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"Fit-for-purpose" infrastructure strategy

How companies can manage increasing IT demands

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Executive summary

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Despite the increased pervasiveness of technology across virtually all industries, many companies still use an outdated approach to IT infrastructure. In this approach, infrastructure strategy is relegated to a back-office function with little communication or coordination with business units. Given that infrastructure comprises roughly half of all technology spending, such an approach results in large inefficiencies. Worse, it obscures the true cost and service levels for products from business leaders, and leaves critical products and services vulnerable to disruptions.
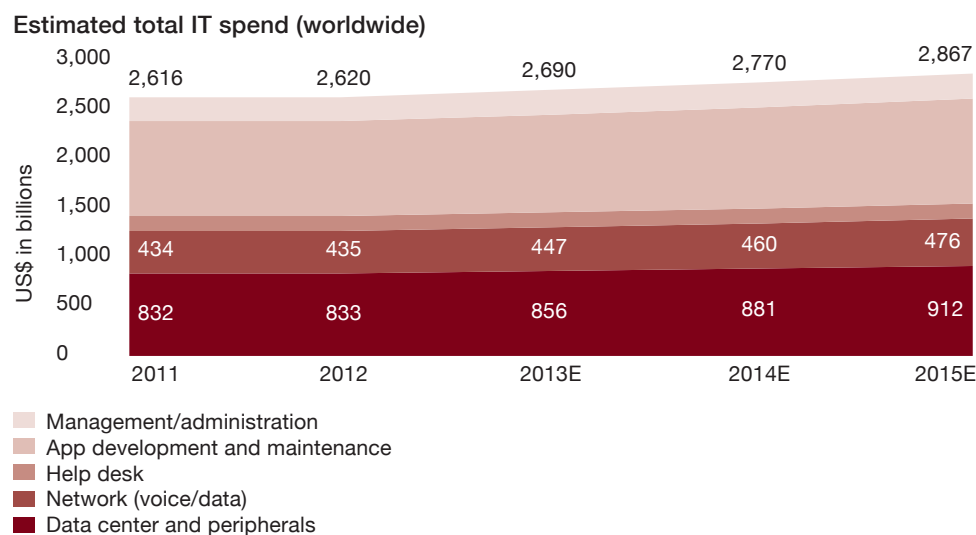
By contrast, a "fit-for-purpose" infrastructure strategy aligns IT infrastructure proportionally with the relative importance of the business line, product, or service that it supports. Critical units receive greater infrastructure spending and higher service levels, and noncritical units receive less. This strategy offers several clear benefits: First, business and IT leaders have a better view of priorities and can collaborate more effectively to execute the company's overall strategy. In addition, business leaders have a more accurate sense of the total cost of products and services across their portfolio, including IT infrastructure, and can therefore better manage it. Perhaps most important, the company prioritizes its disaster mitigation and recovery efforts, reducing the potential costs — financial, reputational, and regulatory — of an outage.

Implementing a fit-for-purpose IT infrastructure strategy requires coordination among business and IT leaders, with three distinct steps. First, the company must conduct a business impact analysis to determine the relative importance of specific products and services and establish the right priorities. Second, IT leaders must map the application portfolio to the company's products and services with an aligned inventory of all IT infrastructure components and underlying cost — creating an end-to-end linkage between business products, applications, and infrastructure. This step includes both an assessment of the current state and a reprioritization to the targeted future state. Third, the company must establish a repeatable process, enabling constant adaptation to changing market priorities, evolving strategies, and new technologies.

Increasing technology infrastructure demands

Infrastructure continues to consume approximately half of all IT spending across industries, yet many organizations do not have a clear sense of how effectively they are allocating those resources. This is a challenge with growing ramifications. Technology is becoming more pervasive, and the traditional lines between business and the IT function are becoming more porous. IT was once relegated to a back-office support function in most industries, but today it is the principal means that businesses use to interact with customers and one another. Moreover, it is becoming a true differentiator. Companies with strong IT functions are better able to collect, analyze, and understand market data, giving them a jump on their competitors. Infrastructure is a key component of this, especially given that IT spending is estimated to reach US$2.9 trillion by 2015, a 9.5 percent increase from 2011 (*see Exhibit 1*).

