

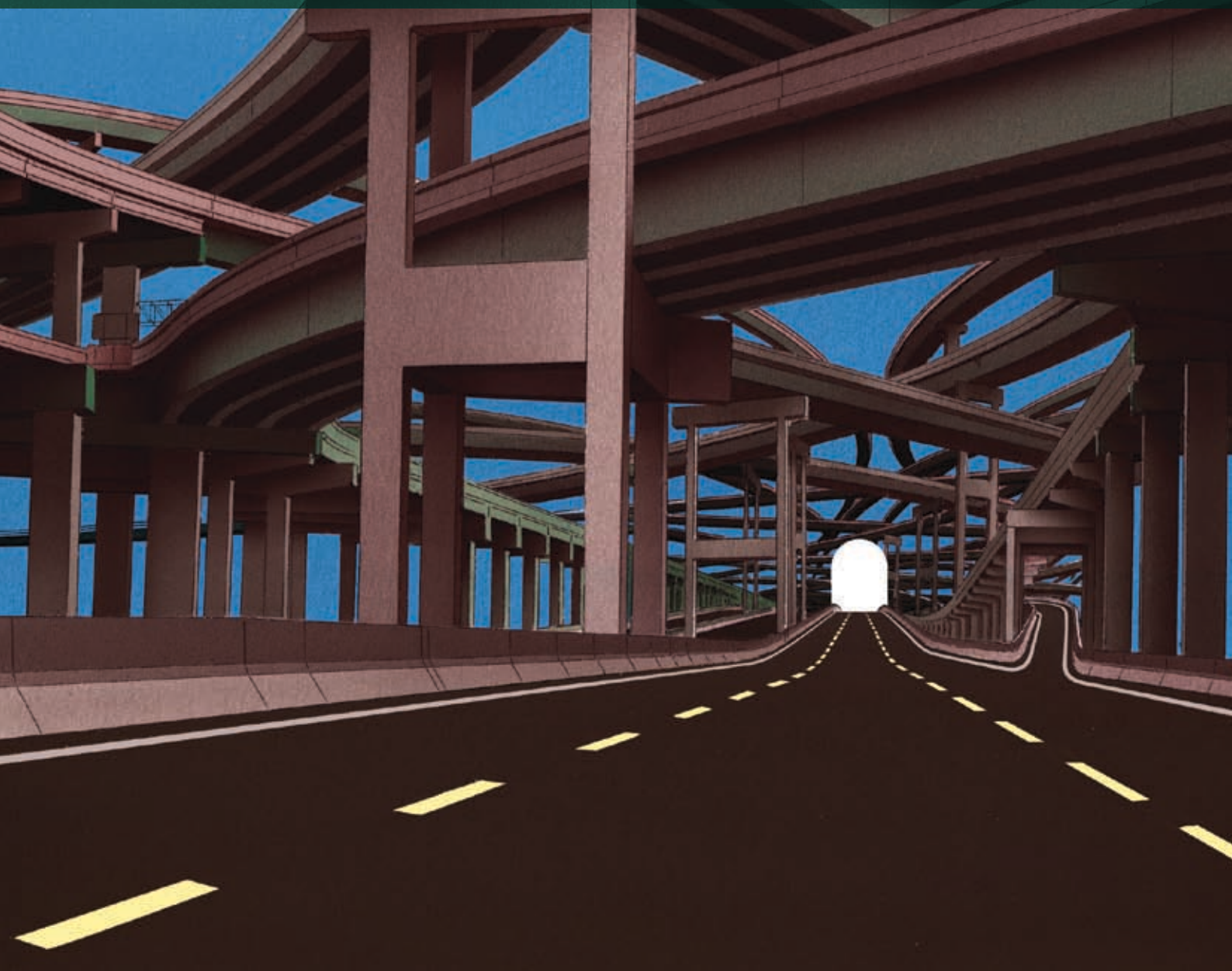
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Simplify IT

Six Ways to Reduce Complexity



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Simplify IT

Six Ways to Reduce Complexity

Michael Grebe and Enno Danke

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AT A GLANCE

Excessive complexity in the IT environment can drive up IT costs and reduce the IT organization's flexibility, agility, and overall ability to support the company's objectives. Reducing this complexity is difficult, however, as it typically builds gradually and stems from multiple causes.

