**Transforming the IT infrastructure
to generate business advantage:
the CIO agenda to enable innovation
that matters.**

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Introduction

With ever increasing pressure to drive higher operating efficiencies, fuel business growth and enhance shareholder value, executives today are rethinking their traditional strategies. Few areas of the business are being more challenged than information technology (IT). At the same time, the role of the CIO is also undergoing significant change. Successful CIOs recognize that IT has become far more than a means of increasing efficiency and reducing costs. Rather, they see IT as a prime stimulus for and enabler of business innovation — and themselves as key collaborators in a process that develops business and IT strategies in concert.

Moreover, a growing number of CIOs have begun to recognize that traditional IT strategies may actually constrain innovation and efficiency. While they are critical to transforming the IT infrastructure and meeting the evolving requirements of the business; strategy, planning and capability development efforts are often sacrificed in favor of short-term fixes and the demands of day-to-day operations. With IT budgets virtually flat, and operations and maintenance costs on the rise, how can CIOs improve the spending mix to better enable future-oriented strategic innovation while providing a world-class IT infrastructure to support today's business requirements?

Increasingly, CIOs are exploring alternative IT infrastructure sourcing and delivery strategies that will help them to reduce costs and reallocate those savings to drive new business-enabling capabilities. In parallel, they are looking to align these strategies with corporate directives and action plans aimed at delivering a lasting competitive advantage, healthy profit margins and higher shareholder value.

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CIO as the enabler of growth

It's time for a reappraisal of the role of the CIO. It's time to think of the CIO as the third point in a leadership triangle. At point one is the CEO, seeking to grow the top line and make the organization ever more responsive in an on demand world. At the next point is the CFO, confronted with external regulatory pressures as well as keeping tight control on costs. Both of these agendas depend on a third point — the CIO. For it is the CIO whose role has the potential to enable growth by establishing a flexible, responsive and resilient IT infrastructure, making wise IT sourcing and delivery decisions, and enhancing systems and applications that support the business. It's a triangle with a powerful cutting edge.

### The changing role of the CIO

In the past, economic caution has led many organizations to define the CIO's priorities by what has to be done — taking cost out, ensuring the continuity of the business, maintaining the integrity and security of data, and so forth — as well as keeping pace with the changing demands of the business. This has been a reactive agenda.

Market-leading enterprises have recognized the enormous impact that IT can make — not only on growth and responsiveness, but also on process and cost-efficiency. They see beyond technology's traditional role as a support function and a cost take-out driver. In these organizations, IT is a business enabler and catalyst for innovation. These organizations recognize that information technology can provide business leverage and be a driver of top-line growth. They look to their CIO for the ability to drive this growth. They are using technology to render more efficiency across the business and to enable the business to integrate and exploit new requirements more readily. They are also using technology to provide new distribution channels, understand different ways to segment markets and develop profound new customer insights.

The CIO in these forward-thinking organizations plays a critical role, resolving the issues of the past with the opportunities of the future. The CIO has to ensure continuous improvement of the existing IT asset base, making current systems effective and manageable. But the role now extends far beyond being a technologist. Progressive CIOs are providing input into the strategic direction of their organizations, focusing on ways to align IT with business needs and unlock more value from business and IT investments. They are leading

board-level evaluations of emerging technologies that can create incremental value for core business processes and provide differentiating competitive advantage. Within a growth agenda, they are helping to map out the gaps between IT and business today, taking advantage of new approaches that reconcile and overcome these differences and identifying where IT can create the business value of tomorrow.
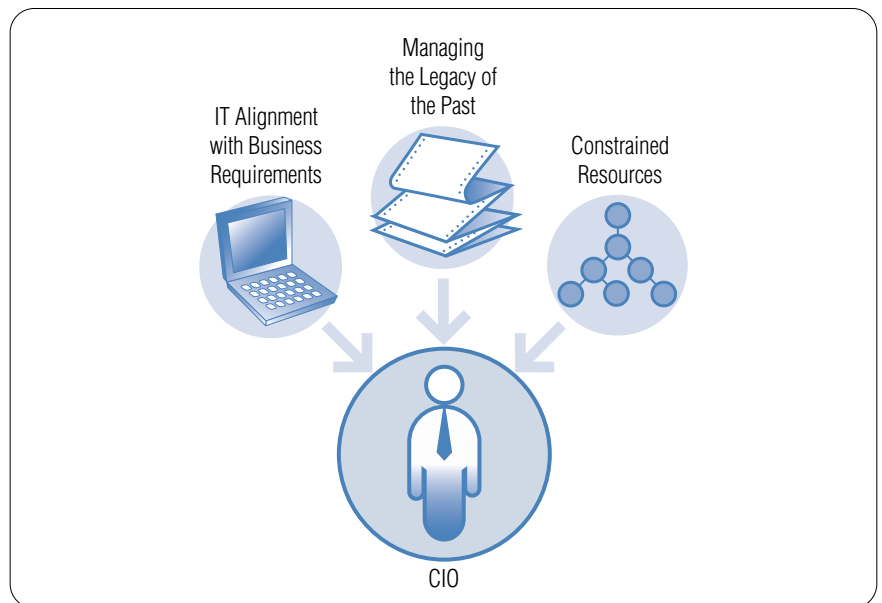
Today's CIOs find themselves at the center of conflicting demands: meeting new business require-ments, managing an increasingly costly legacy environment — and doing both in a climate of constrained resources.