Exhibit 1
Global IT spending continues to rise

Estimated total IT spend (worldwide)

	2011	2012	2013E	2014E	2015E
Total	2,616	2,620	2,690	2,770	2,867
Network (voice/data)	434	435	447	460	476
Data center and peripherals	832	833	856	881	912

- Management/administration
- App development and maintenance
- Help desk
- Network (voice/data)
- Data center and peripherals

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In tailoring the right IT infrastructure to support the business, CIOs face several clear challenges. The first is the rapidly evolving needs both inside and outside the company — business leaders and customers are looking for real-time data to make fast, informed decisions, requiring that IT infrastructure become more responsive. The technology itself is also a moving target, with new tools such as cloud computing that can potentially revamp the way a company handles information.

In addition, businesses are under continued pressure to keep internal costs down, even as they must ensure that business-critical services remain available 24 hours a day, 365 days a year. And they operate in an environment of evolving risks and regulatory changes. For example, mobile technology introduces new security risks and vulnerabilities, regulatory pressures bring the potential for new operational risks, and audit requirements on monitoring and documenting data flow have changed drastically in the last decade.

In our work with several large institutions in recent years, we have observed some common reactions by IT organizations. To handle cost pressures, many institutions have pulled the usual levers, such as outsourcing infrastructure, putting greater reliance on public cloud services, and virtualizing their environments.

Yet these initiatives often represent half-measures at best because they are developed in isolation, rather than in coordination with business units. Despite the importance of technology, many organizations still relegate IT infrastructure strategy to the back office. Business leaders do not understand how their needs translate to infrastructure capabilities, and IT leaders do not understand how best to support the organization's overall strategy and mission. As a result, IT infrastructure either does not meet evolving business needs or — equally bad — is prohibitively expensive.

This misalignment manifests itself in a number of ways. Commonly, the company does not invest in proportion to the criticality of the function. Mission-critical applications may be left relying on end-of-life infrastructure, making them dangerously vulnerable to disruptions. Similarly, the company's disaster recovery strategy is not pegged to business requirements, regulatory risks, or the financial impact of a service outage. At the same time, noncritical infrastructure may be overengineered and overly expensive, sapping resources from more important applications and business units.

Mobile technology introduces new security risks and vulnerabilities.

To succeed in such a challenging environment, CIOs must design their technology infrastructure to meet multiple parameters while maintaining a low-cost structure. These parameters include the following:

- *Scalability:* Flexible capacity that can scale up or down in response to changing demand

- *Agility:* Quicker processes that can reduce the time-to-market for new products and services

- *Data retention:* Increased storage and management capabilities to handle large amounts of data, often unstructured

- *Resiliency:* Disaster recovery measures that are matched to business needs to ensure that products and services remain available

- *Efficiency:* Cost-effectiveness in an environment that constantly demands more for less money

Fit-for-purpose infrastructure strategy

The solution is a "fit-for-purpose" infrastructure strategy, which optimizes the infrastructure to the specific requirements and priorities of business units, products, and services (*see Exhibit 2*). In developing this strategy, collaboration is crucial — key stakeholders across business and IT must first establish clear priorities and then align the IT infrastructure accordingly.

