

## Moving IT infrastructure **labor** offshore

The offshoring of IT infrastructure—machines and networks and the people who manage them—has been relatively slow to develop. But this is changing as leaders show how to offshore it effectively and vendors step up to meet a growing opportunity.

**Kishore Kanakamedala, James M. Kaplan, and Gary L. Moe**

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**Half of the people** in corporate IT departments manage and support infrastructure rather than develop and maintain applications, yet infrastructure represents only a tiny percentage of the IT labor offshored to low-cost locations so far. One reason is that managers have been hesitant to send such mission-critical operations too far from home. If an application-development project bogs down in Budapest or Bangalore, the roll out of a new feature may be delayed; if a server crashes or a network goes down, the business consequences can be far more serious. These concerns—as well as the cost and unreliability of telecommunications in some developing markets, the limited availability of key infrastructure skills there, and a history of locating hardware and labor at end-user sites—have made CIOs reluctant to pull the offshoring lever to reduce infrastructure costs.

In the past two years, however, constraints on the offshoring of infrastructure have started to ease, and the market appears poised to follow the growth trajectory of other IT-offshoring segments (Exhibit 1). Offshore vendors have started to invest aggressively both in infrastructure talent and redundant networks from the United States and Western Europe. From 2003 to 2005, the number of offshore vendors (the global talent pool of people who can handle infrastructure tasks) tripled, to 15,000, from 5,000. At the same time, automation tools, more effective processes, and onshore consolidation efforts have made corporate IT departments increasingly comfortable with locating more of their infrastructure labor remotely from assets and users.

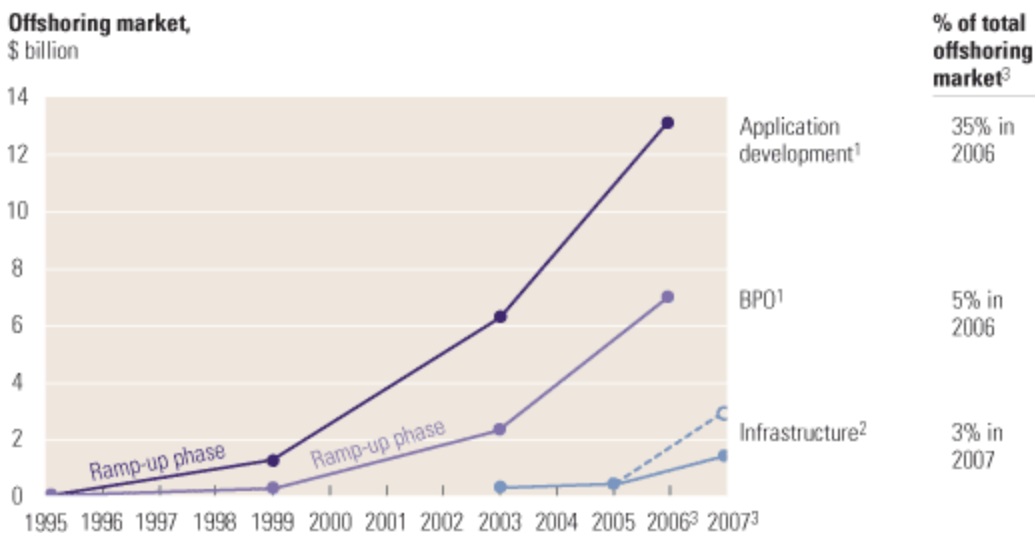
Most senior IT executives have already learned valuable lessons from offshoring their application-development projects, but they will have to learn new skills to offshore infrastructure successfully. The split between onshore and offshore resources requires a careful design based on the need for proximity to application developers, end users, and infrastructure assets. The necessary skills imply that different mixes of locations and commercial models (vendor or captive) will be required, and the real-time nature of infrastructure typically calls for substantial changes to key processes and organizational structures.

**Leading-edge companies that began moving labor to India two to three years ago have already achieved savings of as much as 60 percent**

### **The benefits of offshoring labor**

IT departments send their infrastructure labor offshore primarily to take advantage of lower labor costs, but there are other advantages too. The offshoring of infrastructure labor can spur operational improvements and the implementation of a global operating model that provides far more uniform support to applications and users, no matter where they work.

Hiring people with the necessary skills is getting easier in places such as India, Malaysia, the Philippines, and Eastern Europe. Some IT infrastructure technologies are easier to offshore than others: depending on the task, companies may be able to offshore from 40 to 50 percent of the staff in certain areas (Exhibit 2). Leading-edge companies that began moving their internal IT help desk operations and UNIX server monitoring, management, and support work to India two to three years ago have already achieved savings in unit labor costs of as much as 60 percent—though 20 percent is more typical—after an initial investment period (Exhibit 3). Seeing this opportunity, vendors and captives have ramped up their skills, and a lot of them now offer a broad range of network, help desk, distribution, and application integration capabilities.



