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A Blueprint to Fix IT Complexity

A business-driven approach to managing IT applications

Reducing IT complexity tops the agendas of most companies and chief information officers. A recent A.T. Kearney survey of top executives finds that 85 percent identify IT as a major strategic differentiator for their organization. However, the economic downturn has brought more focus on cost-cutting and a shift in priorities. Increasingly, corporate leaders see their IT applications as the place to reduce complexity and costs while also meeting new challenges and expectations.

Today's IT organizations carry a heavy burden. They must enable business capabilities, deliver innovation and produce greater efficiency at lower costs. IT applications are expected to be "software superheroes"—able to improve marketing, data analytics and transaction processing while also managing customer relationships, supply chains and even product lifecycles.

Not surprisingly, many IT organizations are buckling under the pressure of these varied priorities—not because they lack the know-how or capabilities, but rather because of the Gordian Knot of complexity that has been woven over time. Excessive complexity is causing a host of new problems. A simple change in IT takes too long and runs over budget, or a new application fails to bring the promised savings while creating additional complexity. Companies can spend years and hundreds of millions of dollars trying to dig their way out of their legacy applications to take their business to the next level, only to fail because of the sheer complexity of their IT environment.

Complexity alone is not necessarily bad, but too much complexity in technology—or the wrong kind—can hinder future growth. Technology must remain flexible enough to meet the changing needs of the business—providing cost-effective applications, data and processes—while being intricate enough to help the company meet the challenges necessary for growth.

There are multiple ways to attack IT complexity. You can tear down the entire architecture and spend heavily to start from scratch. You can bolt on more software to help improve certain applications, at the risk of bringing even more complexity. Or you can do what we suggest to our clients—take a step-by-step, analytical approach and build an IT application blueprint.

How Many Is Too Many?

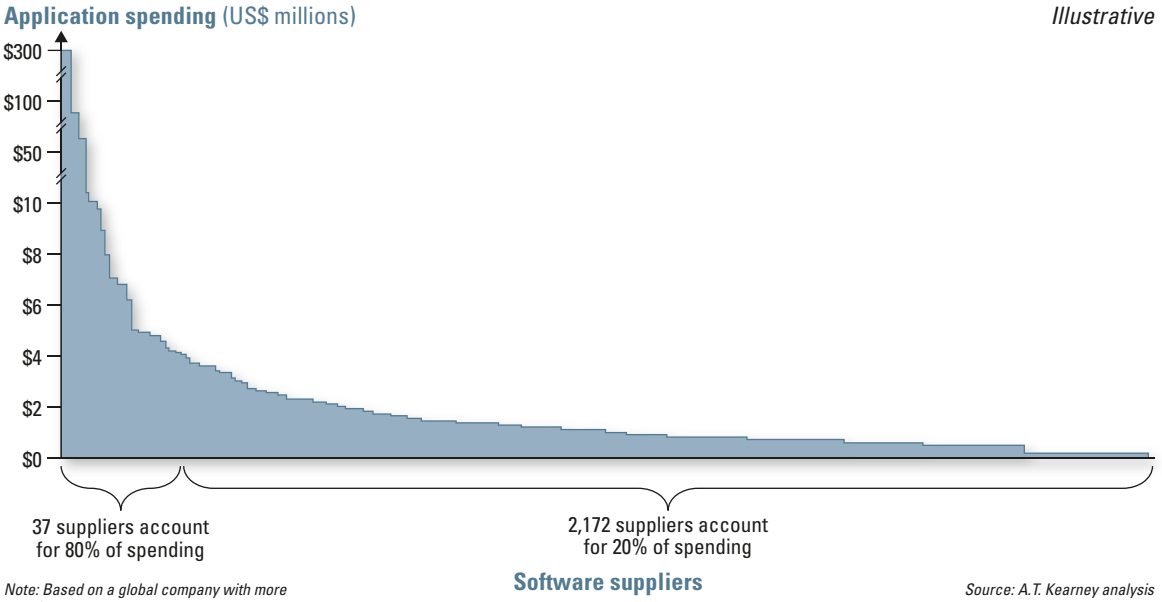
The number of software applications within companies has grown tremendously over the past decade as client-server and Web technologies spread into all areas and functions. The result has been a fragmented inventory, with a long tail of applications that are difficult to manage and operate at an appropriate cost. Figure 1 illustrates a company where 37 suppliers accounted for 80 percent of spending, and 2,172 suppliers accounted for 20 percent. In a recent survey, executives at large multinational corporations identified IT complexity as the most significant barrier to business growth and consider rationalizing the number of software applications as the largest cost-reduction opportunity within IT *(see figures 2 and 3)*. In fact, applications streamlining scores higher than offshoring and outsourcing.

