 to 36 months away, the building blocks for them already exist. As such, they are worthy of management attention — today, for the immediate benefits that they bring individually and tomorrow, as the foundations of what will be. We define IIM as:

A set of tools and processes that present dashboard-level views of IT activity, centralize the collection and distribution of work requests, and enable resource allocation according to business needs to reduce much of the financial waste in IT today.

IIM is the natural progression of the building blocks available today, in PPM, APM, and enterprise infrastructure management (EIM), into a single, cohesive dashboard that provides role-based views of IT activity. Visibility across these building blocks provides management intelligence about planned and ongoing IT resource allocation and consumption, and it bolsters decision-making about project choice with fact-based metrics about the existing applications.

WHAT IS AVAILABLE TODAY? BUILDING BLOCKS AND SILOS OF INFORMATION

IIM will draw summary information from the individual silos of APM, PPM, and EIM for analysis in compound data views across the silo areas. IIM will also provide links that enable drill-down into the individual repositories. The repositories serve individual purposes:

- **PPM applications look at the future, starting now.** PPM manages the prioritization, resourcing, and interdependencies of new initiatives. It acts as the central repository for data about future plans; the available resources to work on them; and these resources' skill sets, current activities, and scheduled availability dates. Armed with this information, the project management office performs project prioritization and selection based on resources and goals that come out of strategy sessions and the IT portfolio management (ITPM) process. PPM provides visibility into all aspects of planned developments by rolling up ongoing project management information. When combined with demand management, PPM allows managers to estimate capacity based on resource and budgetary constraints.¹
- **APM measures the effort to support applications.** APM analyzes and optimizes the resources spent to maintain existing applications. It reads source code to record the relationships among application artifacts to enable impact analysis and other valuable information views.² The application knowledge base, thus constructed, develops metrics, such as application size, artifact inventory, relationships between artifacts, and application complexity, directly from the source code. It also serves as the collection point for related business information like labor, which can drive application cost calculations. Application costs can be aligned with the application owners within the business. The expanded metrics permit the comparison of applications with one another and across time. For example, did application complexity increase or decrease from this year to last year? Corporations that are about to, or have already, outsourced their application maintenance are a fast-growing market for APM vendors for the visibility that APM provides.³
- **EIM creates balance.** By monitoring the infrastructure resources consumed by various applications at runtime, EIM provides visibility into the consumption of hardware and software resources across the whole infrastructure stack (networks, clients, servers, and applications), including asset management, change and configuration management, infrastructure monitoring, and service-level management. Both APM and IIM provide visibility into data at an application level.

Interestingly, ITPM, a subset of PPM, is a view of IT purely from the planning and strategic level. It ensures strategic and tactical balance, focusing management attention on IT spending with the aim of balancing IT spending to support the organization's business priorities, to maximize return on investment, and to minimize risk. ITPM is analogous to the way that financial advisors balance client investments across many types of available financial instruments to meet the investment goals of their clients.

Given the breadth and depth of information within the silos, it is evident that an IIM effort spanning them all is a large and complex undertaking. Such an effort in any company is complex enough to fail if it is tackled as a single, large implementation. Consequently, Forrester believes that IIM will evolve in a bottom-up, building block fashion, rather than being created all at once in a top-down fashion. Clients involved in early IIM implementations will focus on one, or perhaps two, of the silos — the most troublesome — while building toward the bigger picture.

Note that although our focus is on these areas today, IIM will be constructed in such a fashion as to allow new sources of information to be added simply. Candidates may include more granular software development life-cycle (SDLC) information, IT asset management, and hardware/software contract management information (see Figure 1).

WHO USES THE BUILDING BLOCKS TODAY — WITH WHAT RESULTS?