Exhibit 2
Fit-for-purpose infrastructure strategy requires several key components
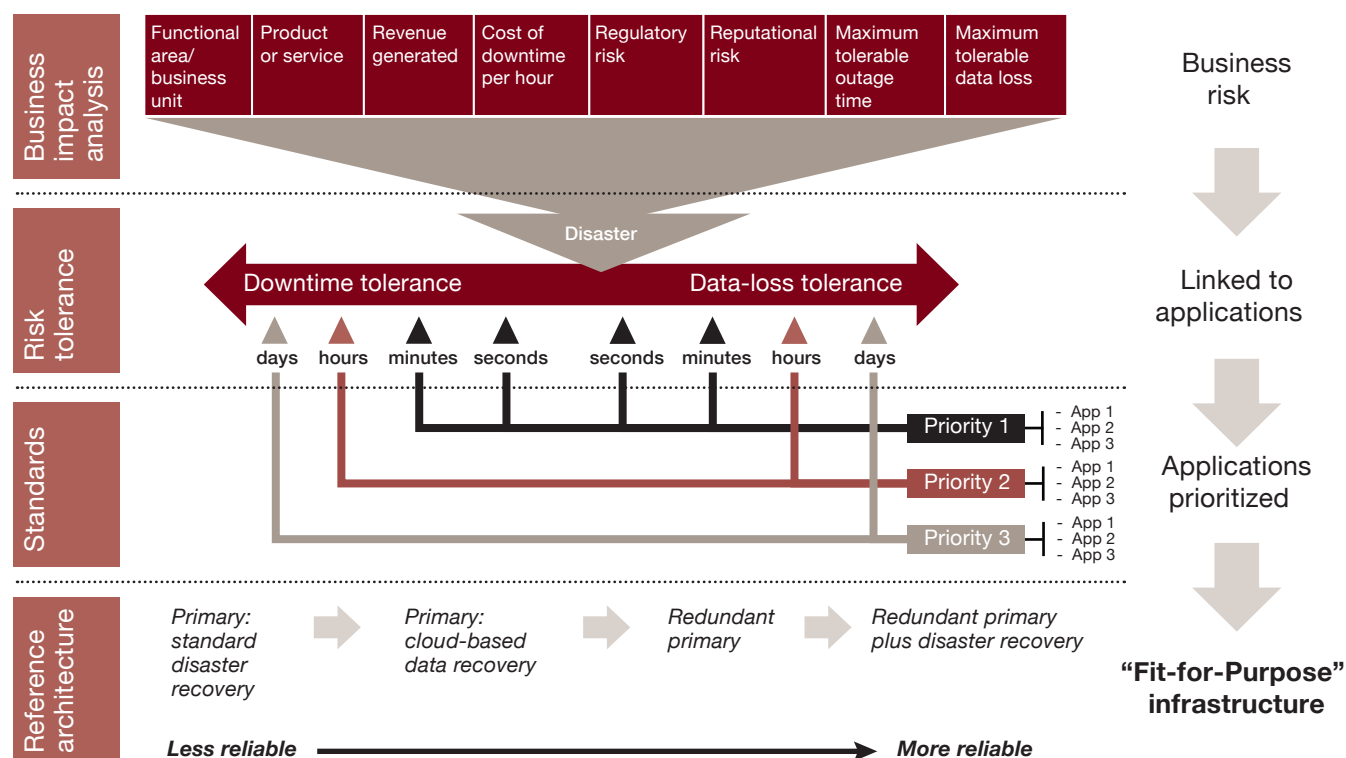
Source: Strategy& analysis

Fundamentally, this approach answers several key questions: What are the most critical business products? Does the infrastructure support these products proportionally? Does each product's revenue justify the total cost of ownership (TCO) for its level of IT investment? What are the lowest-cost options for meeting business requirements and mitigating risk? Is the current environment over- or under-engineered (including for disaster recovery)? What should the geographic data center footprint be?