Addressing the legacy of the past

The history of IT development has been piecemeal and proprietary. It is rare that an enterprise can obtain a full view of its whole IT infrastructure, as it is frequently divided into discrete environments, with ownership of pieces dispersed throughout the organization. In turn, this makes it difficult to tune IT response and to truly support the business. Furthermore, enterprise IT environments are often characterized by inefficient, vertically aligned applica-tion and data center silos. Adding to the problem, many enterprises remain saddled by suboptimal, complex legacy environments and resource limitations, which hinder the ability to tackle pressing new initiatives.

Enterprises rarely have a full view of their entire IT infrastructure, which makes it difficult to tune IT response to the needs of the business.

Cost-saving initiatives range from consolidating servers to consolidating entire data centers to achieve economies of scale.

Shared services strategies have not delivered anticipated cost reductions because companies find it difficult to achieve sufficient IT scale.

As the world's largest IT services company, IBM can help enterprises realize cost takeout that is well beyond what they could achieve on their own.

Under pressure to cut their costs, CIOs have been restructuring the IT infrastructure, organization and the provisioning of IT services. These changes have taken place in the past few years in a step-wise manner, starting with the optimization of resources (such as server consolidation) within the individual data centers, leading to consolidation of IT services delivery centers into optimized in-house shared services organizations. The theory was that economies would result from scale, standardization and streamlined operations.

However, many organizations have been disappointed in the actual savings realized from shared services approaches, finding instead that for even the largest companies it is difficult, if not impossible, to achieve sufficient IT scale and prowess to deliver anticipated benefits. Shared services also by their very nature provide a homogenous level of IT service across the company, while in reality, organizations demand a far more granular and individualized level of service delivery. For example, an emerging market or new start-up division would not require, nor could their margins afford, the level of service demanded by an established arm of the business.

As a result, companies that have reached the point of diminishing returns on consolidation and continuous improvement need to leverage the truly massive scale of an IT services company to take more cost out of the infrastructure. IBM, for example, manages more than US$40 billion of IT spending annually on behalf of its clients. That is more than the IT spending of the top 13 financial institutions in the world combined — or, similarly, more than the top 50 firms in the consumer products industry. At this level of investment, IBM can achieve economies of scale that individual companies could not accomplish on their own.

Looming on the horizon are end-of-life issues for core applications running on client-server platforms.

Lack of funding and shortages of critical skills can retard a company's ability to invest in new application platforms.

Keeping critical legacy applications up and running can consume resources intended for development of new business-enabling capabilities.

At the application layer, many CIOs will soon be facing end-of-life issues around their investments in enterprise resource planning (ERP)-based systems running on a client-server architecture. ERP software vendors are bringing to market new technologies, new software platforms and new functional applications in order to offer to their customers new capabilities, new application integration facilities and new functional modules — and as a way to address stagnating licensing revenues. Furthermore, new models for delivering applications on demand are reducing and reshaping the economics of application delivery and maintenance. This will cast current platforms, by comparison, as even less flexible, more obsolete and more costly to maintain. CIOs will feel increasing pressure to refresh the environment and replace current platforms with the newly released ones.

Although the new platforms may indeed be less costly to maintain, offer Web-based delivery, facilitate legacy integration and enable new capabilities and business processes, their adoption will require CIOs to be creative in finding new sources of funding. Failing to do so will mean running the risk of being left behind and losing competitive advantage. Resource capabilities will also play a huge role. As CIOs assess their organization's overall skill set, they must determine if existing staff is adequately trained to apply and manage new technologies across the extended enterprise and on a global scale.