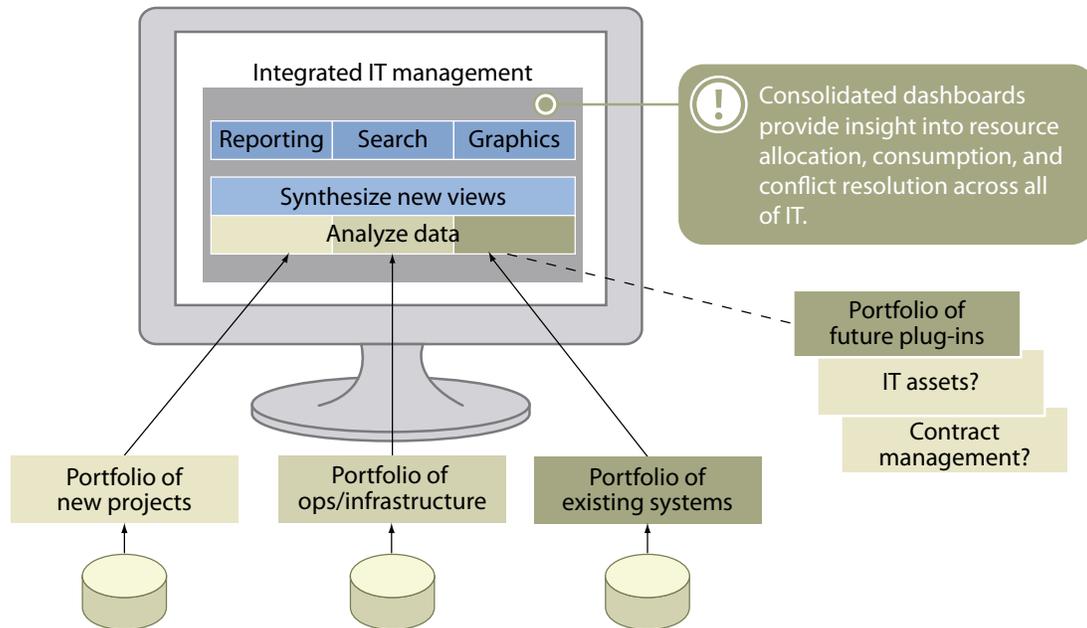
The technology that composes the building blocks of IIM is an eclectic mix — some is quite mature, even though it has only recently been put to use for portfolio views. Despite the newness of the portfolio markets, customers are realizing remarkable returns on investment.

PPM Manages Resource Allocation And Consumption For New Projects

PPM provides companies with the opportunity to select the requisite projects to meet strategic goals while balancing the ongoing work needed to be operationally sound. Having a consolidated view of the project pipeline allows companies to realize savings of 20% to 45% by eliminating redundant projects, taking corrective action on those running off course, and selecting projects that provide the strongest paybacks.⁴ Companies that employ PPM are seeing:

- **Impressive cost savings.** A major global conglomerate with interests in areas ranging from utilities to financial services decided to employ PPM to make better use of existing resources and to make better outsourcing decisions, as well as to demonstrate greater IT value. Implementing PPM was a multiyear project; however, the company saved almost \$5 million in the first year by realigning headcount and eliminating redundant projects.
- **Improved project prioritization.** Another financial services firm used PPM to manage a portfolio of several hundred million dollars. The company experienced savings of close to \$6 million in one year by increasing the discipline in project prioritization practices. These savings were realized in a number of areas, one of them being outsourcing. The company feels that, due to increased visibility, improved collaboration, and communication practices, overspending and poor project risk management practices are greatly reduced.
- **Increased visibility resulting in project success.** A US-based wireless hardware manufacturer employed PPM to help manage a project portfolio containing several thousand projects. Through a combination of improvements in project management practices that ranged from selection to execution and a robust PPM application, the company managed to deliver 100% of its strategic projects successfully (on time, on budget, and meeting expectations) while trimming its IT budget by more than half.

Figure 1 IIM Is The Obvious Extension Of Portfolio Views



Source: Forrester Research, Inc.

APM Contains The Cost Of Existing Systems

APM reduces the cost of maintaining existing applications by addressing several issues that plague IT management today. One issue is that IT suffers from a dearth of application knowledge — the original authors move on to new challenges, staff turnover contributes hugely, and IT rarely retires any application. Another is the volume of business change and regulatory mandates that continue to drive application changes at a volume that exceeds IT's ability to respond. In the face of these issues, the budgetary pressures of the past five years have seen IT budgets cut to the bone.