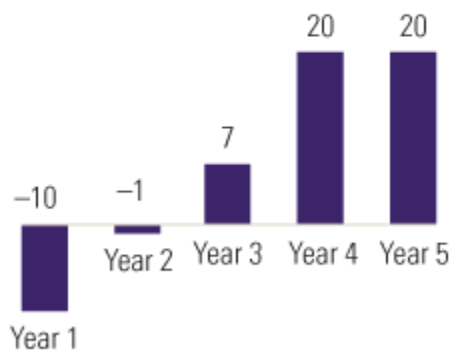
<sup>1</sup> Limited to India; BPO = business process outsourcing.

<sup>2</sup> Includes labor portion only (~50% of total infrastructure-offshoring market).

<sup>3</sup> Estimated.

Source: Deutsche Bank; Forrester Research; National Association of Software and Service Companies (Nasscom); McKinsey analysis

Forecast savings in labor costs from offshoring IT infrastructure labor (disguised example of financial-services company), % of total labor costs



Many companies house their infrastructure in local or regional operations. For this

reason, technologies, processes, and services are scattered around the world, so it is hard for infrastructure organizations to support increasingly global business processes and applications. The opportunity to consolidate labor in a low-cost offshore center can act as a forcing mechanism to consolidate infrastructure operations and thus raise service levels for applications and users—for example, by providing affordable 24/7 support.

In addition, some companies that have already moved some of their application-development and business operations offshore find that moving their infrastructure staffs as well offers economies of scale for facilities, data communications, and training. One manufacturer offshored all of its server support and help desk work to the Indian vendor that already developed its applications. Thanks to shared facilities, administration, and training, it achieved savings of 10 to 30 percent on those infrastructure tasks.

## Assessing the opportunity

Most IT executives already understand some of the basic planning requirements for offshoring the development of applications. Deciding which infrastructure activities can be offshored is a bit different, partly because the reliability of infrastructure affects business operations directly (and often immediately) and because people who play infrastructure roles work so closely with other functions (such as operations) and third-party vendors. Given these constraints, managers planning a move must evaluate whether the jobs under consideration require proximity to senior management, application designers, vendors, or machines. Obviously, any function requiring close access to any of these onshore resources is a poor candidate for offshoring. What's more, in some countries and industries, regulations limit cross-border access to customer data, so any role requiring such access would not be wholly transferable.

Moving infrastructure labor offshore is just one way to make better use of IT resources. See ["Managing next-generation IT infrastructure."](#)

Companies that view offshoring from this perspective report that about half of all infrastructure labor can be offshored, depending on how well grooved their IT processes are. A retailer with thoroughly understood business processes, stable IT budgets, a conservative stance on introducing new applications and technologies, and very limited regulatory requirements, for example, might

offshore more than half of its infrastructure labor, because those roles are easy to standardize and manage remotely. By contrast, an investment bank, which could have a very different IT environment, might be able to offshore slightly less, because more of its roles require closer management or greater flexibility.

## Planning the move

As with application development, the right place, time, and model are key decisions. Reengineering roles, transferring knowledge, and monitoring operations in real time are even more critical.

### Location

Labor skills and costs vary by region. Singapore, given its political stability, advanced skills, pervasive use of English, robust infrastructure, and (for many IT organizations) existing footprint, is the least risky labor-offshoring option. Singapore's labor costs are several times India's, however, and with a population of only four million its labor market is shallow.

India (followed by Eastern Europe, Malaysia, and possibly China) is on the rise as an offshore provider of infrastructure services. While infrastructure offshoring is still relatively new to India, it has vast amounts of low-cost, English-speaking labor in almost every infrastructure area except mainframes. As labor costs rise there, however, many IT organizations will look to Malaysia as an alternative source of English-speaking infrastructure labor or to several Eastern European countries that can provide support in French and German. Although China is not a realistic option for companies that need English-language support, several IT organizations are looking at the region around the Chinese city of Dalian as a location for Japanese infrastructure operations.

### Captive or vendor?

Captives and contractors are among the range of available options. Almost all full-service Indian offshore vendors are investing heavily in infrastructure capabilities, though most of the deals these companies have signed to date are relatively small. In infrastructure as in other services, they plan to leverage their proven advantages over captive operations in recruiting and retaining personnel. But very early data indicate that the offshoring of infrastructure may involve a more even balance between captive and sourced operations than application development did, because companies want to retain more control over what are largely real-time processes.

