BEST PRACTICES

June 15, 2006

How IT Must Shape And Manage Demand

by Craig Symons

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Influencing The Behavior That Consumes IT Resources

by Craig Symons
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EXECUTIVE SUMMARY

Good IT governance ensures that organizations obtain the maximum business value from their IT investments. IT demand management is a critical IT governance process that extends beyond merely aggregating requests for IT resources and automating workflow. Best practices in IT demand management: align the supply of IT resources to optimize business value; influence and modify end user behavior by providing meaningful information; and enable a more complete understanding of the costs and tradeoffs associated with the consumption of IT services and resources. This increased transparency leads to improved decision-making and increases the business value of IT investments — the goal of good IT governance.

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NOTES & RESOURCES

We found the following documents useful in the research process.

Related Research Documents

"Optimizing The IT Portfolio For Maximum Business Value"
September 30, 2005, Best Practices

"The Economics Of IT"
June 6, 2005, Best Practices

"IT Governance Framework"
March 29, 2005, Best Practices

TARGET AUDIENCE

Chief information officer, IT operations executive, strategic planning executive

DEMAND FOR IT RESOURCES IS POORLY CONTROLLED

To many CIOs, the demand for IT resources appears infinite. As IT becomes embedded in almost every business process and access to information is expected to be ubiquitous, the requests for new systems, enhancements to existing systems, procurement of new technologies, and support for employees, partners, suppliers, and customers seem endless. This ever-increasing demand for IT resources appears to be immune from business cycles and economic conditions (see Figure 1).

As a result, users still worry that:

- **IT is not always aligned with business strategy.** Despite years of focus, strategy alignment remains top of mind for CIOs. They know that they don't do enough to proactively engage end user stakeholders in IT steering committees and make them accountable for IT funding and prioritization decisions. They know that while they have made progress managing a project portfolio, they're generally not managing the overall IT portfolio — which would help ensure that more IT activities are aligned with strategic business objectives, leading to higher levels of business value.[1]

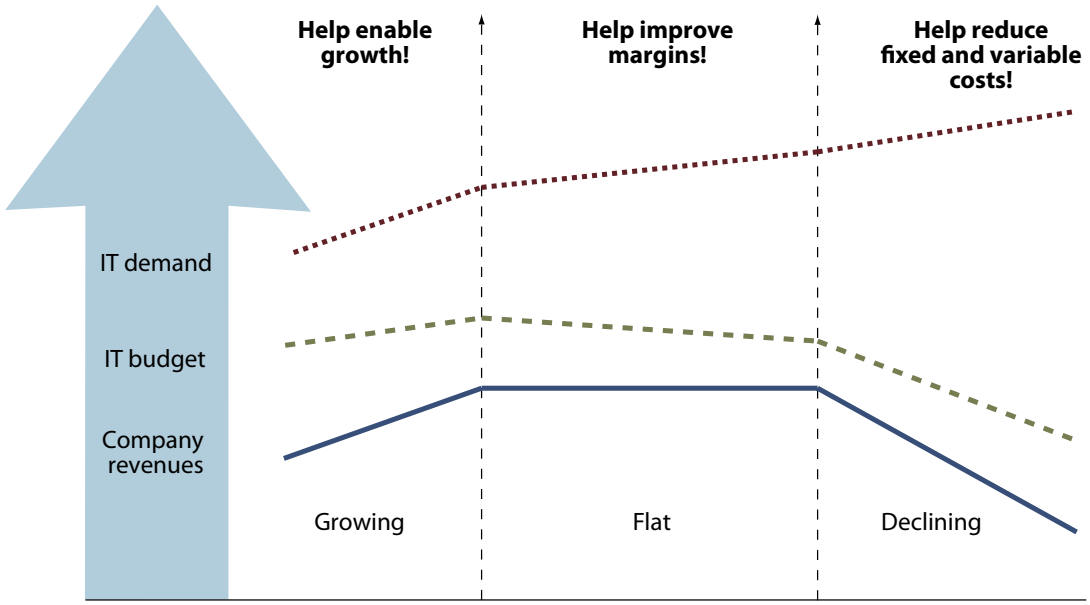
- **IT is not effective enough at deploying resources.** Most IT organizations admit that: they still offer one-size-fits-all services to the business; they do not charge back their services; and they have no mechanism to slow demand other than drawing a line at the capacity limit — when the help desk is busy, project managers are allocated, or budget dollars are exhausted. But IT executives realize that by providing increased transparency into the cost of IT services and implementing tiered service levels, end users are able to make more informed decisions about their consumption.