A MULTIPRONGED APPROACH

Tackling unnecessary IT complexity demands a multipronged approach, one that covers both business-driven IT complexity and complexity that the IT function can address unilaterally.

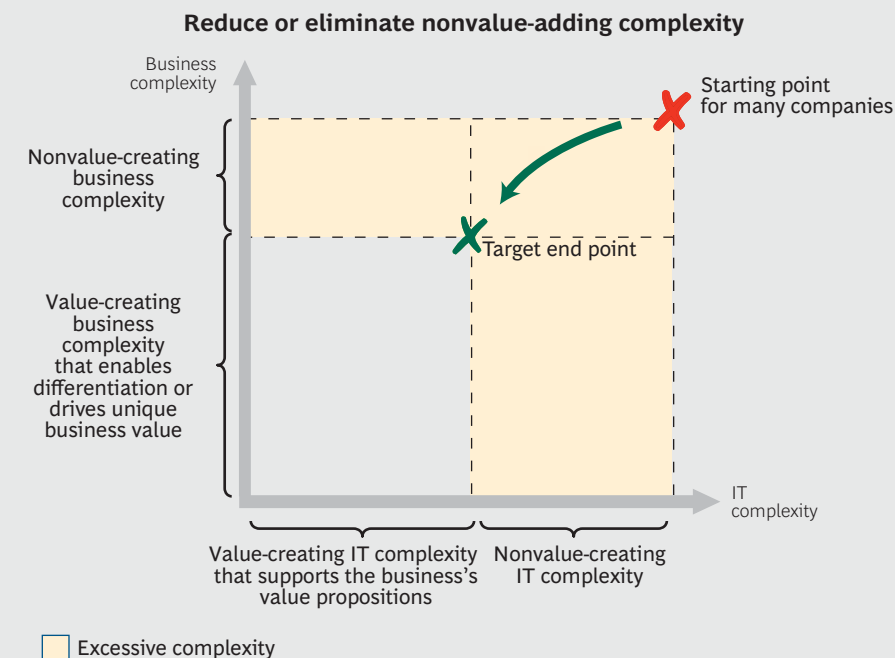
MUST-HAVES FOR SUCCESS

There are four must-haves in the design and implementation of a successful IT-simplification effort: a blueprint for the target end state and a roadmap for getting there; a program management office that helps drive progress and track results; simplification principles that are embedded into the company's governance structure; and buy-in from senior management.

A COMPLEX IT ENVIRONMENT IS often regarded as part and parcel of complexity in a company's business operations. Yet while some IT complexity is indeed inevitable and can, in fact, be a major driver of business value—by contributing to the creation of a more differentiated offering, for example—much complexity is ultimately unnecessary and can translate into higher costs and reduced agility and flexibility. (See Exhibit 1.)

Reducing IT complexity that does not add value is difficult, however, as complexity typically builds gradually and stems from multiple causes. Mergers and acquisitions, weak IT governance with decentralized decisionmaking, and a lack of understanding by the business of the costs of complexity are three common drivers. Another is the historical penchant of IT organizations to say yes to the business's requests without necessarily stepping back and taking a critical view of the longer-term, companywide ramifications of those myriad individual decisions.

EXHIBIT 1 | Complexity That Does Not Create Business Value Should Be Reduced or Eliminated



Source: BCG analysis.

But unnecessary complexity can be greatly reduced, if not eliminated, with the right approach. And the impact on IT costs and performance can be significant. Indeed, we estimate that an effective simplification effort can reduce application and infrastructure costs by up to 50 percent and total IT costs by as much as 30 percent. It can also give the IT organization far greater flexibility and agility and can improve its overall ability to support the company's business objectives.

Levers for Reining in Complexity

Successfully tackling unnecessary IT complexity demands a multipronged approach that covers both business-driven IT complexity and complexity that the IT function can address unilaterally. The six drivers discussed below can serve as the basis for such an approach and can be pursued simultaneously, sequentially, or in isolation. (See Exhibit 2.)