### Sequencing and prioritization

When companies offshore infrastructure labor, tasks that involve the least interaction with the onshore business should be moved first if the talent pools in the offshore location can supply the right staff—mainframe operators, for example, are still hard to find offshore. A typical strategy would be to move monitoring and some problem resolution responsibilities first, followed by more sophisticated roles, such as system and database administration.

### Remote management and automation

If only jobs (and not machines) are moving offshore, remote monitoring and administration become critical. Engineers in Asia or Eastern Europe may be keeping an eye on machines in North America or Western Europe and performing necessary services, such as rebooting servers, backing up data, balancing loads, and tuning performance.

During the past few years, tools to perform these tasks have advanced significantly. The remote-monitoring and -diagnostic capabilities of the leading system-management tools have improved; remote system updates, patch management, and automated server provisioning have become more common. In addition, the troubleshooting capabilities of network-management tools are more robust; end-to-end trouble-ticket generation, routing, and management are now widespread.

### To capture the full potential of infrastructure offshoring, IT managers must determine which roles can be undertaken at a distance

#### Role and process redesign

Even with such substantial advances in remote management and automation, many onshore infrastructure workers still perform a mix of activities. Some tasks require these workers to be physically close to machines, developers, and top managers; others don't. Looking only at roles in the current model will probably mean that fewer of them can be offshored than might be the case if they were reengineered. To capture the full potential of infrastructure offshoring, IT managers must determine which roles can be

undertaken at a distance from onshore machines and personnel and then have roles and processes redesigned to segregate such functions from those that need proximity.

This is a substantial process of change. Several organizations that have undertaken it concluded that they had to augment their traditional, technology-centric processes and structures with functionally aligned processes and structures. One organization, for example, is transferring a number of operational responsibilities from its onshore server, storage, and end-user organizations to offshore centers of excellence aligned by function.

### Training and knowledge transfer

Every company's IT setup is unique. New offshore workers must be trained to understand the legacy systems, service requirements, and businesses they will support. Ongoing exchanges are needed to transfer knowledge in both directions; a leading manufacturer, for instance, rotates its offshore staff through its US back-office and IT operations. That approach gives these employees enough hands-on experience to understand the company's unique needs (such as the way a proprietary manufacturing process affects procurement, now partly undertaken offshore), as well as the performance tuning and optimization required by its server configuration. Good training and professional development are also valuable tools for recruitment and retention in low-cost regions that experience an offshoring boom. This manufacturer reports that it has a much lower attrition rate among offshore workers than peer companies do.


### Unique governance challenges

The real-time nature of IT infrastructure means that it can't be governed in the same way as the offshoring of application development. Companies must clearly determine who has the authority to resolve conflicts and processes, since engineers and managers may have to react in minutes rather than hours or days. In addition, it's common to have employees with similar titles and tasks sitting in a number of locations—a recipe for confusion unless roles and responsibilities are plainly defined. In view of these greater risks, it would be a mistake to leave the details of governance to data center managers. CIOs and senior business executives must take a direct interest in setting up the proper governance, for the success of the venture will depend on it.

In addition to all the usual benchmarks of good governance—clearly delineated reporting structures and decision-making rights, as well as processes for approving projects, resolving conflicts, and handling exceptions—three governance principles are essential for offshoring infrastructure. First, to reduce the chance of miscommunication, offshore teams must be aligned with the onshore organization at all levels, from senior managers through engineers and operators.

Second, because onshore and offshore teams work together more closely in running the IT infrastructure, it's critical to establish a good relationship between them by encouraging informal collaboration and camaraderie. It helps if the offshore leader has strong credibility with the onshore leadership, but even managers at more junior levels should come together periodically through training events and regular job rotations.

Third, companies should align their performance metrics for managers with the new offshore strategy. A common mistake is to set performance targets for offshore operations without giving onshore managers incentives to send more work their way. An electronics company trying to ramp up its offshore data center operations, for example, was still asking the head of its onshore center to keep it running with 99.99 percent uptime for all applications. There were no incentives for cost savings. The offshore operation was staffed up, but its utilization remained low because the onshore manager received no encouragement to send it work. As a result, the company saw no benefit from its offshore data center investment until IT and business managers gave the head of the onshore data center an incentive to cut costs through offshoring.

CIOs are just beginning to discover the large value creation opportunity that IT infrastructure offshoring affords. First movers will not only cut costs but also get the first pick of the talent pool, develop better innovations thanks to the new global business and operating models, and gain a deeper understanding of the offshore services landscape. 

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