- **IT is losing its capacity to innovate because of its maintenance burden.** Forrester's most recent spending survey of 404 IT decision-makers revealed a disheartening change: The average percent of budget allocated to maintenance and operations is now 80%, up from 76% in 2005.[2] This is not surprising, as last year's new projects became maintenance and operations (MOOSE) in 2006. The unfortunate result? A smaller innovation capacity — the portion of the budget available to do new work.

IT Must Shape — Not Just Accept — Demand For Its Services

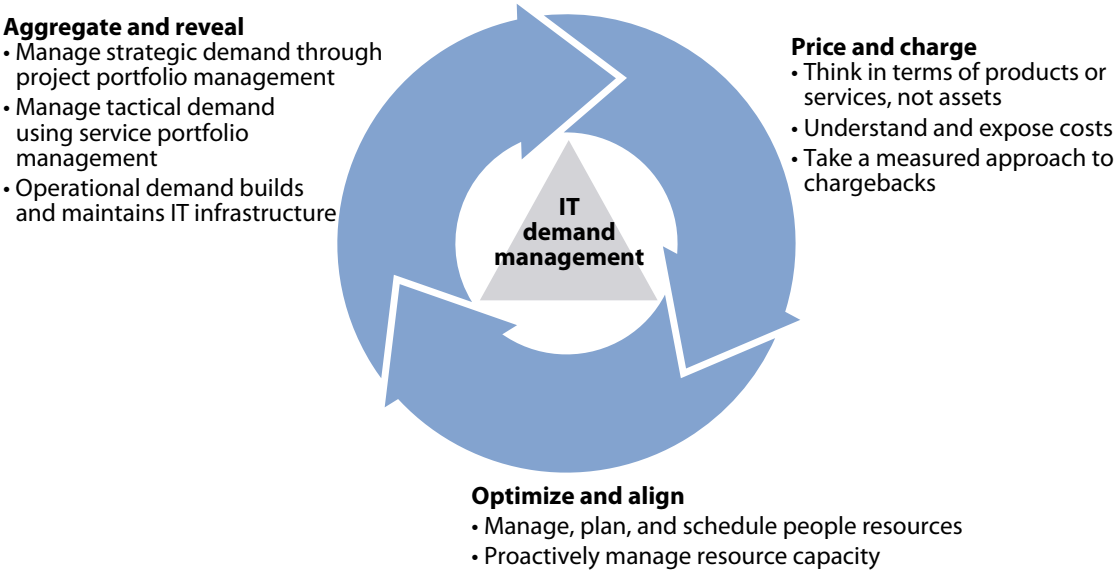
Managing demand is not simply assessing the appetite for IT services. It requires IT organizations to put in place a set of capabilities and processes that: enable true understanding of the business needs and strategies; facilitate meaningful conversations on cost and performance tradeoffs; and deliver a portfolio of services based on this shared understanding and dialogue. To manage demand, IT must (see Figure 2):

Figure 1 Business Demands IT Help Even When Revenues Fall



39660 Source: Forrester Research, Inc.

Figure 2 The IT Demand Management Cycle Aligns End Users And The IT Organization



39660 Source: Forrester Research, Inc.

- **Aggregate and reveal IT demand.** Aggregating all demand to make it visible also makes it manageable. To aggregate and reveal all of the demand for IT services, IT must deploy service catalogs and portfolio management tools and automate workflow — gaining operational efficiencies that lower the unit costs of providing those services. The resulting demand picture enables more accurate planning and forecasting, eliminating redundancy and the pressure to exceed capacity — leading to a reduction in the nondiscretionary budget required for "keeping the lights on" activities. This frees up more of the IT budget for strategic discretionary spending on new initiatives and innovation.

- **Optimize and align resources against demand.** Once the demand is aggregated and visible, reality sets in. IT resources are finite and must be managed to ensure that they deliver the most business value. By taking advantage of automated tools to manage people, skills, and infrastructure capacity, these IT resources can be mapped directly against the demand with the highest strategic value, as opposed to a FIFO or other resource allocation mechanism. This leads to the use of financial, people, skills, and infrastructure capacity to provide more effective (doing the right things) and efficient (doing the right things better) delivery of IT services.