Without some major efficiency gain, internal development will give way to outsourcing.⁵ Early customer references for APM are leveraging it to:

- **Reduce operational costs and increase efficiencies of IT staff.** Merrill Lynch saved several million dollars by building a hybrid APM/EIM system, which it calls the OS390 Data Warehouse.
- **Reduce maintenance costs by 20% to 30%.** Iberia Airlines and Abbey National both claim increases in programmer efficiency and corresponding reductions in maintenance costs of between 20% and 30% due to APM.

- **Monitor outsourcer activity against the client's applications.** A French telecommunications company uses APM to monitor what outsourcers do to its application systems and as the basis for establishing and monitoring service-level agreements (SLAs).
- **Manage the allocation of IT resources to business units.** Alitalia is currently inventorying and allocating applications to the 11 business units that own the company as a means of making the business units fiscally autonomous.

EIM Monitors Operational Activity To Reduce Costs

If approached holistically, EIM improves overall IT service quality (as measured by customer-focused SLAs), while at the same time significantly reducing the overall service delivery costs. The majority of savings come from discovering a number of overlaps in the products that companies use to manage the different infrastructure domains. Customer reference accounts note that:

- **A visible inventory enables a reduction of software.** With an accurate inventory provided by an EIM tool, a Europe-based financial services company was able to reduce the volume of software licenses, providing a staggering 30% savings in software licenses alone. The project resulted in €12 million in savings.
- **Newfound visibility regains control.** A global manufacturing company headquartered in Germany realized that decentralized spending on monitoring tools for different infrastructure domains had spiraled out of control. With visibility came the ability for corrective action — the tool showed overlaps of up to 80% in some cases. The company reduced the number of tools used from approximately 50 down to 10. The result: a €2.5 million reduction in software licenses and a €6 million reduction in operating costs.
- **Recouped resources accomplish other tasks.** After successfully reducing its software licenses inventory, a globally operating, US-based petrochemicals company focused on improving its service-level management, change management, and configuration management. Although the attempt proved to be a major effort for all parties involved, the result nonetheless far outweighed any negative points. Customers are now much more satisfied with the IT services that they receive (as measured by higher service levels and higher customer satisfaction ratings), and at the same time, the company achieved a total of \$16.5 million in savings.

WHAT TRENDS ARE LAYING THE FOUNDATION FOR IIM?

Silos of operational, new project, and existing system data must eventually come together to become more valuable than the sum of their parts. When that happens, customers will discover the value inherent in compound data views across these areas. IIM will draw together the disparate portfolio views into a framework that allows companies to manage more effectively by calling out the areas

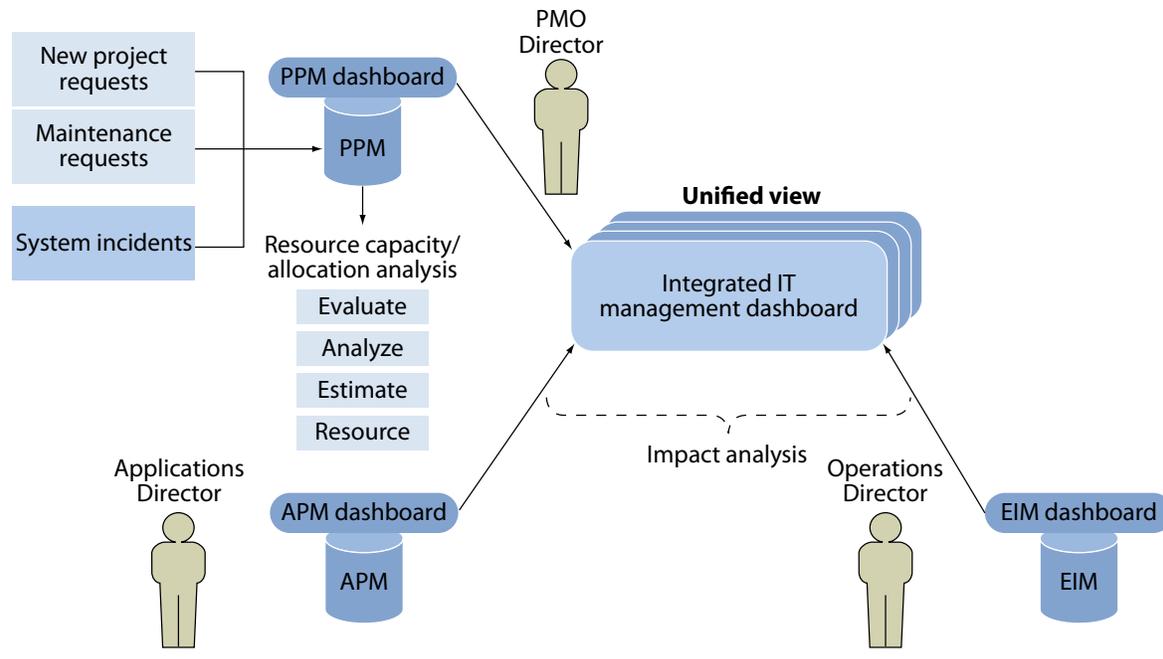
that need management attention, illustrating the relationships between the pieces of information, developing whole-system costs as input for evaluating future investments, and providing common methodology and tools to manage resources more effectively. IIM is still in its infancy, but we expect it to mature in the next 24 to 36 months, driven by the following trends:

- **IT needs to balance resources across organizational boundaries.** The value in any type of portfolio management stems from the ability to see and then balance resource capacity with resource consumption. Yet IT uses several disconnected systems (manual and automated) to receive work requests and dispatch workers. When systems fail, a cross-disciplinary team is often the only way to fix it. While internal IT organizations are years away from collecting granular data on skills and performance, short-term gains are possible by tracking availability. Doing this along with a uniformed work dispatch system will enable more effective resource management.
- **Application rationalization booms, driven by APM capabilities.** The sheer volume of existing applications is daunting. The effort to maintain existing applications consumes 76% of IT budgets.⁶ Yet IT can't fully rationalize requests for a major system upgrade because of several questions. Is the system well structured or hopelessly complex? Is it stable or in an endless loop of repair? Is it able to scale to accept higher business transaction volume, or does it already exceed the capacity of its hardware and operating software? It is sheer lunacy that IT has no way to consider whether to enhance a system.
- **Service orientation will demand end-to-end service management.** While IT has historically designed and built systems as silos of functionality, the advent of service orientation will obviate system boundaries as legacy transactions are wrapped as services and are invoked from anywhere. Operations managers will be forced to provide end-to-end service levels for business-critical applications. Single-domain management (e.g., within a subset of servers or networks) is no longer sufficient. Instead, companies need to look holistically at all the various service components to provide an end-to-end view. This favors the larger, more integrated vendors in the infrastructure management space, such as IBM Tivoli and BMC Software.

WHAT WILL IIM LOOK LIKE WHEN IT GETS HERE?

IIM will present role-based views via preprogrammed reports, summary graphics, and a search-and-drill-down feature to chase specific areas of interest. Each of the building blocks (APM, PPM, and EIM) will contribute to higher-level analysis and reporting and will also provide links to enable the drill-down capabilities. Process change is an inevitable part of any successful technology change — IIM will trigger process change analogous to the change that Internet visibility brought to eCommerce. Look for:

- **Centralization of work requests that provides a unified view.** Whether a new project, a maintenance request, or an operational failure, requests for work (RfWs) will consolidate into a single system to give managers across IT a truer sense of the issues that arise and place demands on IT resources.
- **Enterprisewide views that permit cross-enterprise resource allocation.** Issues that require resources from several IT areas are visible, as are the scheduling conflicts that would normally ensue. Enterprisewide visibility enables managers to triage the incoming RfWs collaboratively with managers from other affected areas. Issues are addressed as the business sees them — as a broken system, not as a series of unrelated tasks with no cohesion. The artificial IT departmental boundaries no longer encourage the interdepartmental conflict that is so common in IT today.
- **Whole-task prioritization to promote better IT delivery to the business.** IT management and business management can view concurrent and conflicting priorities at the business issue level. A business problem is either wholly solved or it is not, and the end result is better service to the business.
- **Metrics development that provides the basis for continual improvement.** With a centralized repository of RfWs, managers gain a bevy of IT metrics — historical views of similar projects will show comparative effort, cost, and resource usage that in turn provide a wealth of information to guide future projects.
- **Preset reporting, rich graphics, and search capabilities that provide visibility.** The most visible part of IIM is the dashboard that will present IT RfWs, relative priority, resource allocation, schedules, and completed activities via role-based views at the touch of a screen. Reports and graphics convey detail and summary information, while the search capability permits drill-down into areas of interest (see Figure 2).
- **CIOs showing executive management what's really happening in IT.** The biggest fault of IT management to date has been its failure to build the kind of instrumentation into IT that can allow management of IT resources in the same way as other corporate resources. When the CIO can demonstrate keen insight drawn from visible activity metrics in a way that the executive management understands, the CIO will no longer have to beg for a seat at the table — and will be invited as a welcome guest.

