



## **1 Introduction: The evolution of IT leadership**

Information technology is now more important—and more expensive—than ever. It desperately needs real leaders.

## **2 What IT leaders do**

Companies that rely on IT governance systems alone will come up short.

## **7 The CIO as CEO: An interview with Allan Loren**

CEOs who understand the IT function can leverage their CIOs to better advantage.

## **12 Unraveling the mystery of IT costs**

Many business managers don't understand IT costs, but explaining them can help forge a true partnership between IT and the business.

## **18 What global executives think about technology and innovation**

A survey uncovers shared perspectives on the challenges now facing companies, but IT execs must still sell tech innovation to business leaders.

## **22 Will Europe embrace offshoring?**

Now that some of the barriers to offshoring services are falling away, companies in continental Europe have an opportunity to catch up with their global competitors.

*McKinsey on IT* is written by consultants in McKinsey & Company's global IT practice together with other colleagues in the firm. This publication offers readers insights into value-creating strategies and how to translate those strategies into company performance.

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## Unraveling the mystery of IT costs

Many business managers don't understand IT costs, but explaining them can help forge a true partnership between IT and the business.

**Andrew M. Appel, Neeru Arora, and Raymond Zenkich**

**Many companies** see IT as a black box that generates significant costs; few business managers know exactly what they are paying for and why their outlays keep rising. By making these costs transparent, the IT organization can fundamentally change the way business units consume IT resources, drive down total enterprise IT costs, and focus on IT spending that delivers real business value. The CIO who leads this change can usher in a new era of strategic IT management—and true partnership with the business.

IT cost transparency is a key component of what we call the “next-generation infrastructure.”<sup>1</sup> This new approach to managing infrastructure involves discarding the traditional build-to-order mind-set in favor of creating standard, reusable IT “products,” such as storage and telephone service. Cost transparency provides the business with three things: a catalog of IT products that specifies features, prices, and service levels; bills showing the infrastructure assets consumed by these products and the cost of their consumption; and management reports that roll up total costs by product type and business unit (Exhibit 1).

Once business executives understand how user demand for IT drives consumption and costs in their units, they can start

forecasting their future needs more accurately, track and manage usage, and make more thoughtful choices. They might opt to save money by using less of a specific IT resource or by switching to lower-cost alternatives. A manager might, for example, decide to cut back on e-mail storage by limiting the size of mailboxes or discontinue the use of an application tied to high-cost storage or underutilized servers.

Greater cost transparency also helps the IT organization improve the way it supplies IT to meet user demand, particularly by improving the way it manages assets and its ability to track costs. Management reports help IT to identify overall and unit costs that are out of line with market benchmarks and to find ways of standardizing IT assets and allocating them more effectively. To further support cost management and capacity planning, IT can offer discounts to business units that provide accurate demand forecasts, and it can use strategic pricing to drive users toward more cost-effective products—or away from older technologies or platforms. Taken together, demand-side management and supply-side cost controls can deliver annual savings of 5 to 10 percent.

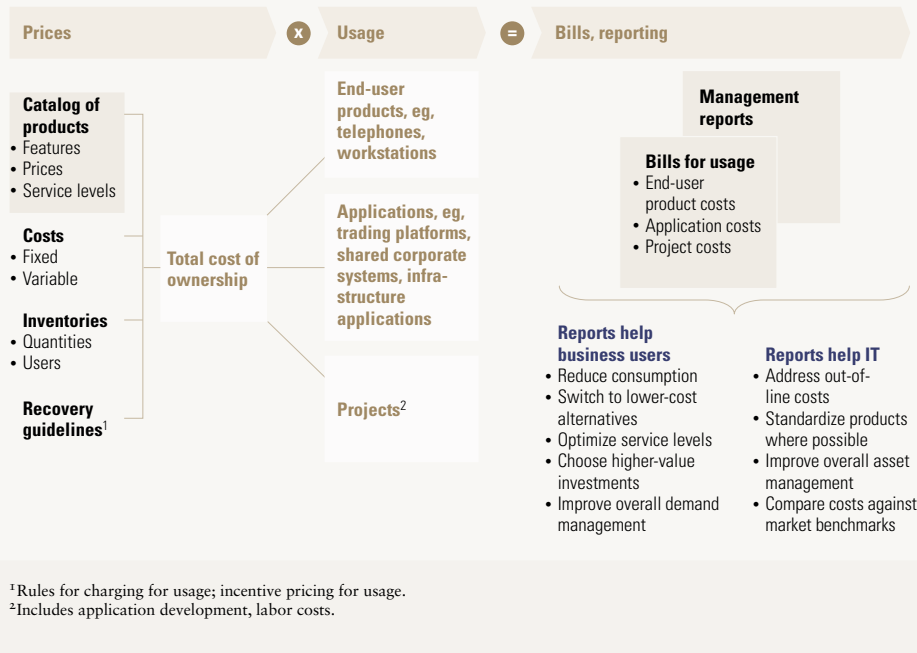
Moreover, once managers understand what they are paying for, their focus quickly changes. Instead of “run-the-company” costs (“Why are my workstations so expensive?”), they emphasize higher-value “change-the-company” investments (“What technology do we need over the next 12 to 24 months to maintain our competitive edge?”).