- **Price and charge for services to shape demand.** The third and most important component of IT demand management is implementing a mechanism to influence the behavior of IT consumers — those people or organizations that are driving the demand. Informed consumers can make rational choices, and financial accountability provides the incentives to do so. IT can only influence user behavior when it delivers complete transparency of information around IT service costs and value. For example, IT may offer two levels of help desk support: 8x5 (8 hours per day, Monday through Friday) or 24x7 (24 hours per day, seven days per week) at two different price levels; users can then choose the level of support they need.

AGGREGATE AND REVEAL STRATEGIC, TACTICAL, AND OPERATIONAL DEMAND

Demand for IT services comes from many different sources and surfaces in many different forms. This demand can be segmented into three main categories: strategic, tactical, and operational. IT needs to aggregate and manage each of these three demand streams through disciplined processes that provide a holistic picture of the total demand for IT services (see Figure 3).

Manage Strategic Demand Through Project Portfolio Management

Strategic demand is the demand for new projects that provide innovation and enable new business products and services. Strategic demand typically accounts for 20% of the total IT budget, but represents the most significant opportunity for business value.[3] Internal pressures to improve IT's role as a business partner and external pressures, such as regulatory requirements and market competition, require a strong link between the strategic plan and the project initiation process. Project portfolio management (PPM) provides a fact-based process for evaluating, prioritizing, and

monitoring projects. PPM unites the processes of strategic planning, resource and budget allocation, project selection and implementation, and post-project metrics. Best-practice organizations:

- **Clearly identify strategic objectives.** Each business unit identifies its key strategic objectives and aligns investment opportunities to business outcomes, ensuring that IT and the business are engaged in partnership. Strategy development is highly collaborative, involving both IT and business executives. Embedding IT relationship managers in the business units is an effective way to ensure that there is a two-way flow of information around the business strategy and IT capabilities.[4]

Figure 3 The Components Of IT Demand

Demand types	High-level management process	Sublevel management process	Examples
Strategic	Project portfolio management	• Clearly identify strategic objectives • Take a full life-cycle approach to investments and benefits realization •Use a fact-based process for decision-making	• Embed relationship managers • Use a standard business case template with financial return • Use a product plan to address upgrades and retirement/ replacement
Tactical	Service portfolio management	• The service catalog is the heart of SPM • Automated workflows for ordering, approving, and delivering • Information for IT and user management	• Catalog a service: an email account with 50 gigabites of storage costs $1,000/user/year with 99.9% availability and weekly backup • Process a request: a manager with a new employee starting orders a PC using a Web-browser interface to the catalog
Operational	Asset management	• Keep desktop and infrastructure software up to date • Comply with regulations • Support the applications • Maintain the hardware	• Install and configure exchange server • Deploy latest Microsoft patch • Take inventory of application software
	Application portfolio management		

39660 Source: Forrester Research, Inc.

- **Use a fact-based process for decision-making.** Projects are evaluated, selected, prioritized, funded and reviewed based on their potential risk-adjusted value in the context of the organization's strategic objectives. Best-practice organizations regularly review projects to ensure that they are still on track to deliver the expected benefits — and quickly cancel them if they are not.[5] These firms develop a standard template for a business case; consistently using this for every proposed project establishes a standard against which all projects can be compared equally. Embedding the business case within a PPM process ensures an objective, fact-based decision process.

- **Take a full life-cycle approach to investments and benefit realization.** Portfolio investments are managed through their entire economic life cycle to deliver the optimal value through implementation, adoption, and eventual retirement.[6] IT organizations sometimes mistakenly stop their involvement when a project is delivered — even though the majority of projects don't deliver their optimal value until six months to a year after they are first implemented because of typical adoption and learning curves. Furthermore, there may be opportunities along the way to make incremental improvements that will increase the value returned. Best-practice IT organizations take a product management approach: Projects have a product plan that takes them through implementation, delivery, adoption, harvest, and retirement/replacement.

Manage Tactical Demand Using Service Portfolio Management

While the project portfolio typically accounts for 20% of the IT budget, the remainder of the IT budget is spent on day-to-day activities, often referred to by IT execs as "keeping the lights on." Much of it consists of everyday requests for IT services, ranging from help desk calls to requests for bug fixes to provisioning a new employee. These pour into IT from many different directions and via many different mechanisms — from formal ticket management systems embedded within a service desk process to informal "hallway chats" or drop-ins, where an individual stops by the desk of an IT staffer and makes a "simple" request. But outside of a formal IT service request process, tactical demand can overwhelm the IT department because it is difficult to forecast and anticipate.