Figure 2 Unified Work Process

Source: Forrester Research, Inc.

HOW WILL THE VENDOR LANDSCAPE CHANGE?

Parts of IIM have been building for some time. The roots of EIM go back to the days of all-mainframe computing. APM is based on the impact analysis and application-mining tools of the 1990s. PPM evolved from the consolidation of the enterprise project management vendors and the professional services automation firms that occurred in the early 2000s. What's new today is that IIM is pulling together the building blocks to provide a unified view, similar in concept to "urbanisme" in France, "Bebauungspläne" in Germany, "city maps," and "city planning," with variations in countries throughout the world.⁷

Although it is true that, as of January 2005, the three building blocks of IIM remain individual silos of information, firms should expect the volume and intensity of acquisitions to increase steadily in 2005 and reach fever pitch beginning at the year's end.

- **PPM vendors will integrate with help desk and APM vendors.** PPM vendors like Compuware, Mercury Interactive, Primavera Systems, and PlanView have built integration with ERP and financial applications to enable resource costing. More recently, PPM vendors are starting to integrate with help desk and performance management applications to consolidate work requests into a single interface to provide greater insight into capacity management.

- **APM and PPM will join forces to offer new and existing application views.** PPM vendors have misled customers by claiming to offer APM when what they truly offer is the ability to record metadata at a system level — a far cry from true APM. Expect the two to come together. PPM's project prioritization will be greatly enhanced by metrics that convey the complexity of a system about to undergo a major overhaul. More holistically, APM can provide the data that supports decisions on the fate of an application, which may drive certain project decisions. Expect BluePhoenix Solutions, CAST, HAL Knowledge Solutions, Information Balance, Metallett, and Relativity Technologies to be attractive partners or acquisition targets for the likes of Business Engine, Niku, Pacific Edge Software, PlanView, and Primavera.
- **Increased acquisitions expand management capabilities.** This trend started with packaged application vendors, such as PeopleSoft (now Oracle) and SAP, entering into the PPM space, and the market is now even more crowded. Vendors with tools across the SDLC are also entering the fray as Compuware (Changepoint), Mercury (Kintana) and most recently, IBM Rational (Systemcorp) have completed acquisitions of niche PPM vendors. The packaged application acquisitions bring depth on the HR and financial management side of IIM, while SDLC vendors take metrics from coding and testing and elevate them to the project management level. What's missing (for now) is a true bridge with EIM, although vendors like Trough Technologies and IBM are in the early stages of bridging that gap.

Expect a number of vendors to be both the perpetrators and the victims of consolidation via merger and acquisition as the buying public realizes the value of one consolidated dashboard and as vendors scramble to fill in the missing pieces in their suites (see Figure 3). Vendors like IBM, Mercury, and Computer Associates (through its partnership with Niku) are expected to be leaders out of the gate, but expect other vendors to offer products in one of the areas and thereby upset the balance. Vendors like Micro Focus, Peregrine Systems, Relativity Technologies, and others are poised to offer products that can be building blocks for IIM. For a complete IIM solution, Forrester sees many vendors vying to put suites together and be first to market.

NETTING IT ALL OUT: IIM'S TIME HAS COME

To remain a viable business partner, IT management must develop the sort of metrics that enable other managers to manage their resources, be they resources widgets, products, or prospects. Failing that, CIOs will lack the management information required to sit at the executive level.

If IT management is to survive calls for outsourcing, it must improve the information on which the company bases business decisions. To do that, IT management at all levels needs better information about spending and human and technical resources. IIM will provide the information that IT needs to convince the business that it can manage resources as well as any resource manager in the company and that it possesses the technical skills to deliver and maintain a modern and cost-effective technical environment.