Intelligent Demand Management. Although IT unit costs continue to trend downward in general, most companies' overall IT spending is rising because of rapidly increasing demand from the business in terms of both volume and service level. Much of this increase stems from ignorance on the business side: due to a lack of transparency into IT costs, the business may request a degree of IT support for a given product or service that is disproportionate to the business value created by that product or service. By providing a comprehensive look at IT costs and identifying and prioritizing cost drivers and cost reduction levers, the IT organization can

EXHIBIT 2 | Reining In Excessive Complexity Demands a Multipronged Approach

Intelligent demand management	Provide the transparency necessary for the business to make informed decisions about its demand for IT services	<ul style="list-style-type: none"> • Improved interactions between the business and IT • Reductions in business demand for IT of 10%–15% • Potential related IT cost savings of 4%–8%
Scenario-based application rationalization	Optimize the number of applications through consolidation, replacement, and decommissioning using a top-down, bottom-up approach	<ul style="list-style-type: none"> • Decommissioning of up to 40% of applications • Greater speed and adaptability to changing business requirements • Potential reduction in total IT costs of 15%–20%
Infrastructure technology-pattern reduction	Reduce the number of patterns in the IT infrastructure, thereby minimizing the variety of technologies, processes, and skills necessary for application delivery	<ul style="list-style-type: none"> • Potential to reduce the number of patterns by half, with a resulting savings of 5%–15% of total IT costs • Greater ability to leverage economies of scale
A simplified IT organization and an enabled IT workforce	Trim management layers and optimize spans of control; ensure an appropriately sized and skilled IT staff	<ul style="list-style-type: none"> • Lower costs, faster decisionmaking, and greater transparency • A workforce optimized for current and future challenges • A potential reduction in IT management staff of 20%–30%
Effective governance and simplified processes	Establish a comprehensive framework to optimize business-IT governance; simplify processes through use of lean and agile methodologies	<ul style="list-style-type: none"> • Better alignment between the business and IT • Significant streamlining of processes • Shorten development times by up to 60% and free up as much as 40% of capacity in the affected processes
A shared-services model and optimized sourcing	Adopt a shared-services model to service delivery; develop a unified, companywide sourcing model	<ul style="list-style-type: none"> • Optimized use of internal resources and greater ability to capture scale and factor cost advantages • Greater negotiating power with vendors

Source: BCG analysis.

help the business better understand its use of IT resources and identify ways to reduce them in a manner that does not compromise business value.

To provide such transparency, the IT organization will need to answer such questions as the following:

- What is the actual IT cost generated by each business unit compared with the cost currently allocated? (Answering this question requires knowledge of the cost per application for maintenance, support, and development, as well as an understanding of how applications are being used by different business units.)
- Is the cost per unit for key IT services in line with market benchmarks (for example, the cost of outsourcing those services)?
- What is the current business volume for each IT service, and are there opportunities to reduce that volume for key services without lowering the business value generated (for example, by omitting unnecessary e-mails sent to clients and thereby lowering mainframe transaction volumes)?
- Are there opportunities to achieve savings by reducing IT service levels (for example, by limiting IT support for mobile devices in favor of support for desktop or notebook PCs)?

Business demand for IT support can be reduced by up to 15 percent, with a related cost savings of nearly 10 percent, with no loss of business value.