Leading organizations are beginning to capture and manage the total cost of delivering IT services by implementing service portfolio management (SPM). SPM provides IT operations with a process to deliver its broad range of services more efficiently and effectively. It also enables the IT organization to provide its users with financial transparency around IT service costs, consistent and predictable service quality, and a direct link between services delivered and business value — and, at the same time, provide IT with more efficient and effective operational control over its service delivery. SPM consists of the following components:

- **The service catalog — the heart of SPM.** IT documents all the services it provides — including support, maintenance, and provisioning — in a catalog structure that describes the service, its contracted service-level agreement (SLA), and its cost. Users can access the service catalog via

a browser-based interface, and it can be customized so that each user only sees the services that they are eligible to order. For example, an email box for Microsoft Outlook with 50 gigabytes of storage may cost $1,000 per user per year with 99.9% availability and weekly backup.

- **Automated workflows for ordering, approving, and delivering services.** SPM reduces the cost of delivering services by automating the workflow and even the delivery of IT services. Orders are routed through the required approval cycle to the appropriate delivery organization, which can include both IT as well as external service providers. For example, a manager anticipating the start of a new employee would order an email account and PC using a Web-browser interface to the catalog; the request would be routed to the appropriate IT staffer responsible for setting up email accounts and configuring PCs.

- **Information for IT and user management.** Data is collected about service quality and cost; this can be distributed to management in report form or shown in online dashboards. IT management can use the information to understand service demand and service team performance and to identify the root cause of performance issues. End user management can access dashboards to view service quality and to better forecast and regulate consumption. For example, IT management can use analytics to understand when the peak demand for help desk requests occurs and then adjust capacity accordingly or measure the quality of service delivery to determine if more training is required. End user management can see in real time their consumption of IT services and associated costs, enabling them to "dial up/down" usage or even compare internal IT costs with possible outsourced solutions.

Operational Demand Builds And Maintains IT Infrastructure

Operational demand comes from IT and its own internally driven activities aimed at the management of key IT assets that impact the enterprise's ability to conduct core operations. Operational demand includes:

- **IT infrastructure management.** IT is constantly maintaining, upgrading, and provisioning IT infrastructure — including servers, storage, clients (PCs, PDAs, workstations, etc.), networks, operating systems, and middleware. It retires obsolete or redundant systems, upgrades other systems, and configures and places new systems into service. Firms today use IT asset management tools to capture demand for provisioning hardware and managing licenses.[7]

- **Patch management and security updates.** Keeping software current and secure requires active patching as software vendors release an ever-growing number of updates. Data center automation tools help IT keep the infrastructure free from viruses, denial-of-service attacks, and other threats — which must be done continually.[8]

- **Applications software maintenance.** Organizations have a significant investment in their application software, both packages and custom-developed systems. This software must be

maintained and managed through its life cycle. A growing number of firms today are using application portfolio management (APM) software to assess software maintenance costs and capture application software-related requests and services.[9]

RESOURCE MANAGEMENT ALIGNS SUPPLY WITH DEMAND

Once IT has a holistic picture of IT demand, it must use a disciplined resource management process supported by software to optimally allocate the supply of IT resources available to satisfy that demand. IT resources consist of infrastructure capacity (server, storage, and network), people resources for both development and operations, and skill resources.

A resource management process ensures that: an integrated, economical IT infrastructure exists; new technologies are introduced appropriately; and obsolete systems are upgraded or replaced. It recognizes the importance of people and the need to maintain their availability, provide training, promote retention, and ensure that the competencies of the IT staff are sufficient to meet organizational needs. With specific IT skills shortages forecast, IT organizations will become increasingly challenged to maintain the staffing and skill levels they will need to successfully execute against their project and service portfolios.[10] What are the components of resource management?

Manage, Plan, And Schedule People Resources

People resource management provides a clear picture of resource supply, including skills and skill levels, across the entire IT organization. This can be mapped against the demand for IT resources from projects and "keeping the lights on" activities. This level of visibility into resource supply coupled with the holistic picture of demand provides the information to make better decisions about where IT staff members should spend their time. The primary elements of people resource management include:

- **Matching people to projects, support, operations, and planning.** People resource management starts with the ability to search a database of IT staffers to determine individual skills, past project experience, geographic location, and availability — providing instant visibility into the resource pool. Both projects and service desk work can be staffed with the best people available, including contractors.[11] Planned projects can be subject to "what-if" analyses to model alternative scenarios that avoid project bottlenecks, leading to better resource utilization.