The net result is that CIOs today are challenged to find creative ways to do more with less — to make those critical infrastructure improvements required to meet changing business needs while keeping day-to-day operations running smoothly. Too often, the costs of maintaining critical legacy systems siphon off funding and people earmarked for the development of new, innovative and business-enabling capabilities requested by the CEO — development that could have a multiplying effect across the business. With IT budgets virtually flat — and "fixed" costs for maintenance and operations continuing to grow — how can CIOs operate and manage those legacy systems and, at the same time, drive the strategic development of a world-class IT infrastructure?

Today's IT models fall short when it comes to delivering speed to market and return on investment.

The future state of IT infrastructure and service delivery

CIOs are under increasing pressure to show a rapid return on any IT investments they make, pushing them to look for alternatives that will lessen the financial burden and speed the time to value. Even the most well-conceived IT projects can be difficult to execute, involving more time and resources than originally expected. While these projects may be designed to solve a particular business issue, they can fall short due to rapid changes in technology and a company's lack of technology skills.
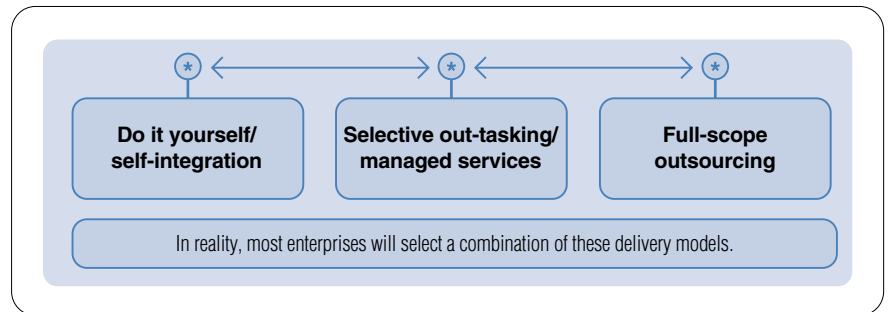
A new IT model is required to address the IT legacies that hinder business growth and flexibility – one that is designed to lower the total cost of ownership of hardware and software, reduce the cost of IT operations and prepare the organization to take advantage of advancements such as wireless communications, Voice over IP (VoIP), radio frequency identification (RFID), speech recognition, service-oriented architecture (SOA), Web services, autonomic computing and grid technologies. Operational efficiency and a flexible infrastructure are fundamental elements of this new model. It requires a shift to an open operating environment where all the component parts are fluid and able to change when business conditions change. It requires processes and information that are integrated up and down the supply chain, so that real-time transaction processing, data mining and decision support are possible within and across company lines. An organization that can function in this fashion – as an On Demand Business – can take advantage of new technology advancements. It can implement technologies that are aligned to its business strategies, and it has the resources available to innovate and grow.

CIOs are weighing the pros and cons of different service delivery alternatives.

Today CIOs are making significant headway in On Demand Business. They are leveraging virtualization and other on demand technologies to lower their infrastructure and labor costs. They are automating everyday tasks and improving the quality and speed of server management. They are pooling and optimizing servers and other IT resources across business units. By improving resource utilization and simplifying IT management, they are lessening the need for additional capital investments and reducing their IT costs.

CIOs are also carefully weighing their IT service delivery options. They are asking whether outsourcing IT is a viable option for their company or whether leveraging a few key vendor-managed services is the way to go. They are taking a candid look at in-house resources and deciding whether they have the necessary skills to handle new technologies internally.

Do it yourself/ self-integration	Selective out-tasking/ managed services	Full-scope outsourcing

In reality, most enterprises will select a combination of these delivery models.

Sourcing questions like these must be answered as companies move to a new, more flexible IT model. The decision process is unique for every CIO, and vendors recognize that they must offer sourcing alternatives to address a range of management preferences and budgetary needs. The fact is many

Blending "do-it-yourself," managed services and outsourcing delivery models can help CIOs better align IT and business requirements.

Changing select IT infrastructure costs from fixed to variable can deliver significant cost savings — up to 25 percent, or more — which in turn can be reinvested to help drive business growth.