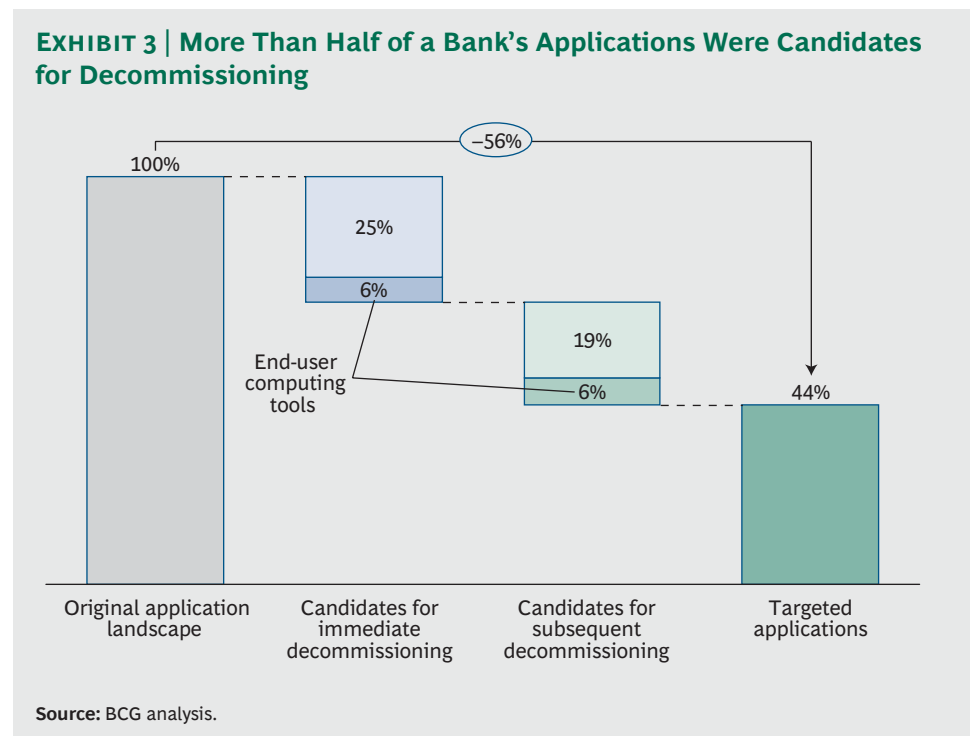
Armed with this information, the business can make informed judgments about its consumption of IT services—in terms of volume and service level—relative to business outcomes. A global financial-services institution, for example, found that it could realize sizable savings by scaling back its data-recovery capabilities: the business only needed to ensure recovery within 24 hours, but its existing system had been designed to provide recovery in a fraction of that time. Another company determined that the 24-7 “gold standard” IT support it provided employees was excessive, and that a “silver plus” level of service—six days a week for 18 hours a day—would be adequate. Similarly, a business might conclude that not all of its customers merit “white glove” service quality. For example, another global financial-services institution determined that the e-mails it sent its customers to confirm transactions could be considerably simplified—by removing home addresses from the messages, for example—without reducing customer satisfaction.

Efforts to optimize business demand for IT support can translate into solid bottom-line benefits. Our experience indicates that demand can be reduced by up to 15 percent, with a related IT cost savings of nearly 10 percent, with no loss of business value.

Scenario-Based Application Rationalization. A company’s application landscape is shaped by several factors. These include business-driven requirements (the need to support a new business channel or a more flexible product design, for instance), operations-driven requirements (such as the automation of business processes), technical requirements (including the demands of legacy systems), regulation-based requirements (such as those driven by Basel II regulations in the banking sector), and corporate-strategy considerations (for example, the effects of restructurings and M&A activity).

In many companies, this confluence of demands, combined with weak architecture governance and the absence of a clearly defined target outcome, has led to a cluttered, inefficient application landscape. Fortunately, a range of levers is available to address the problem; these include the bottom-up consolidation of functionally redundant applications and the replacement of selected applications with better or less complex ones. For many companies, the scope for application rationalization is vast. Indeed, for long-established enterprises, a decommissioning of up to 40 percent of applications and a reduction of 15 to 20 percent of total IT costs are often possible.

Application rationalization, it should be stressed, is not just about reducing run-the-company IT costs. Simplifying the application landscape can also improve change-the-company IT-cost efficiency and translate into a faster, more agile IT function—one better able to support business innovation and new-product development (for example, by reducing the number of interfaces and dependencies). A European bank concluded that more than 50 percent of its 500-plus applications were strong candidates for decommissioning and that nearly a third could be decommissioned immediately. (See Exhibit 3.)



There are three prerequisites for successful application rationalization:

- A clear commitment from the company's leaders
- Proper funding, since the business case for rationalization efforts per se is not always attractive (one way to ensure sufficient funding is to introduce a "simplification tax" that every IT project "pays" to support rationalization)

- Disciplined tracking of application decommissioning—for example, through a simplification “cockpit” that monitors progress and facilitates communication of results to senior executives

Infrastructure Technology-Pattern Reduction. Just as the number of applications can swell over time, so can the number of technology patterns—that is, configurations of hardware, system software, and middleware elements—in the IT infrastructure. This can drive up IT complexity and operating costs. It can also prevent the company from realizing available economies of scale.

For most companies, the scope for technology pattern reduction is large. Many can safely reduce the number of patterns by half, with a potential resulting savings of up to 15 percent of total IT costs. A global manufacturing and sales company is a case in point. The company’s strategy of growth through acquisition had pushed the number of applications it hosted to more than 9,000—and the number of technology patterns to more than 1,700. Each pattern had to be maintained; each pattern also reduced the company’s ability to leverage scale, as well as the speed with which it could provision and host new applications.