- **Managing resource requests and staffing.** Typically, project managers can communicate their resource requirements directly to resource managers, who have access to the tools to quickly find people to meet the project manager's needs and communicate with them during the entire process. This enables IT to quickly and easily request, locate, and deploy people with the right skills from both internal and external sources.

- **Identifying and tracking skills and experience.** With ongoing employee development and employee turnover, the skills and experience of IT staff change continually; this requires a method for understanding the skill sets of individuals and tracking their development, experience, and interest levels. Skills management functionality enables organizations to quickly identify the optimum resources available for each piece of work (see Figure 4).

Proactively Manage Resource Capacity

Managing capacity resources for infrastructure raises the challenge of balancing cost-effectiveness with the resources needed to ensure high availability and maximize SLA performance. As a result of taking a comprehensive demand management approach, capacity management transitions from being reactive to proactive. The overriding goal of resource management is to optimally balance the supply of IT resources to the demand so that the strategic objectives of the business can be achieved with maximum value at an acceptable level of risk. Resource management is focused on the effectiveness of IT service delivery. Therefore, proactive capacity resource management brings numerous benefits, including:[12]

- **Decreasing overall costs while ensuring appropriate response times.** Resource provisioning can be automated to minimize risk, optimize performance, and lower costs by flexibly adapting to change and provisioning correctly sized resources in time to meet business demand. This eliminates redundancy and avoids costly underutilization. For example, if a Web server is experiencing response times that exceed a certain threshold, additional server capacity is added from a shared service pool using policy-based provisioning; when demand on the Web server decreases, the additional capacity is removed and returned to the pool. All of this happens automatically.

- **Ensuring high availability of critical business services.** Human error causes many service outages: By automating much of the provisioning process, the human element is removed. For example, as organizations hire new employees, they require things like email accounts, network access, and password access to any number of systems. Automated identity managers provide capabilities for automated provisioning, automated approval workflows, user self-service, and password management. Under role-based identity management, users only receive access to those resources for which they are authorized. All of this happens with little to no manual effort.

- **Using flexible external supply at the margin.** Proactive capacity management enables flexibility during peak times to take advantage of third-party providers and assets to supply "on-demand" capacity for short periods; this avoids expensive last-minute upgrades or hiring. For example, the IT organization knows that calls to the help desk increase significantly at the end of every quarter, especially from the sales force. IT may augment its help desk staffing during this time by hiring contractors or using a third-party help desk outsourcer.

Figure 4 The Components Of Resource Management

Resource management component	Resource management process	Examples
Manage, plan, and schedule people resources	• Match people to projects, support, operations, and planning • Manage resource requests and staffing • Identify and track skills and experience	• Staff projects with best available talent • Project manager uses Web-based form to request DBA resource for project • Resource manager uses skills database to determine best DBA to fill request
Proactively manage resource capacity	• Decrease overall costs • Ensure high availability of critical business services • Ensure appropriate response time • Use flexible external supply at the margin	• Automatically provision additional Web server capacity • Automatically provision access for new hire with policy-based identity management tool • Augment help desk staff at end of quarter with temps or outsourcer

39660 Source: Forrester Research, Inc.

FINANCIAL MANAGEMENT INFLUENCES BEHAVIOR

Financial management, including chargeback processes, provides IT consumers with the information they need to improve their forecasting and consumption of IT resources. Without accurate and effective chargeback processes, users have no incentive or information to manage their demand for IT resources. Firms with chargeback often utilize crude allocation methods — based on revenues, headcount, floor space, etc. — and so users are unable to understand the relationship between the price they are paying for IT and its value. The objective of IT chargeback should not be cost recovery; instead, the goal is to equip the business with better information so that it can make better decisions about its use of IT.

IT Chargeback Improves Decision-Making

Implementing IT chargeback depends on tracking IT resource consumption, reporting back to users on their consumption, and establishing pricing for each discrete product or service that IT provides. This presents two challenges for IT:

- **IT must think in terms of products and services, not assets.** Many IT organizations manage a collection of assets, including servers, storage arrays, network switches and routers, software licenses, applications software, and people. But IT end users typically consume products or services, such as email, help desk support, reports, and invoice generation. Effective chargeback begins when IT develops its catalog of services and products and describes them in terms of users' consumption.