In this way, IT and the business become partners in achieving two overarching objectives: minimizing IT costs and ensuring that IT investments add more value. This dual payoff makes the hard work of a cost transparency program

<sup>1</sup>James M. Kaplan, Markus Löffler, and Roger P. Roberts, “Managing next-generation IT infrastructure,” *McKinsey on IT*, Number 3, Winter 2004, pp. 2–9 ([www.mckinseyquarterly.com/links/18148](http://www.mckinseyquarterly.com/links/18148)).

## EXHIBIT I

## The path to better decision making



worth the effort. Make no mistake—such programs are a challenge to implement, requiring new roles and responsibilities, new governance structures, and strong CIO leadership. The first step, though, is to analyze costs and demand.

### Understanding costs and demand

Achieving a clear understanding of IT costs and a comprehensive view of demand requires an accurate inventory of all assets and the total cost of supporting each item. Getting this information isn't easy. A large IT organization might support thousands of applications, dozens of physical sites, and tens of thousands of end users. Tracking all assets in use at any given time—the servers, storage, communications networks, and end-user devices (such as desktops, PDAs,

and telephones)—is a major challenge. So too is analyzing the cost of each item and keeping this information up to date. But without an understanding of these costs, the IT organization can't determine how best to price products for full recovery.

Each product in the IT catalog typically includes both fixed and variable costs. Telephone service, for example, might include fixed costs for equipment (phones), labor (support, engineering, and monitoring staff), maintenance, and depreciation (of PBX hardware and voice circuits) as well as more variable costs for items such as voice usage. The IT organization needs to break down these separate costs in the bill so business units know what they are buying.

Assessing and allocating costs can be complex. The task is fairly straightforward for tangible end-user assets such as phones and laptops. But intangible items—for instance, applications drawing on CPUs, servers, administrative support, software licenses, and other infrastructure resources—require careful and lengthy examination. Equally complex is determining what to charge for different tiers of service quality, such as 24/7 availability as opposed to off-peak usage only. After figuring out the total cost of the IT resources that applications consume, the IT organization must determine who “owns” them (users often share ownership) in order to allocate costs appropriately. Tracking consumption is one of the toughest but most critical parts of a successful cost transparency program.

Besides a clear understanding of IT costs, companies must develop a comprehensive, cross-enterprise view of demand and what drives it so that the IT organization can have the right amount of capacity in place: the servers, desktops, storage, CPUs, and other necessary IT resources. This step is

also critical to the business units' ability to generate accurate usage forecasts—a key component of an effective IT cost transparency program. These forecasts, in turn, help the IT organization to manage capacity, striking the right balance between providing too many costly IT resources and not enough to accommodate spikes in demand.

Few companies have systems to estimate and track demand for IT products and services. Some charge relationship managers with the task of compiling forecasts and acting as an interface between business-development teams and IT.

**Making better decisions**

Once the IT organization can track and allocate IT costs, it can send management reports to the business units that break down their consumption and spending by end-user products, applications, and projects (Exhibit 2). IT and the business units can then work together to analyze which trade-offs to make between costs and service levels in order to meet the company's goals for demand management and cost cutting.

The goals of effective demand management are twofold: optimizing (and often reducing) the quantity of IT products the business consumes—with an eye toward cutting overall costs—and changing the mix of IT spending to focus more on lower-cost products and higher-value investments. A cost transparency program jump-starts this effort. As soon

as bills based on actual IT usage start rolling in, the business can begin seeking ways to control and reduce consumption. Managers understand, usually for the first time, what they are paying for and where they can cut back (Exhibit 3). Armed with this information, business units can rethink their IT spending and seek out more strategic investments.