Our recent client experiences show that companies that have adopted a business priority–driven approach to infrastructure strategy have reaped tangible benefits. Specifically, this approach allows the organization to accomplish the following:
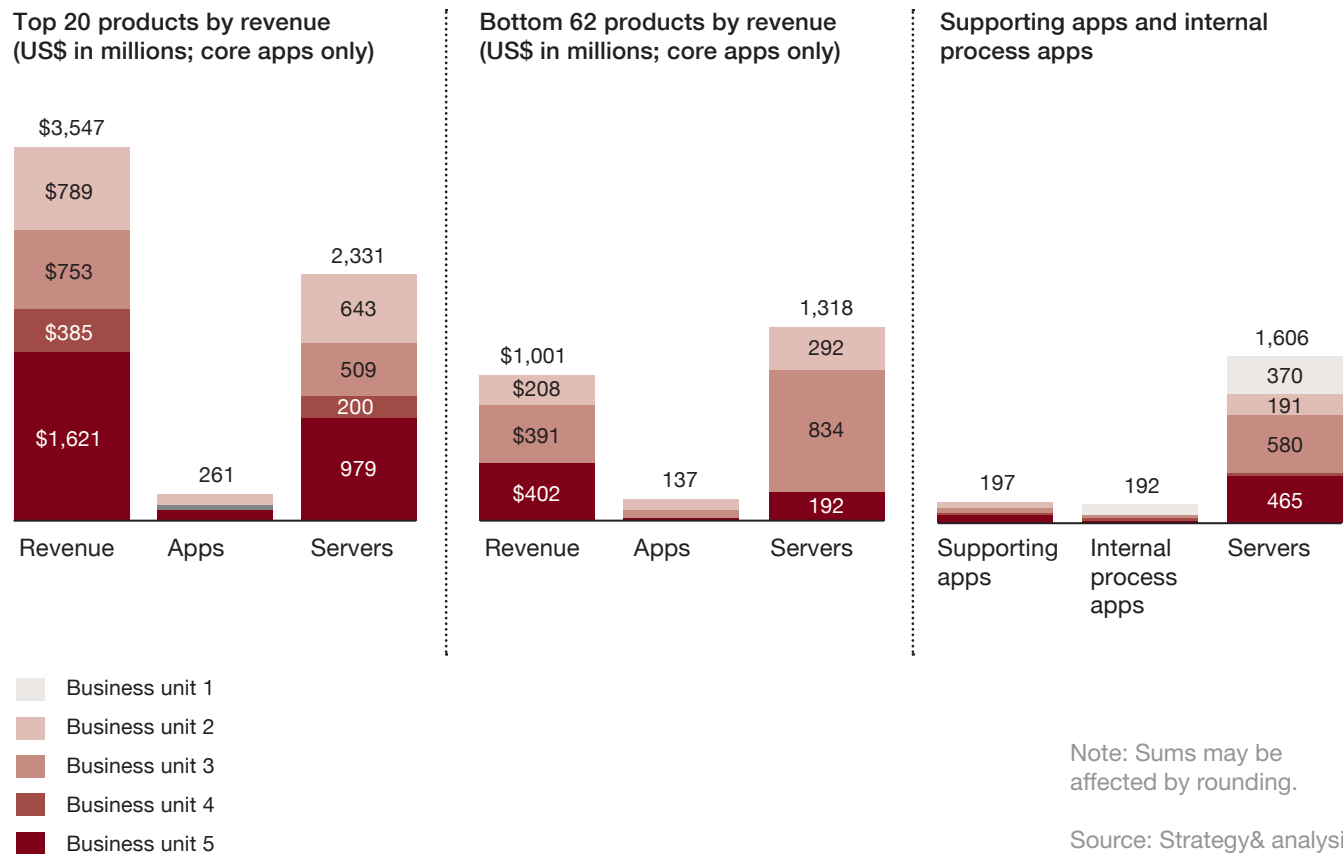
- Establish a linkage between the criticality of products and services and the associated applications and infrastructure

- Develop a better understanding of the TCO (including underlying technology costs) for specific products and services

- Define and standardize priority levels across the organization, along with technical requirements for each priority level

- Organize IT architecture by geographic and disaster recovery priorities

- Develop a complete data center strategy, including purpose-built disaster recovery that meets true business requirements

In addition, fit-for-purpose infrastructure strategy has benefits beyond just IT. For instance, by analyzing the IT total cost of ownership, this approach can provide greater visibility into the way specific products and services contribute to top- and bottom-line performance. That helps company leaders make more accurate decisions regarding which business lines to rationalize (*see Exhibit 3, next page*). In addition, the strategy provides increased transparency regarding business risk and helps regulatory compliance and audit by ensuring that companies have the appropriate level of resiliency in place.