- **IT does not have a good understanding of the costs of providing its services.** Once IT makes the break from managing assets to providing services and products, it must establish costs

for each of them. There are established methodologies for performing cost analysis, including activity-based costing (ABC) — for most firms, the first step involves mapping assets to services.

Chargeback Requires A Measured Approach

Implementing an IT chargeback system must satisfy a number of key objectives for the organization to accept it. An IT chargeback system based on actual usage of IT resources leads to more informed decisions about that usage. To make it work, IT chargeback:

- **Must be simple.** Business units typically purchase a small, identifiable list of services with contracted SLAs that ensure that they are getting what they paid for. IT chargeback implementations need to answer that question in simple-to-understand terms. For example, each employee email account costs $10 per month for basic service, $15 per month for premium service.

- **Must be perceived as fair.** A business unit wants to know that the costs that it is bearing are proportional to the IT service delivery costs, and that they are not distorted by costs incurred on behalf of other entities. Allocation algorithms must be based on actual usage rather than some abstract mechanism like revenues or headcount. For example, an engineer will most likely use significantly more computing resources than a field sales person, yet a headcount-based algorithm will dictate that each pays the same amount.

- **Must be predictable.** Business units need to be able to plan and budget for future charges, so they are usually interested in having a charge that is constant over an agreement period. With IT costs impacting the business unit's P&L, any "surprise" increases could potentially lead to the unit missing its numbers. IT must smooth out charges in a predictable fashion. For example, tier 1 help desk support for the accounting department costs $5,000 per month and this price is protected for 12 months.

- **Must enable control.** At agreed times, business units should have the option to reduce their levels of service and therefore their costs — one of the key elements in IT demand management. However, a process needs to be established to prevent business units from leaving IT "holding the bag" of costs that they reject for services that have actually been provided.

- **Can be "virtual."** While not as effective as actually charging a unit's P&L, virtual chargeback — where usage and costs are tracked and reported, but not "charged" — can provide information for rational decision-making — and may be the first step toward implementing chargeback that actually impacts the P&L . However, the incentives will not be as strong as when real money is on the line.

RECOMMENDATIONS

IT MUST MANAGE DEMAND TO MAXIMIZE VALUE

Access to accurate, timely, and relevant information leads to better decision-making. IT demand management enables firms to capture, analyze, and act on information about IT resource consumption to ensure that IT is working on the right things in the right way to maximize their business value. To do this, firms must:

- **Understand that end-to-end IT demand management is a long journey.** The road to IT demand management begins with a well-crafted plan. There are many component parts, and each can be implemented independently; the key is to pick a place and start. Implementing service portfolio management and a service catalog would be an excellent beginning.
- **Establish a product and service culture.** IT should begin to train and develop its staff to become product- and service-oriented. Like any service provider, relationship manager and service manager positions should be defined and implemented — as should the role of chief IT marketing officer — to ensure that IT products and services are clearly communicated and deployments succeed.[13]
- **Take advantage of available tools.** IT demand management is about collecting and providing information: information about IT assets, applications software, projects, services, people, skills, and costs. Capturing, managing, analyzing, communicating, and acting on all of this information will require an investment in software tools. There are many vendors providing tools for part or all of IT demand management.[14] These tools represent components of integrated IT management (IIM), a dashboard of role-based views of IT activity.[15]

WHAT IT MEANS

IT DEMAND MANAGEMENT IS A JOURNEY FOR EXECUTIVES

Implementing end-to-end IT demand management will be a multiyear journey for most IT organizations — and will result in migrating staff and product and service offerings to better match the expectations of the business. It is also an exercise in enterprisewide change management, as it significantly alters the way that IT resources are planned, consumed, and paid for; as a result, IT cannot drive it alone:

- **Executive management includes the CIO and IT as an integral part of strategic planning.** Demand management begins by ensuring that IT issues are embedded in the strategic plans of both the enterprise and business units.
- **Business unit executives become active steering committee members.** Portfolio management is a key component of IT demand management, and it only works when the business engages with IT and accepts accountability for IT-enabled business change.