Many companies can safely reduce the number of technology patterns by half, with a potential resulting savings of up to 15 percent of total IT costs.

Seeking to radically streamline the environment, the company examined its technology patterns in search of commonalities and opportunities for standardization. It ultimately determined that just seven standard technology patterns would be sufficient to cover approximately 80 percent of its application needs. By enforcing this degree of standardization for the applications it hosted internally, and by increasing its use of virtualization and pushing for ever-greater standardization among its suppliers, the company aimed to realize substantial savings in IT infrastructure costs—roughly 40 percent over a three-year period.

A European insurance group offers another example. Over time, the company’s server landscape (driven by the common “one application, one server” approach) had grown quite complex and, as a result, inefficient, with an average 90 percent of installed server resources unused and 85 percent unused during peak times. By consolidating the server infrastructure into 20 standard patterns, the company created the precondition for a subsequent virtualization that allowed it to eliminate 83 percent of its server hardware and reduce its total server costs by 22 percent.

A Simplified IT Organization and an Enabled IT Workforce. Over time, a company’s growth in size, business breadth, and regional presence can create four distinct types of problems for the IT organization. The first is excessive layering of the management structure. This can lead to cumbersome decisionmaking and reporting processes, making the IT organization slow, lacking in transparency, and difficult to steer. The second is spans of control that are designed around individuals rather than the nature of the work. This can translate into micromanagement or, alternatively, insufficient focus on detail and training, both of which can take a toll on productivity. It can also result in overly small spans of control, driving up management costs.

The third type of problem is an organization structure that is not based on clear design principles (one that separates govern, plan, build, and run processes, for

example). This can result in redundancies and, at the other extreme, in scarce resources becoming “buried” in the organization. It can also lead to a blurring of roles and a resulting loss of focus by employees. The final type of problem is the absence of dedicated career paths for project managers and experts. This can result in suboptimal promotions (for example, technical experts being pulled away from their areas of expertise into general-management positions) and skills imbalances and shortages.

These four kinds of problems can lead to an inflexible and inefficient IT organization, one that is unable to adequately support the business in creating value. Fortunately, the potential for remedying such problems by simplifying the IT organization’s structure is significant. In our experience, it can allow many companies to shed between 20 and 30 percent of their IT-management staff while simultaneously driving down costs and boosting the IT organization’s agility and flexibility.

Simplifying the IT organization’s structure can allow many companies to shed between 20 and 30 percent of their IT-management staff.

The IT division of the European bank discussed above, for example, was struggling to meet the business’s requirements. A survey-based analysis of its roles and activities revealed that several functions, including application development and maintenance, were spread across multiple departments within IT—and within those departments, ownership and execution of these functions were dispersed. The resulting fragmentation, bottlenecks, and unnecessary management overhead were greatly impairing the IT organization’s productivity. A series of levers—such as resizing units, optimizing spans of control, and reassigning work groups and functions to other departments in order to bundle competencies and maximize transparency—allowed the IT organization to significantly increase its performance while reducing headcount by roughly 20 percent.

In parallel with simplifying the IT organization’s structure, companies should determine whether their IT workforce is adequately skilled and sized to meet current and future challenges—and what measures are needed to ensure ongoing preparedness. Another large financial-services company engaged in such an exercise in preparation for the multiyear rollout of a new IT-architecture and sourcing model. The company developed a detailed view of its needs by job function, followed by an analysis of potential declines in staffing resulting from retirement and other factors. The comparison made it clear that the company faced some critical skills shortages, such as infrastructure specialists and software-testing experts, as well as redundancies in roles related to soon-to-be decommissioned systems. Armed with this knowledge, it developed plans for eliminating the majority of identified shortages through the training and qualification (and sometimes the requalification) of existing staff, complemented by focused recruiting. The company was also able to address the oversupply situation without resorting to layoffs.

Effective Governance and Simplified Processes. In many companies, business-IT governance is not managed cohesively or from a holistic, firmwide perspective. Instead, decisions are made in siloed fashion within individual business functions or units, with little thought given to how those decisions might affect other parts of the company or the company as a whole.¹

A key to optimized business-IT governance and related processes is the establishment of a comprehensive governance framework. A single, overarching framework, one that has transparent guiding principles and is fully aligned with business governance, will not just increase understanding and alignment between the business and IT. It is also the prerequisite for linking business- and IT-planning processes in order to ensure that the company's limited funds for technology investments are prioritized across the company for maximum business benefit.