At one wholesale bank, for instance, managers in each business area understood, as they never had before, how much they were paying for desktop products and applications. Demand-driven IT bills not only provided new insights into the bank's cost-revenue ratios but also clearly showed that the business itself played a role in raising IT costs. The bank responded by creating a governance committee to review its IT investments and ensure they were aligned with the overall business strategy.

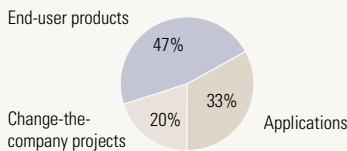
Over time, the bank's cost transparency program achieved three powerful results. First, it fundamentally changed the way the business spent its IT dollars. During the 2001 economic downturn, for instance, it cut several discretionary projects in order to go on funding more strategic IT projects—much to the CIO's surprise. Second, the program shifted responsibility for demand management to the business. By pruning and consolidating the portfolio, the bank cut the consumption of various desktop products and applications by 20 percent within the first year. Finally, the program forced IT to manage and use the bank's IT resources in the most effective manner possible, leading to savings of nearly 30 percent. These savings were redirected to discretionary projects that supported the bank's business strategy without increasing the total IT budget. As the program evolved, a trusting partnership developed between IT and the business.

EXHIBIT 2

**A clearer view of costs**

**Example of business unit's IT costs**

100% = \$15,431,500



**Management summary**

August 2005

**End-user infrastructure** **\$7,220,500**

**End-user technology**

Product	Quantity	Price/month, \$	Total
Workstations	650	150	97,500
Telephones	700	50	35,000
Access	400	200	80,000

**Application infrastructure** **\$5,070,800**

**Trade entry application**

**380,700**

**• Infrastructure charges**

**307,900**

Product	Quantity	Price/month, \$	Total
Servers	332	600	199,200
Databases	186	300	55,800
Storage (GB)	3,600	1	3,600
Network			49,300
Data			
–Data network servers	110	150	16,500
–External circuits	14	2,000	28,000
–Firewall ports	8	600	4,800

**• Application activity 'run the company'**

**72,800**

Minor maintenance and enhancements	40,500
Production support	32,300

**Trade-routing application**

**372,300**

**'Change-the-company' projects**

**\$3,140,200**

**New trading platform**

**720,000**

**Call-center upgrade**

**391,300**

**Online-account-access upgrade**

**344,000**

**• Labor**

**210,000**

Name	Hours	Rate/hour, \$	Total
J. Smith	160	80	12,800
R. Lynn	150	45	6,750

**• Nonlabor**

**134,000**

Infrastructure product	Units	Cost/unit, \$	Total
Development servers	23	600	13,800

**New location buildout**

**243,000**

**Monthly total**

**\$15,431,500**

EXHIBIT 3

**Transparency yields insights**

Financial-services company's annual infrastructure costs for sample application<sup>1</sup>

What's the best mix of production and development servers?

Would moving to company database standard decrease long-term costs?

Product	Quantity	Annual unit cost, <sup>1</sup> \$	Total annual cost, \$
<b>• Unix servers</b>			<b>2,390,400</b>
Production	210	7,200	1,512,000
Development	63	7,200	453,600
Disaster recovery	59	7,200	424,800
<b>• Nonstandard databases</b>	186	3,600	<b>669,600</b>
<b>• Storage, GB</b>	3,600	12	<b>43,200</b>
<b>• Network</b>			<b>591,600</b>
Data			
–Data network servers	110	1,800	198,000
–External circuits	14	24,000	336,000
–Firewall ports	8	7,200	57,600
<b>Total application costs</b>			<b>3,694,800</b>

Can we consolidate circuits to lower this cost?

How profitable is this product on a cost-per-trade basis?

<sup>1</sup>Excludes cost of application-development projects.

Management reports also support supply-side cost savings by helping the IT organization to price its products so that it recovers its costs in full and to monitor the progress of cost-cutting initiatives. Once IT understands its baseline costs, it can use key metrics on costs, asset efficiency, and labor productivity to begin comparing its performance against industry benchmarks. If IT spending per employee or CPU utilization seems to be out of line, for example, the IT organization can begin to identify and correct the underlying problems. A benchmarking exercise at the wholesale bank helped it to consolidate its servers and vendors (moves that saved \$70 million and \$100 million, respectively,

in the first year) and to consolidate its desktops (saving \$15 million in the first two years). When IT makes progress in such efforts, unit costs fall, usually to levels in line with benchmarks.