- **The CFO endorses and supports consumption-based IT chargeback.** The way that IT spending is planned, budgeted, and charged for must change; this can only be accomplished with the help of the CFO and the finance organization. IT financial management must be consistent with existing enterprise financial and accounting practices. Organizations that fail to implement chargeback leave the business without a valuable tool for making rational decisions about IT resource utilization.
- **IT managers and staff adapt from managing assets to marketing products and services.** Lastly, the IT organization must change its culture from just managing servers, storage, and networks to one where it also develops, packages, markets, and delivers products and services to end users.

ENDNOTES

[1] IT portfolio management enables IT organizations to better manage their total IT spend. Through IT asset management, applications portfolio management, and project portfolio management, it is possible to gain visibility over almost the entire IT budget. See the September 30, 2005, Best Practices "Optimizing The IT Portfolio For Maximum Business Value."

[2] As budget growth slows, spending devoted to new investments will dip down to 20% from a reported 24% in 2005. This comes despite the fact that there are more firms that expect to increase new investment than there are that expect to decrease it. See the February 3, 2006, Data Overview "North America's 2006 Enterprise IT Spending Outlook: Business Technographics® North America."

[3] Every IT department has a MOOSE: continued spending on maintenance and ongoing operations, systems, and equipment. The majority of IT spending goes to "keeping the lights on" activities rather than on new projects. See the October 18, 2005, Best Practices "Defining The MOOSE In The IT Room."

[4] Relationship managers can be an effective organizational construct for improving IT/business strategy alignment and driving IT-enabled business change. See the February 2, 2005, Best Practices "Relationship Managers: Focal Points For Innovation."

[5] Successful project organizations are realistic about criteria for project success. They are more mature in their practices, placing a premium on communities to share project knowledge, and offer role-based education to project participants. See the May 26, 2006, Best Practices "What Successful Organizations Know About Project Management."

[6] Making the transition from managing individual projects to looking at an IT portfolio as a unified collection of interlocking and complementary initiatives often requires a major leap of faith. Breaking the transition down into orderly steps, with milestones and realistic expectations of the required time and effort, is the first step on this path. Evaluate where your organization is today and plot your climb up the ladder. See the March 22, 2004, Best Practices "Moving Up the Portfolio Management Ladder." Project portfolio management (PPM) is a critical enabler for IT work delivery. To assess the state of the market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top PPM

vendors across 94 criteria. See the March 13, 2006, Tech Choices "The Forrester Wave™: Project Portfolio Management, Q1 2006."

[7] Asset management offers a technology metrics function that is capable of yielding information that supports tactical decision-making and, more importantly, as a function that sheds light on the strategic optimal application of technology through properly derived metrics See the November 23, 2005, Best Practices "Justifying IT Asset Management."

[8] Many desktops remain vulnerable to potential security breaches through incorrect system, network, or application settings. However, regulatory requirements and the ever-narrower window between vulnerability discovery and exploitation will force firms to focus greater attention on these problems. See the March 14, 2006, Trends "Desktop Security Management Trends In 2006."

[9] Firms deploying application portfolio management (APM) create a source code repository and associate application support activities to that repository, saving 10% to 30% on application maintenance costs. See the October 20, 2005, Best Practices "Building The Business Case For APM."

[10] A number of IT skills will be in short supply as demand increases and the nature of IT work changes. See the January 25, 2005, Trends "IT Skills Shortages On The Horizon."

[11] Service desk staffing and resources are often not considered part of the larger IT resource allocation and application refresh process; however, vendors are increasingly providing integration between the service desk and other resource management solutions. See the December 28, 2004, Trends "Service Desk: IT Integrated Resource Planning Is Coming."

[12] To understand the future direction of automated capacity resource allocation, organizations are applying manufacturing concepts to IT. See the October 31, 2005, Trends "The Evolution Of Infrastructure Management."

[13] A product and service catalog is one of the vehicles that IT can use to market its offerings and value to the business units. See the August 23, 2005, Best Practices "The Marketing Of IT."

[14] To assess the state of the PPM market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top PPM vendors across 94 criteria. The result: Best-of-breed still reigns. Primavera's and PlanView's functional depth, breadth, and work-specific or industry-specific solutions far outweigh generic IT work management requirements. See the March 13, 2006, Tech Choices "The Forrester Wave™: Project Portfolio Management, Q1 2006."

[15] Dashboard-type views permit business managers and executives to see business events, to understand their subsequent impact, and to take corrective action. Integrated IT management (IIM) is a set of tools and processes that present dashboard-level views of IT activity. See the February 2, 2005, Forrester Big Idea "Integrated IT Management Drives Efficiency."

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