The experience of a major European utility is a case in point. The IT organization had been challenged to reduce IT spending. Yet, for the more than 1,000 projects in the project portfolio, there was neither a common, enterprisewide perspective on priorities shared by the business and IT nor a systematic process for identifying projects that overlapped different business units. To remedy these problems, the IT organization developed a common fact base that allowed it to identify pending projects that could be deprioritized, reduced in scope, or eliminated with no loss of business value. Key elements of this effort were the development of an understanding of each project vis-à-vis the business's planning and priorities and the integration of all projects into an enterprisewide project-portfolio planning and prioritization process with a single common interface across business units.

Strict governance is essential to optimizing both portfolio planning and prioritization and demand and supply management. But it is also critical to optimized IT-architecture management. Many companies lack a clearly defined target IT architecture or, if there is one, a means of enforcing adherence to the target. This can lead to a buildup of complexity in applications and infrastructure, which strict governance processes can help prevent. The European bank discussed above, in an effort to make its application-rationalization effort sustainable, moved to formally strengthen its IT-architecture governance and related capabilities by creating a dedicated architecture unit and four new roles (IT enterprise architect, IT application and information architect, IT integration architect, and IT technology architect). These employees were tasked with defining binding standards, principles, methodologies, blueprints, and enterprise architectures. They were also empowered to vote in key planning sessions of the bank's IT expert advisory board and were thereby involved early on in the development of new-product and change processes. As a result, the bank was able to keep preventable complexity permanently out of its IT architecture.

Lack of a clearly defined target IT architecture can lead to a buildup of complexity in applications and infrastructure, which strict governance processes can help prevent.

In addition to instituting effective business-IT governance and related processes, companies need simplified processes in order to keep IT agile, flexible, and efficient. Lean tools and approaches, provided they are both properly deployed (with an end-to-end perspective and an eye toward continuous improvement) and accompanied by supportive changes in mindsets and behaviors, can help engineer a fundamental transformation in the targeted processes. The results can be significant, with permanent improvements in productivity, quality, and speed of execution coupled with reductions in waste, cost, and operational risk.

An automotive company used lean principles to address problems with its IT-application development. Inefficiency and waste in the process were rampant, with idle time and rework often representing more than half of total cycle time. Through the

use of lean principles, the company was able to identify specific weaknesses and, critically, solutions—for example, the subdivision of large projects, alerts on projects facing difficulties, a strengthening of the project manager role, and better management of resources to avoid bottlenecks. These measures stand to cut the company's development time by more than 40 percent and deliver a savings of roughly €30 million.

Agile methodologies, too, can be a highly potent means of simplifying and improving processes. A large provider of energy-metering services that had recently adopted a new business model determined that it needed to overhaul its application-development process. The use of agile methodologies allowed the company to customize its software in small steps over time as the business came to terms with its new direction and the corresponding IT requirements became clearer. Because of this flexibility, the organization succeeded in achieving the maximum return on business value for the time and resources invested.

Lean and agile methodologies are powerful IT-simplification tools. Indeed, we believe that they can significantly streamline core IT processes, shorten development times by up to 60 percent, and free up as much as 40 percent of capacity in the affected processes.

To thoroughly understand the current state of their business-IT governance and process capabilities—and to identify the steps necessary to improve those capabilities and the potential benefits of doing so—companies should consider performing a holistic assessment, using a tool such as the BCG Innovation Value Institute's IT Capability Maturity Framework.²

Lean and agile methodologies can shorten development times by up to 60 percent and free up as much as 40 percent of capacity in the affected processes.

A Shared-Services Model and Optimized Sourcing. In many companies, the IT function is decentralized. This can have a variety of causes, including past decisions to maintain a dedicated IT presence for each individual business line or to keep the IT organization of an acquired company completely or partially separate. But decentralization can lead to redundancies and inefficiencies, both in the internal delivery of IT services and in the company's ability to efficiently source external goods and services.