Companies that have adopted this approach have reaped tangible benefits.

Exhibit 3

Fit-for-purpose infrastructure strategy can help determine a more accurate total cost of ownership for apps and IT infrastructure: Client example

Top 20 products by revenue
(US$ in millions; core apps only)

	Revenue	Apps	Servers
Total	$3,547	261	2,331

Revenue: $789, $753, $385, $1,621
Servers: 643, 509, 200, 979

Bottom 62 products by revenue
(US$ in millions; core apps only)

	Revenue	Apps	Servers
Total	$1,001	137	1,318

Revenue: $208, $391, $402
Servers: 292, 834, 192

Supporting apps and internal process apps

	Supporting apps	Internal process apps	Servers
Total	197	192	1,606

Servers: 370, 191, 580, 465

Legend:
- Business unit 1
- Business unit 2
- Business unit 3
- Business unit 4
- Business unit 5

Note: Sums may be affected by rounding.
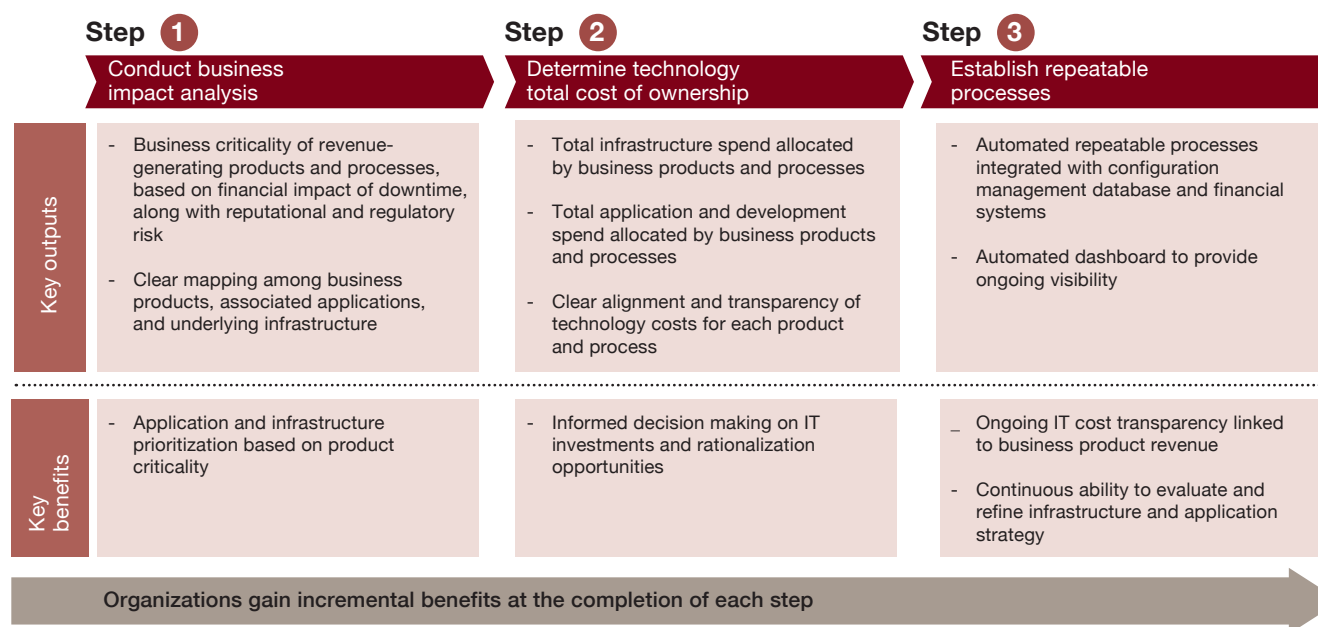
Source: Strategy& analysis