Figure 3 Current Vendor Alignment

Vendor	ITPM	PPM	EIM	APM
Allen Systems Group				✓
Artemis International Solutions	✓	✓		
BluePhoenix Solutions				✓
BMC Software			✓	
Business Engine	✓	✓		
CAST				✓
Computer Associates			✓	
Compuware	✓	✓		
Expert Choice	✓	✓		
HAL Knowledge Solutions				✓
Hewlett-Packard			✓	
Information Balance				✓
ITM Software	✓	✓		
Mercury Interactive	✓	✓	✓	
Metallect				✓
Microsoft		✓		
Niku	✓	✓		
Oracle/PeopleSoft	✓	✓		
Pacific Edge Software	✓	✓		
PlanView	✓	✓		
Primavera Systems	✓	✓		
Troux Technologies			✓	
UMT	✓			

Source: Forrester Research, Inc.

RECOMMENDATIONS

PREPARE FOR IIM

IIM is coming, but it will evolve slowly over the coming years and will require some effort to properly design and implement.

- **Start somewhere, prioritizing your current pains.** Choose the area that presents the most difficulty today and choose a component to implement — PPM, APM, or IIM. As that effort succeeds, savings from it may fund the next step.
- **Think evolution, not revolution.** Evolution is preferable to big bang. The individual pieces of IIM are fairly nascent markets, maturing in a single discipline, even as they meld toward IIM. Think more in terms of IIM in several years, with IM, APM, and PPM as building blocks to get there.

- **Beware of snake oil salespeople.** Software offerings seem to materialize as soon as someone quantifies a need. IIM is a future goal and not a current offering. Even among PPM, APM, and IM, vendors are selling cross-compatibility that does not exist: PPM vendors do not have APM functionality, IM and APM are different disciplines, and vendors have only begun to explore the synergy between PPM and APM. Caveat emptor!
- **Consider and plan for implementation issues.** Adding programmer labor costs and business unit owners to APM helps align costs to business units — but do you collect programmer labor today? Process changes and data feeds are an inevitable part of implementation — think ahead to save time. Plan what you will need, and think about where and how to trap information simply and easily.
- **Software without references is a hypothesis.** Customer references are difficult to locate for new software and methodologies — they may not exist for your chosen first step. It isn't necessarily bad to be a beta customer, but vendors should provide hefty incentives for it. If a vendor can't provide a reference, ask for a work-in-progress reference. If it can't provide a work-in-progress reference, then you may be its only customer.

ENDNOTES

- ¹ PPM applications bring support in the decision-making process, linking strategic planning with project execution by bringing visibility to the analysis and selection process. See the March 11, 2004, Market Overview “Portfolio Management Tools.”
- ² We use the term “artifact” to refer to the lowest atomic level within legacy and distributed systems. For example, within a legacy system, artifacts include lines of code, COBOL copybooks, and data elements, whereas in distributed languages, artifacts include objects, components, and other data and source code references.
- ³ APM has even more potential to help outsourcers, given the large number of staff that they employ. But APM also has the potential to affect the way that outsourcing contracts are written. See the July 22, 2003, IdeaByte “APM Benefits Both Sides Of The Outsourcing Contract.”
- ⁴ Focusing on the pragmatic aspects of PPM enables companies to reduce redundancy and prepare for more strategic decision-making in project selection. See the April 11, 2003, Planning Assumption “Processes And Tools — The Nuts And Bolts Of Project Portfolio Management.”
- ⁵ CIOs and IT management will come under increasing pressure in 2005 to streamline bloated application inventories. But to do so, IT management needs some basic metrics so that decisions are not made blindly. See the October 27, 2004, Trends “Trends 2005: Application Portfolio Management.”
- ⁶ On average, 76% of firms' IT budgets go to ongoing operations and maintenance, as opposed to new investments. See the December 15, 2004, Data Overview “2005 Enterprise IT Outlook: Business Technographics® North America.”

⁷ Strategic cost containment and consolidation of requirements and applications beyond the boundaries of business divisions are key drivers for these individual activities. Cost-cutting efforts of the past few years have added to IT complexity, making it even more difficult to meet business requirements. Increasingly, these older efforts will give way to the IIM principles outlined in this document. See the October 29, 2004, Trends “Trends 2005: Application Strategy Planning.”

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