A conversation with one CIO helps illustrate the frustration. He explained how his firm had launched a project to re-examine its application portfolio and develop a five-year IT application strategy. For more than six months, a team worked on segmenting and cataloging the application portfolio, and then delivered the results to the CIO. Yet he could not move ahead with the project. The final report he was given lacked a comprehensive total-cost-of-ownership (TCO) analysis or a clear plan for transformation. In the words of the CIO: "I was delivered a study instead of an implementable blueprint that I could take and immediately use to transform our IT assets. We still had to do a lot of work before we could take action."

This executive, like many others, learned the hard way that managing IT applications and

Figure 1

Companies struggle to avoid the "long tail" of applications and software suppliers

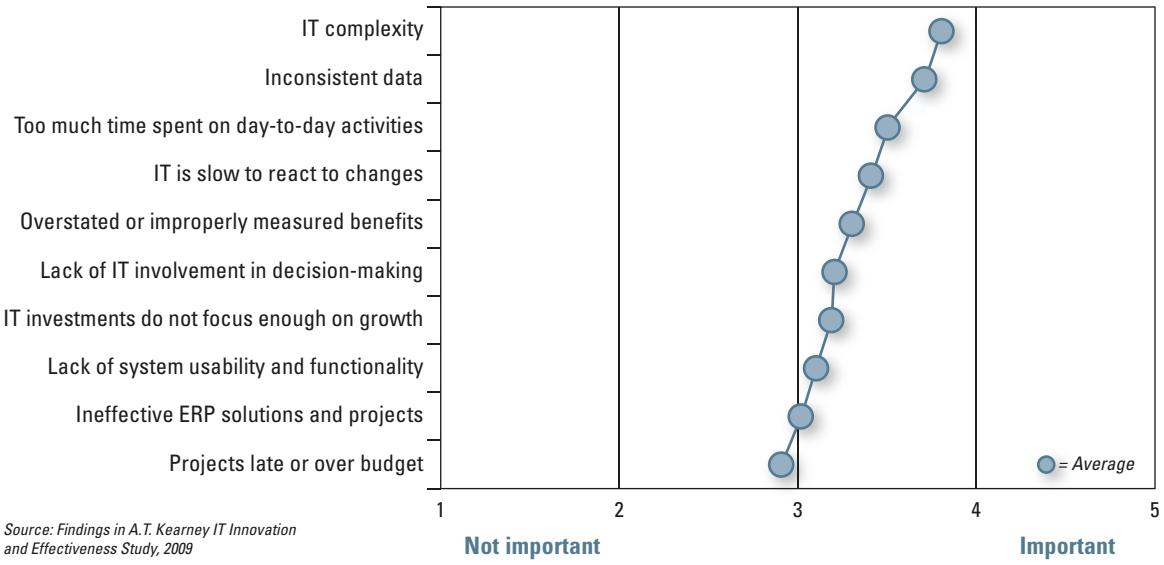


Note: Based on a global company with more than $1 billion in software spending

Source: A.T. Kearney analysis

Figure 2

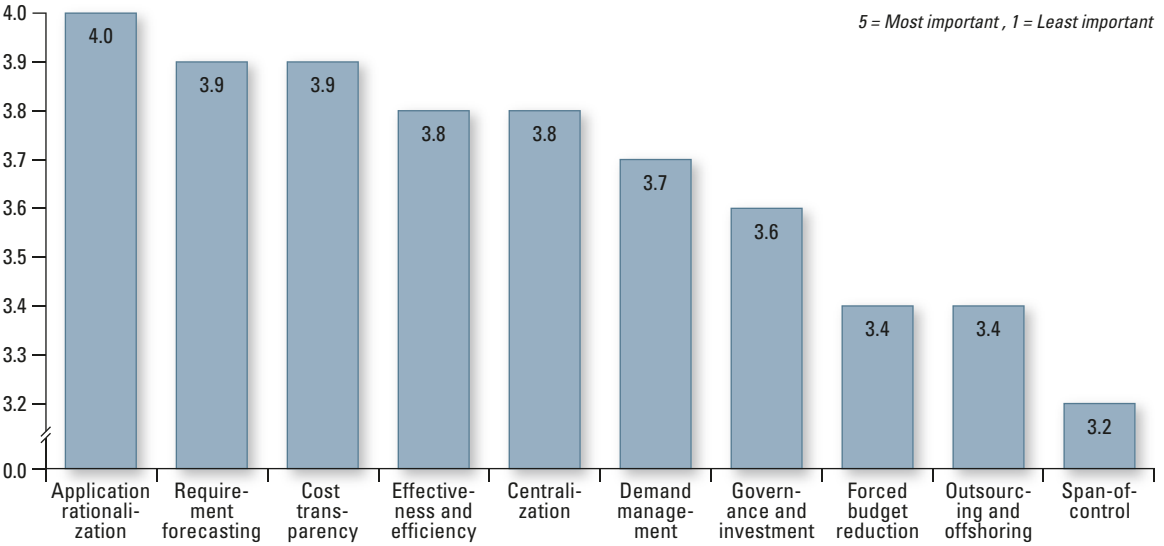
Which IT growth barriers are most relevant to your business?