**Guidelines for success**

Only motivated business managers can drive cost transparency programs, but IT can stimulate demand for transparency. Communicating external benchmarks and cost performance targets to business managers highlights the potential savings from such programs. IT can also build support for them by presenting cost transparency as a way to address the mystery—and headache—of growing technology expenditures. To persuade the business that it should buy into a cost transparency effort, one company used case studies showing the benefits of demand-management and service-level trade-offs.

Make key decisions early, with input from the business

To simplify and accelerate the cost transparency program, the IT organization should make key decisions—including which products go in the catalog, what service levels are available for each of them, how they should be defined and priced, and how to depreciate costs—in the program's initial stages. Making these decisions further into the process can lead to time-consuming rework: one company, for example, lost two and a half months because it decided, rather far into the program, to change the definition and pricing of its servers from a per-box to a per-CPU basis. Other early decisions should include how to deal with excess capacity stemming from inaccurate demand forecasts and how to recover costs when product pricing is too low. Less important matters, such as negotiating contractual service-level agreements with tiered pricing

and defining more granular product options, can wait.

Keeping the business involved is critical. As costs are reallocated to reflect usage more accurately, many design decisions have a significant impact on a business unit's P&L, so senior executives should understand what they are signing up for. And since definitions of products affect all downstream activities related to pricing, usage allocation, and implementation, senior IT management must be closely involved, even meeting daily to ensure alignment on the overall direction.

#### Focus on controllable products and the biggest cost drivers

One clear goal of cost transparency is to improve demand management, so the IT organization should focus its initial efforts on big-budget items and products whose usage the business can control—for example, applications or storage. Too often, IT gets bogged down trying to offer a comprehensive set of products and services, including testing, monitoring, and other supply-side activities that typically don't involve the business. Instead of struggling with such detail and complexity, IT should create a set of products up front that the business understands and can manage. The focus should be on the biggest cost drivers, such as applications that consume a lot of resources. Although IT may capture and understand the cost of every service, it is unnecessary to share this information with the business unless specific costs merit a deeper look. In short, keep things simple initially and become more complex as a culture of cost transparency takes hold.

#### Make product owners accountable for costs and design

Cost transparency requires greater management discipline from IT. Product

owners play a pivotal role, assessing demand across product categories and working with IT to align projected demand with the supply of infrastructure assets such as hardware, software, and storage. Product owners define product and service levels and manage pricing to ensure that costs are fully covered. Since the goal is to minimize costs for any given service level, product owners need a deep understanding of IT's fixed and variable cost structure. To this end, most of them will need training in budgeting, forecasting, asset management, and other basic skills for managing costs.

#### Create new governance structures

To keep the cost transparency program running smoothly, companies should set up forums where customers can review their bills, compare budgets with actual numbers, validate product usage, adjust levels of IT assets (such as workstations), and determine the impact of over- or underrecovering the costs of each business unit. The IT organization should set up its own IT cost review forum to make sure that prices cover the cost of products, to monitor usage patterns and service delivery issues (such as slow help desk response times), and to manage the over- and underrecovery of costs by tracking actual usage and costs against forecasts. Product owners ought to play a central role. IT steering and investment committees are also needed to define strategic and nonstrategic investment priorities. Assigning a relationship manager to serve as a liaison between IT and the business can work well. Of course, these new governance structures must be designed so that they coexist with the current IT organization.


#### Focus on small, early releases

Instead of trying to do everything at once, smart companies start small, with

a program release that can be delivered quickly—within 6 to 12 months—and still have a major impact. Some details can be omitted at the start and added later; a company may choose to limit its first catalog to 50 or fewer products, for example, to bill at the division rather than user level, and to estimate costs when actual numbers are lacking. The wholesale bank mentioned earlier simplified some of its broader IT products (such as networks) by creating an across-the-board “tax” that all business units paid for network data connectivity.

After the first year, companies can begin fine-tuning and extending the cost transparency program by adding new products or improving existing ones, introducing service-level agreements, offering deeper and more comprehensive reporting and analysis, adding incentive pricing to move the business to lower-cost resources, and evaluating outsourcing options. Future releases may then focus on continually improving IT processes, refining products and service-level agreements, and striking the right balance between strategic and nonstrategic IT investments.

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When CIOs set up cost transparency programs and fully understand unit costs and their drivers, it will be possible to begin optimizing IT investments and improving the dialogue between IT and the business. By clarifying IT costs, such programs also lay the groundwork for successful outsourcing and for the evaluation and integration of IT in mergers and acquisitions. 

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