Three critical steps

Implementing a fit-for-purpose IT infrastructure strategy linked to business priorities involves three steps (*see Exhibit 4*). First, the organization must conduct a business impact analysis (BIA) to determine the implications of a potential disruption or outage for each product or service. Those products or services that would present the greatest costs — in financial, reputational, and regulatory terms — have the highest recovery requirements, and thus merit the highest infrastructure investment. In addition, the company must map the application portfolio to the respective product or service, as well as to underlying infrastructure components.

Exhibit 4

Implementing a fit-for-purpose infrastructure strategy linked to business priorities involves three steps

	Step ❶ Conduct business impact analysis	Step ❷ Determine technology total cost of ownership	Step ❸ Establish repeatable processes
Key outputs	- Business criticality of revenue-generating products and processes, based on financial impact of downtime, along with reputational and regulatory risk - Clear mapping among business products, associated applications, and underlying infrastructure	- Total infrastructure spend allocated by business products and processes - Total application and development spend allocated by business products and processes - Clear alignment and transparency of technology costs for each product and process	- Automated repeatable processes integrated with configuration management database and financial systems - Automated dashboard to provide ongoing visibility
Key benefits	- Application and infrastructure prioritization based on product criticality	- Informed decision making on IT investments and rationalization opportunities	_ Ongoing IT cost transparency linked to business product revenue - Continuous ability to evaluate and refine infrastructure and application strategy

Organizations gain incremental benefits at the completion of each step

Source: Strategy& analysis

The output of this analysis is a set of specifications that outline the performance and availability requirements for revenue-generating products and processes across the organization, transparently mapped to supporting applications and underlying infrastructure. With this in hand, the organization can design a reference architecture needed to support that future state and clearly understand cost implications.

The second step is to assess the total cost of ownership of technology supporting all products and services across the organization. Within technology, infrastructure includes fixed and variable costs of the environment (servers, databases, and storage), along with other IT costs such as licensing, network, and hosting. Next, the company must determine a methodology for allocating those fixed costs to products and services. The more detailed the organization can be (for example, including things like vendor-related costs and process- or management-level overhead), the more valuable the results. Critically, this correlation of infrastructure to products and services — informed by the business impact analysis — will include not only the current state but the desired future state after business and IT leaders have reallocated their IT spending based on the impact analysis in the first step.

Third, the company must establish repeatable processes allowing it to iterate the first and second steps as needed. Revamping the IT infrastructure strategy is not a once-and-done initiative. Even a perfect plan today will soon be obsolete, due to changes in technology, market demands, and evolving priorities within the organization. As a result, companies must build in mechanisms allowing them to iterate and refine their infrastructure strategy.

This entails maintaining up-to-date inventories of all products and services in the portfolio, along with their business recovery requirements (meshed to the prioritization system established above). Many companies succeed by developing an automated dashboard that can consolidate metrics across the organization — such as per-product revenue and IT spending allocations — to give leaders a real-time view of the company's current infrastructure and how well it correlates to current priorities. Maintaining the dashboard typically involves an information architecture, tools, and processes to maintain the information, along with a governance structure that delineates clear roles and responsibilities.

Revamping the IT infrastructure strategy is not a once-and-done initiative.

How to get started

To get started, it is critical to create the necessary alignment and buy-in among senior leaders. CIOs can kick-start the process by defining a case for change and circulating it among business leaders. In generating buy-in, they should emphasize the transparency component — i.e., that businesses will come away with much greater awareness of the TCO, business impact, and service levels required for individual products and services, giving them greater clarity about how they are truly performing against the company's objectives.