Source: Findings in A.T. Kearney IT Innovation and Effectiveness Study, 2009

Figure 3

Which IT cost-reduction levers are most important to your company?



Source: Findings in A.T. Kearney IT Innovation and Effectiveness Study, 2009

complexity requires more than a task force and a final report. Business and IT must work together to overcome the mounting support costs, lack of internal expertise and oversight that often derail such projects *(see sidebar: Why So Many Problems?).*

Many IT organizations are buckling, not because they lack capabilities, but rather because of the Gordian Knot of complexity that has been woven over time.

A Blueprint for IT Applications

An IT application blueprint is a collaborative effort between IT and business leaders. It is a six-step approach that aligns the IT application portfolio to current and future business requirements *(see figure 4).* We take a hypothesis-based, big-picture view—identifying and eliminating redundant and inconsistent applications across different units. This gives stakeholders a balanced picture of the cost benefits that accrue from managing the IT applications portfolio. The blueprint establishes relationships between IT functions and business needs and serves as a common language for the entire organization—enabling better knowledge transfer and visibility. The approach includes a TCO analysis that links business needs and priorities, establishing a "should-cost" level for the future application portfolio.

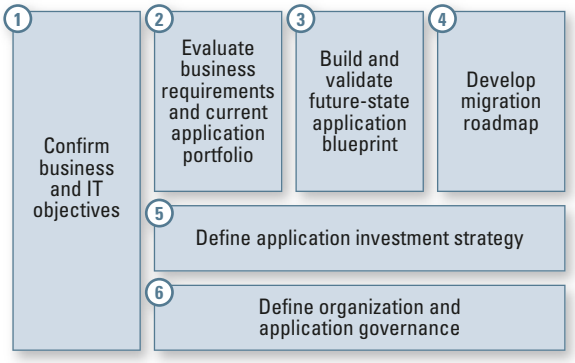
In the end, the company and its IT organization has an arsenal at its disposal—a suite of tools and knowledge that can be used immediately at the various phases of portfolio management. The tools include inventory survey templates, guidelines for segmenting applications, and TCO analysis worksheets. A roadmap with clear milestones outlines the major initiatives, required resources and necessary investments.

The Six-Step Approach

We used the six-step blueprint approach for a global automotive manufacturer. The automaker wanted to update its capabilities in order management, dealer integration, customer experience and all of its administrative functions. Over the previous decade the company had limited its IT investments to basic maintenance and a few select projects, while its competitors had invested in IT to improve performance and innovation. Meanwhile, our client

Figure 4

IT application blueprint: six-step approach



Source: A.T. Kearney

was bogged down with inefficient processes and functions in various geographies. It wanted to change those dynamics quickly.

We began with an evaluation of its IT-enabled business capabilities and improvement opportunities to condense the application portfolio. The goal was to reduce operating costs, enhance flexibility and improve market responsiveness.

Using our work with this automaker as an example, the following describes the six-step process of building an IT application blueprint.

Confirm business and IT objectives. We started with a simple set of questions for the executives. For example: What are your most important business capabilities? What are your constraints? Their answers helped us avoid a common pitfall in developing application blueprints: The failure to emphasize business objectives and priorities early in the process and establish stakeholder consensus and support for the effort. Executives' responses to these and other questions helped identify the major objectives and biggest challenges. We used an issue tree to identify the biggest challenges, including IT gaps in addressing business needs, an aging technical environment and ineffective IT investments. We also reviewed key priorities and objectives linked to the current application portfolio and projects for each function.