To remedy this, many companies are establishing shared-services centers, which allow them to optimally utilize internal resources and capture scale and factor cost advantages. A global insurance company, for example, whose operations were significantly siloed by location and business unit, made highly effective use of a shared-services model in an effort to improve its cost structure. The company already had in place a small shared-services center heading into the campaign, but it was not functioning effectively: there was mistrust between the center and the business units regarding service levels and pricing transparency, with the business units ultimately opting out of many shared services and choosing instead to recreate the functions locally.

In response, the company designed an enterprisewide shared-services strategy for IT and other corporate functions and set as its goal a reduction in operating costs of 10 percent in the first wave of improvements and up to 30 percent in future

waves. The setup and rigorous execution of this program enabled a step-change reduction in IT complexity that otherwise would not have been possible, with the company achieving greater standardization, consolidation, scale advantages, factor cost optimization, and productivity in the areas of IT infrastructure, end-user computing, enterprise applications, and IT organization. The effort also delivered many second-order benefits, including shorter delivery times, faster decisionmaking, and reduced risk—all of which helped drive acceptance of the shared-services model and make implementation a success.

The approach taken by a European financial-services institution illustrates the potential for a smooth transition to a shared-services model. In the first wave of measures, the company centralized the operations and IT of its subsidiaries at the national level. In the second wave, it introduced common governance and steering for those national units and harmonized its activity portfolio. Finally, the bank merged its national units and began to systematically leverage selective outsourcing opportunities—achieving an enterprisewide shared-services center.

Most companies can reap significant value from a unified, companywide sourcing model.

Whether as a separate effort or as part of the process of establishing a shared-services center, most companies can reap significant value from a unified, companywide sourcing model. The pooling of demand and the resulting increase in negotiating power can result in material savings. Such a model can also be used to simplify interfaces with suppliers, either by moving one supplier into a prime-contractor role or by forcing different vendors to work together.

A joint KPI-based incentive and penalty system can be an effective way to encourage cooperation among vendors. A leading bank in the Netherlands that relies heavily on IT outsourcing (with the majority of its spending distributed across six vendors) frequently faced cross-supplier issues in its outsourcing agreements. Problems would arise that straddled supplier functions, but the bank's vendors had their own respective performance metrics and incentives, and saw little reason to work together toward a solution. To resolve this issue and create the necessary alignment among suppliers, the bank defined a limited set of shared KPIs, to which a significant share of vendors' variable compensation was linked.³ After some initial resistance, the suppliers came to enthusiastically support the model and the win-win partnership it forged.

Ensuring a Successful Start and Sustainable Progress

There are four must-haves in the design and implementation of a successful and sustainable IT-simplification effort.

The first is a blueprint describing the target end state and a roadmap for getting there. The blueprint should include the drivers the company plans to deploy (depending on its starting position and priorities, the company might benefit by starting with a subset of drivers—for example, intelligent demand management, scenario-based application rationalization, and a simplified IT organization and an enabled IT workforce). The roadmap defines the actual steps necessary to achieve the end state, taking into account technological interdependencies (for example,

between the retirement of some applications and the simplification of technology patterns) and the business's priorities.

The second requirement is a program management office that helps drive progress and track results. We recommend the establishment of a simplification “cockpit” that uses a few KPIs to measure the current level of IT complexity and makes progress visible to decisionmakers on both the IT and business sides. Results should also be communicated regularly to the company's executive board to enable assessment of progress against plans.

The third must-have is the embedding of simplification principles into the company's governance structure to prevent the buildup of new complexity. This demands the strong involvement of IT and operations and the enforcement of rigorous enterprise-architecture-management principles.

The final requirement for successful simplification is buy-in from senior business management (the CEO and CFO) and senior IT management (the COO and CIO).

IT SIMPLIFICATION IS a challenging but rewarding exercise. Done properly, it can help companies increase their agility, flexibility, and efficiency—all essential prerequisites for winning in these uncertain times.

NOTES

1. See “Between Anarchy and Dictatorship: A Framework for Information Technology Decisions,” BCG article, September 2011, for details on how a major European bank attempted to strike an optimal balance between centralized and decentralized decisionmaking.
2. See “Managing IT for Business Value: The New Gold Standard,” BCG article, September 2010.
3. See “Shared KPIs in Multivendor IT Outsourcing: Turning ‘I’ to ‘We’,” BCG article, February 2011.

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