IT leaders should also line up the necessary sponsorship from C-level executives, who can generate momentum early on and drive faster decision making in subsequent stages. Throughout the initiative, communication is critical. CIOs should ensure that businesses receive intermediate outputs and status updates, so that they remain engaged. The overall goal is to convince all stakeholders that this is a joint effort and not just another incremental shift from IT.

Like any worthwhile objective, developing a fit-for-purpose infrastructure strategy comes with several clear challenges, including insufficient governance and business leadership, a lack of critical success metrics, and poor data quality.

For example, insufficient governance could lead to delays, deadlocks, and a lack of clarity regarding decision-making authority. To overcome this, organizations need coordination across the architecture organization to lay out and enforce policies and standards. Similarly, because this is such a collaborative effort, a lack of participation, especially at the middle and junior levels, could hinder progress. However, a top-down agenda from the C-suite, including strong communication about the benefits of the measure, can help ensure participation at all levels.

Throughout the initiative, communication is critical.

A lack of benchmarks and progress updates along the way can sap momentum and leave employees feeling that the initiative isn't working. If stakeholders define up front some success metrics — such as IT infrastructure cost as a percentage of total revenue, or speed-to-market for new products and services — it can give participants a sense of the strategy's true success.

Perhaps most notably, poor quality of existing data — about products and/or infrastructure — can present a clear challenge. Accordingly, IT leaders must not expect perfection on the first pass. Rather, they should invest sufficient time to build a "good enough" data repository, along with repeatable processes to ensure that the information quality improves over time.

Case study: Putting it all together

A recent Strategy& client wanted to implement a new fit-for-purpose IT infrastructure strategy oriented around its business priorities. The firm has multiple business units with different technology priorities, and up to that point, each unit had handled its own infrastructure strategy and planning. There was little communication across business units, and no firm-wide view of IT infrastructure. This resulted in a misalignment between IT spending and growth priorities.

For the first step — business impact analysis and reference architecture — the firm developed a baseline of all products and the associated applications/servers required to support them. Then the firm conducted joint workshops across all segments to establish recovery requirements. Using the input from stakeholders, it prioritized products and applications into five tiers, based on revenue or regulatory impact. For each of the five levels, it defined the reference architecture needed to meet the business requirements for resiliency. Of 86 total products in the firm's portfolio, just 14 were designated as priority one (the highest level), and only 53 of 743 total applications met this standard. By comparison, priority four, with just nine products, had the largest IT footprint, with 1,461 servers and 383 apps.

For the second step — quantifying the TCO for all products — the firm developed a product-level TCO view to understand product profitability. Based on the inputs mentioned above, it defined an overall hosting and disaster recovery strategy that was better aligned with business priorities regarding recovery and downtime. In the third and final step, the firm established a repeatable process so that it can continually evaluate this strategy and make refinements as needed.

As a result, the company now has a comprehensive cross-unit product inventory that ties revenue to product costs. In addition, it has a priority structure for products based on objective metrics rather than subjective criteria or judgments. Among other crucial observations, the firm's leaders determined that some 80 percent of total client revenue is generated by the top 20 products; in turn, those products are supported by 30 percent of the total application portfolio, and 40 percent of the total servers. That points to clear options for rationalizing the IT environment and making more informed decisions on IT investments going forward. Most important, the firm was able to maintain and improve this information on an ongoing basis, helping both business and IT leaders to make smarter business decisions.

Conclusion

Regardless of industry or geography, technology drives business success, today and for the foreseeable future. To win in this environment, companies must better align their IT infrastructure strategy to the larger strategic objectives of the organization, not only at a high level but also for each product or service in the portfolio. A fit-for-purpose infrastructure strategy helps achieve this, giving both business leaders and IT leaders a better sense of how these elements of the company mesh. Given the rapidly evolving state of technology today, companies can give themselves a sizable advantage by getting ahead of this issue and building in mechanisms that allow them to flexibly adapt to changes on all fronts — in IT infrastructure, company priorities, and market needs. Conversely, companies that continue to cling to outdated infrastructure strategies will find themselves falling further behind.

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