The issue tree set in motion the remainder of the application blueprint steps and identified the gaps most relevant to the business.

Evaluate business requirements and current application portfolio. Our client had a complex, widely distributed portfolio of more than 2,500 applications. We collected information across all key segments of the portfolio *(see figure 5 on page 6)*. In such situations we advise developing a comprehensive set of requirements for the application blueprint. We evaluated each application using a value-assessment matrix, which identified the

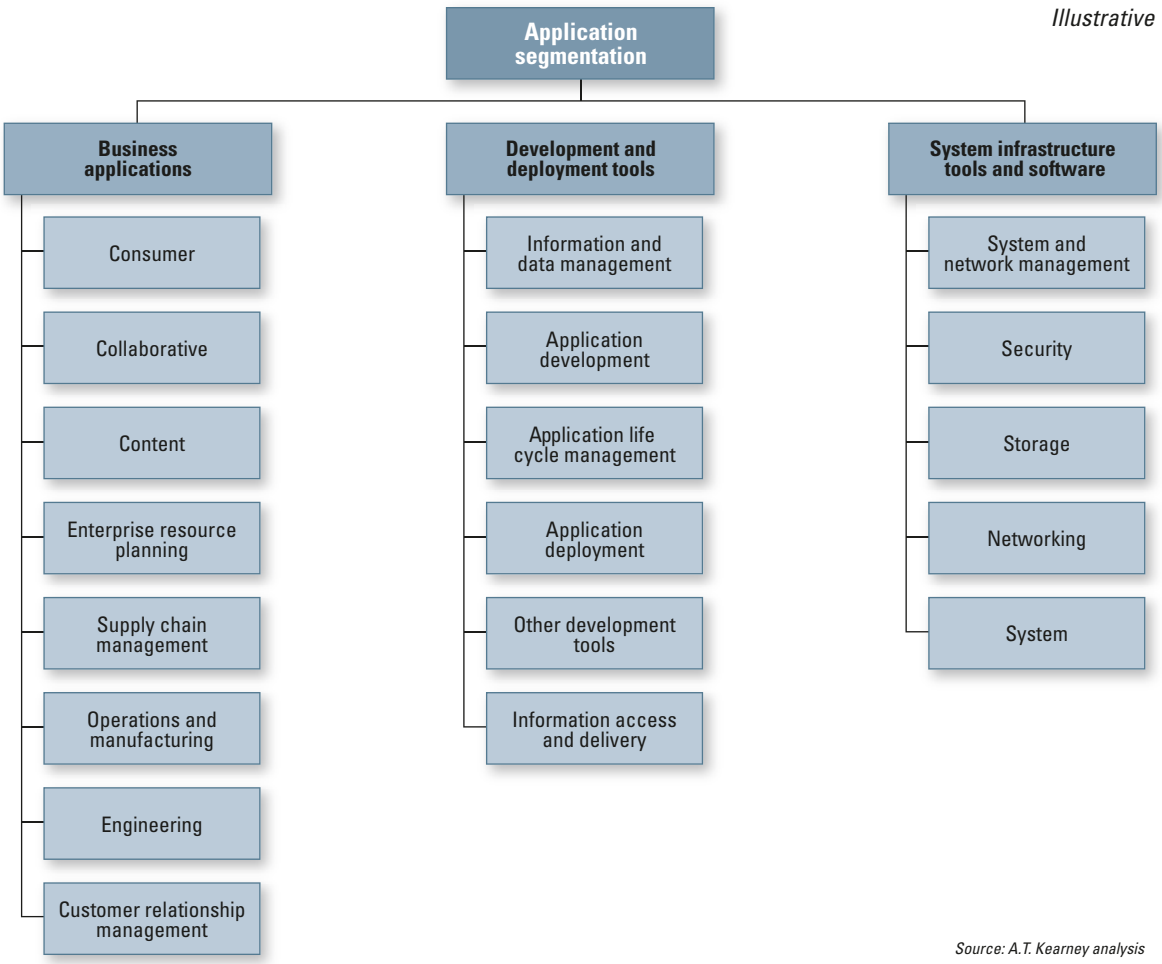
Why So Many Problems?

A number of issues are often to blame for unwieldy and complex IT application portfolios. Let's look at some of the most prevalent problems:

- Proliferation of custom applications. Commercial-off-the-shelf (COTS) products and custom applications were developed as demand surged. They often left companies with complex, rigid and expensive application portfolios.
- Growth through acquisition. This is a classic reason companies amass duplicate applications. Mergers often focus on getting the deal done rather than business and technology integration and simplification.
- Lack of long-term planning. Prioritizing immediate business needs leads to the development of inefficient custom applications on top of existing ones.
- Fragmented decision-making. It is not unusual to see business units introduce technology and application projects without consulting IT, which leads to application redundancy. Even more common is the introduction of multiple applications that serve similar, if not identical, functions.
- Niche technology focus. The easy availability of niche technologies for certain functions can contribute to the problem. The case for an individual project can be less compelling after you examine the overall impact to the application portfolio.
- Lack of governance. Most IT organizations do not have the necessary resources, analysis and structure to manage the portfolio properly.

Figure 5

The blueprint addresses all aspects of the application portfolio



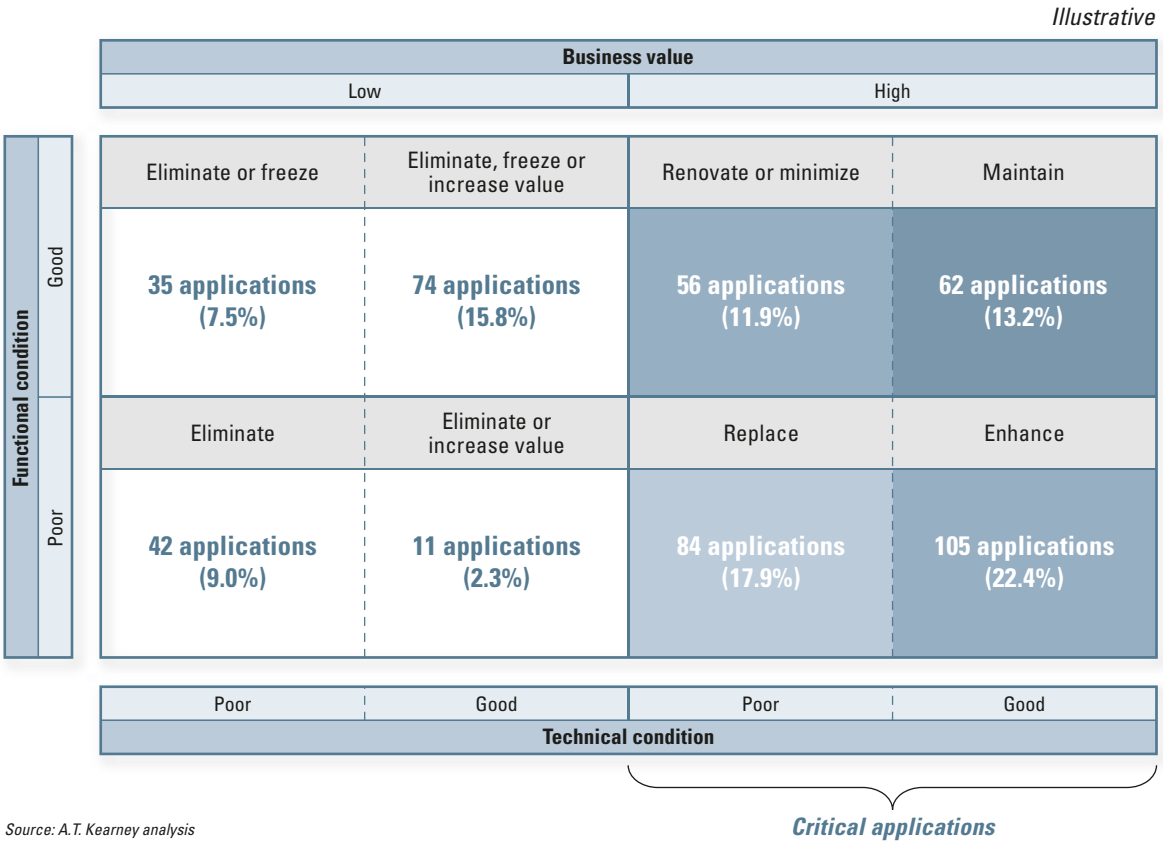
technical and functional condition of each application, rated each for its business value and suggested potential actions *(see figure 6)*.

At this point, applications are divided into the following three groups, based on their intended value and goals:

Improve operational excellence. This group typically comprises mature applications and data-center technologies—assets that should make information systems more effective and cost efficient. Examples include applications that monitor software and networks, enable data integration or run commodity administrative business functions.

Increase core value. The objective of these processes is to improve core business processes by taking value chains and business operations to world-class levels. The measure of success is not

Figure 6
Application value assessment matrix



Source: A.T. Kearney analysis

just cost reduction, but also improvements in returns or growth. These applications typically include ERP systems and workflow engines that enable and improve end-to-end business processes across functions.

Enhance innovation. These applications aim for breakthrough innovations to improve competitiveness and create strategies that transform market dynamics, reposition the company against its competitors, or allow entry into new markets. These can be leading-edge technologies such as mobile devices, cloud computing and service-oriented architectures. Mature applications and technologies that transform traditional paradigms or business models also belong in this group.

By segmenting applications into these three groups, companies can begin to view their portfolio based on the value delivered. For example, applications that improve operational excellence are typically prime candidates for outsourcing, since they provide base services and are standardized, which enables third-party support at a reasonable cost.

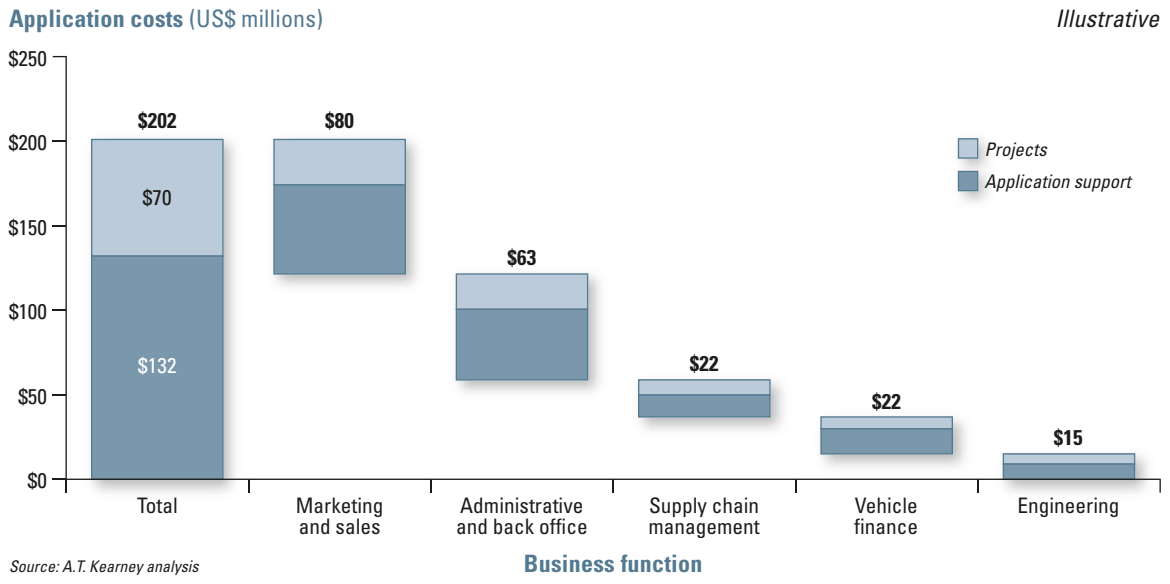
We also conducted a detailed TCO analysis of the automaker's existing IT assets and applications to understand the cost components and

how they will change during the transformation *(see figure 7).* Without a complete picture of the current application portfolio and cost model, subsequent efforts run the risk of overemphasizing technology and losing flexibility, responsiveness and business value.

Build and validate future-state application blueprint. Working with the functional leaders, we began building the application blueprint. We first segmented business functions and identified applications that helped each function meet its strategies and objectives. This allowed us to define which new IT assets, new applications and modifications were needed to meet business needs. We also identified applications that could be eliminated because they delivered minimal value or were made redundant by better-built or more important applications. The analysis helps business units gain a clear view of how IT systems are connected to their requirements and how they can work together to achieve the desired business results. Once this end-state vision is in place and confirmed by both business and IT, we can begin creating executable projects.

Develop migration roadmap. A migration roadmap outlines how to implement the application blueprint and eliminate unnecessary complexity. Here, we identify the targets and projects needed to realize the business capabilities and align them with the blueprint. The roadmap outlines a multi-year plan to address each applica-tion in the existing portfolio while building for the future. For our automotive client, the roadmap identified projects for five years, including the required annual investments and metrics. As noted earlier, without adequate detail, projects and milestones, the development effort will simply result in nice binders on a shelf, but few tangible results. The detailed

Figure 7
Total cost of ownership for existing IT applications



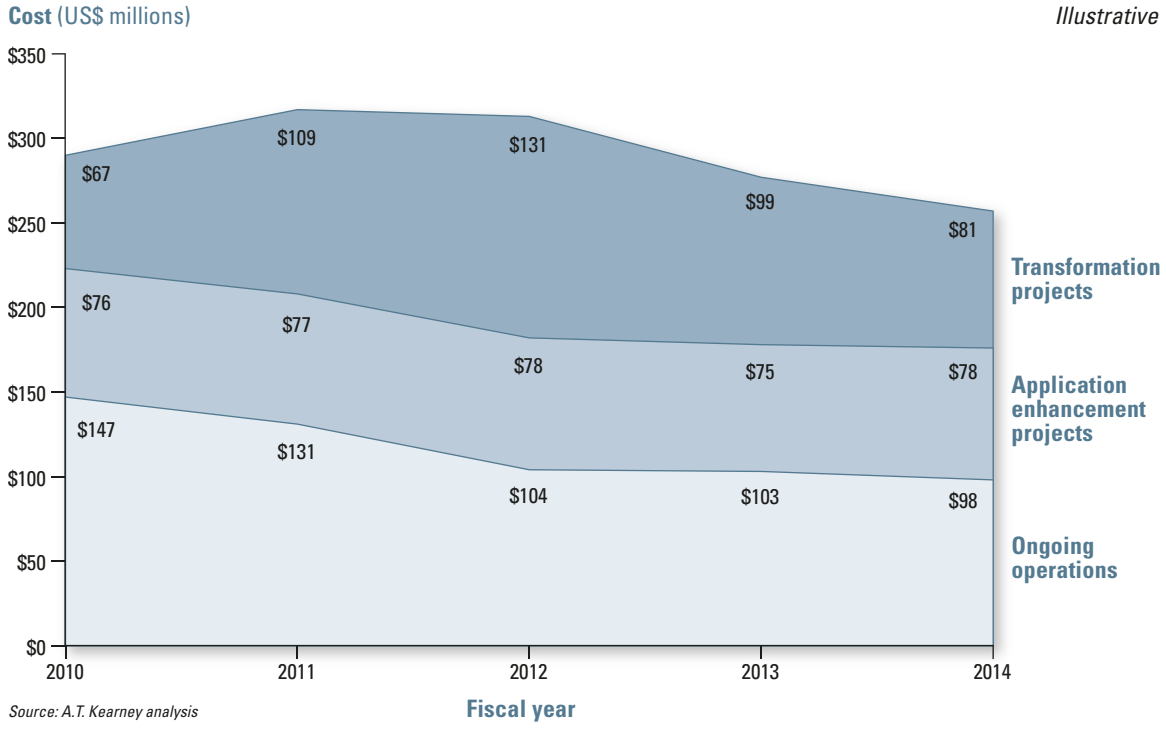
Source: A.T. Kearney analysis

roadmap allowed the automaker to forecast its resource needs and develop a coherent strategy to move forward and secure needed funding.

Define application investment strategy. All medium- and large-scale IT organizations face tough decisions when choosing between competing priorities. Our approach addresses this problem. It defines an application investment strategy based on business, technical, operational and financial parameters, so that senior management can make intelligent trade-offs. A key result of this step is a comprehensive TCO analysis of the application blueprint. We helped the company develop an investment strategy based on a comparison of business benefits and IT application portfolio costs. Figure 8 illustrates the strategy, identifying targeted investments for transformation projects, application-enhancement projects and ongoing operational costs. Additionally, this step pinpointed the needed investments and cumulative benefits of each application segment.

Design organization and application governance. This final step is vital, as it provides visibility and ongoing guidance for maintaining the blueprint. Here, our client defined the roles and leaders for the various IT systems, while we developed program management functions for executing the roadmap and updating the investment strategy based on evolving needs. In our final recommendations, we suggested

Figure 8
Future-state IT investment strategy



Source: A.T. Kearney analysis

establishing an application portfolio council and change review board. We have found that having a council and a review board helps a company make educated decisions regarding future investments and performance management and prevents inconsistent decision-making and overly complex application portfolios.

Enjoy the results. This automaker expects to earn $3 billion in cumulative benefits from its new blueprint and roadmap over the next five to seven years. More than $2 billion of that will come from multi-year, cross-functional projects

An Application Portfolio Scorecard

How do you know if your IT application portfolio is capable of meeting your future business needs? The following is a self-assessment to help determine the current status of—and focus areas for—your IT application portfolio. Rank each statement on a scale of 1 to 5.

Scoring. For each statement, a score of 3 or lower indicates an area where improvement is necessary.

Total scores can be assessed as follows:

40 to 50: Your organization is on the right path and the application portfolio is well positioned to increase business value. Continue to review specific gaps identified from this scorecard.

30 to 40: Your organization is taking many of the right steps but needs to change some areas significantly to optimize the IT portfolio.

20 to 30. The application portfolio is not well managed and requires strong leadership and a clear approach to improvement in key areas.

Less than 20: Your application portfolio is managed in an ad-hoc manner and poses a risk to the organization's business capabilities. The IT organization should redefine its applications and governance processes.

IT application portfolio self-assessment

Please indicate your response to the following statements	Scale (1 = strongly disagree, 5 = strongly agree)				
	1	2	3	4	5
1. The application portfolio can respond quickly to changing business requirements.	☐	☐	☐	☐	☐
2. There is a clear link between business processes and IT applications.	☐	☐	☐	☐	☐
3. The business helps define and govern the application portfolio.	☐	☐	☐	☐	☐
4. We have an application roadmap to address current gaps and enable future business capabilities.	☐	☐	☐	☐	☐
5. We have a framework for evaluating and incorporating innovative technologies into the application portfolio.	☐	☐	☐	☐	☐
6. Application support costs are decreasing year-over-year.	☐	☐	☐	☐	☐
7. We know the total cost of ownership for our current and future-state application portfolio.	☐	☐	☐	☐	☐
8. We can estimate the impact, from a business and cost standpoint, of application additions, changes and retirements.	☐	☐	☐	☐	☐
9. There are periodic refresh cycles to evaluate the application portfolio and roadmap in light of changing business goals.	☐	☐	☐	☐	☐
10. We have a governance approach and ownership of the application portfolio.	☐	☐	☐	☐	☐

Source: A.T. Kearney

focused on business-technology transformation. The remainder will come from improving core processes and remediation projects. Additionally, nearly 150 business applications will be retired in the next two years, providing several million dollars in further savings.

The Blueprint Timeline: Getting Started

Developing a sustainable application blueprint is challenging but indispensable for managing the complexity of a modern IT environment—particularly in global organizations. Unlike conventional approaches that focus solely on cost-cutting, the blueprint goes further by focusing on business needs and gaps to identify growth opportunities. Good strategy should be combined with a solid plan for implementation—particularly vital in organizations undertaking large-scale transformations, changing their vendor-management strategy or reviewing their cost structure.

Where to begin? The following is a proposed 90-day plan:

Month one. Align the organization and stakeholders to form the team and lay the foundation. Use a scorecard that rates your needs to develop a business case for change that, in collaboration with business, IT and outsourcing partners, outlines the objectives of the project *(see sidebar: An Application Portfolio Scorecard).* Assemble a steering committee of business and IT leaders and a dedicated project team. Review the six-step approach to develop a common understanding for the project. Within a month, all stakeholders should agree on the scope, the case for change, and the major targets for the blueprint.

Month two. Once the team is in place, focus on developing a baseline for success with your current application portfolio. Identify vital data points that will assess the functional and non-functional features of your applications. Develop common names to segment applications by their primary function, using inventory surveys, stakeholder interviews and input from subject-matter experts. Test and validate the segmentation with business and IT teams to ensure maximum coverage and transparency. Before the end of the second month there should be a validated fact base for the applications, the functions they support and the value they deliver.

> Business and IT **must work together to overcome the mounting support costs,** lack of internal expertise and oversight that often derail projects.

Month three. Compare the application portfolio with your business objectives and document any gaps and overlaps, and complete the application segmentation process. In addition, your initial forays into developing a long-term blueprint should involve collaboration with senior leadership in IT and business. You should also develop your initial points of view on portfolio direction and incorporate emerging technology trends. In three months your team should have a strong set of hypotheses and cost data to start

developing a TCO model for the current-state application portfolio. At this point, you will be ready to continue the push toward a sustainable application blueprint that delivers top value to your organization.

Launch to Success

As the pace of business and IT innovation intensifies, organizations will become increasingly dependent on effective applications to drive next-generation capabilities. IT organizations that cannot keep pace with changing demands are at risk of falling behind their more agile rivals.

Getting there will require significant changes in mindset and in the application portfolio, but the shift is as vital as it is difficult. The value that an application blueprint can ultimately deliver to the business in the form of cost reductions, enhanced functionality and flexibility are significant and greatly help businesses move toward the future. An applications blueprint can position the business and IT for enhanced performance for years to come.

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