CIOs can take an attractive package forward to CEOs and CFOs when IT costs are tied to business performance.

companies can benefit from leveraging some combination of out-tasking or outsourcing capabilities when these services are aligned with their business needs and IT requirements:

- *"Do it yourself/self-integrate" — For companies that are self-integrators and choose to transform their infrastructure using vendor-supplied components and in-house resources.*
- *Selective out-tasking/managed services — For companies looking to partner with a firm like IBM to assist in the development or management of select aspects of the IT infrastructure.*
- *Full-scope outsourcing — For the organization seeking to outsource a broad scope of its IT infrastructure and application management.*

In addition to more flexible delivery models, CIOs are also seeing greater flexibility in vendor pricing for IT services as they look to steer clear of rigid pricing structures that offer monthly predictability without the ability to adjust to changing business needs. In many cases, fixed fees have given way to variable forms of pricing, based on everything from IT capacity consumed to revenue realized. Pricing based on relevant business measures, such as number of users, number of courses completed or revenue realized, is winning strong favor with executive decision-makers. It ties IT spending directly to business results, helping CIOs forge the alignment between business and IT. This offers CIOs an added advantage as they take new IT initiatives forward to CEOs and CFOs. By tying the organization's IT costs to specified business outcomes instead of infrastructure performance or other IT-related measures, business-metric-based pricing makes it easier for company leaders to see the return on their IT investment. It can also help simplify and speed future IT spending decisions.
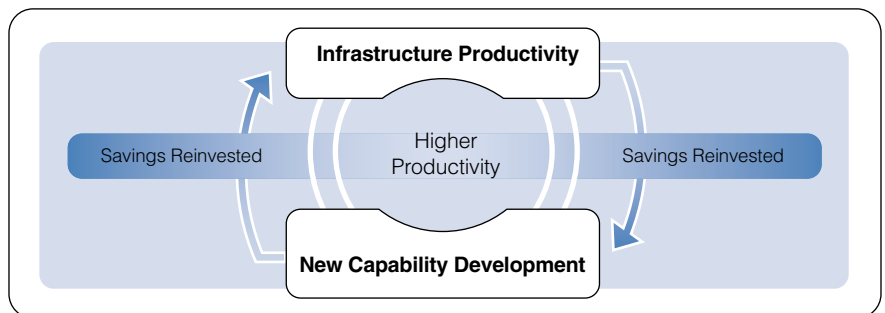
Creating a self-funding model for new business-enabling capabilities

While alternate delivery and pricing models are not "new news," the flexibility they offer is. The ability to fit delivery and pricing models to a company's business and IT organizational requirements:

- *Helps speed time to value by enabling more rapid deployment*
- *Helps enable organizations to focus on lowering the total cost of IT owner-ship—changing assets from fixed to variable costs (capital to expense)*
- *Has the potential to deliver, in IBM's experience, double-digit cost savings in the range of 15 to 25 percent, or even more.*

Businesses can leverage cost savings to create a self-funding model for new capabilities.

The compelling story is that cost savings can be leveraged to create a self-funding model for investing in new capabilities. In this model, infrastructure can become a critical part of the overall equation to help IT drive both business enablement, innovation and ultimately top-line growth. By taking cost out of the infrastructure area—for example, application maintenance and core infrastructure operations—and reinvesting the funds in new application capability, CIOs can drive both business enablement and business cost containment.

Reinvesting savings realized from IT cost reductions can create a self-funding model for new IT capabilities.

IBM proposes that CIOs run the IT organization as a business, applying the same kinds of analytical and management tools that line-of-business executives use.

Breaking an organization down into its component parts and determining which activities are differentiating can help CIOs and business executives alike make better informed sourcing decisions.

The IT business model: a new approach to making sourcing and delivery decisions

The key to successfully deploying these new delivery and pricing models lies in understanding which areas of IT are the levers of growth and which are critical but non-differentiating. By breaking down the IT organization into discrete building blocks — the people, processes and infrastructure that perform a single function — CIOs can target the investment areas that have the potential to quickly deliver the greatest return, and those which can be handed off to a lower-cost, more efficient partner.

For CIOs, this means a mindset of running IT as a business, and employing the same kinds of analytical and management tools that their business line peers are using. For example, IBM is helping many companies deploy its Component Business Model™ approach to determine the processes and activities that will differentiate the business as a whole. It works by looking at the enterprise as a collection of interrelated components, or core building blocks, that represent essential, value-creating business capabilities.

Current studies suggest that when an activity does not differentiate the business or drive a lasting competitive advantage, or that when this activity can be better performed by an external partner in a more efficient way and at a lower cost, it may be a candidate for third-party sourcing. In fact, IBM's own research suggests that in a typical company 13 to 28 percent of capabilities are core, differentiating and driving growth. But 55 to 74 percent are non-differentiating, including 32 to 47 percent that are critical yet non-core. The emergence of business process outsourcing for human resources, procurement, logistics, and finance and accounting is a direct result of this trend, as companies outsource these critical, yet non-core functions to reduce costs and focus on what brings differentiating value to their business.

IBM has extended component-based modeling for the business to the analysis of IT organizations. Component Business Model for the Business of IT (CBM-BoIT) helps CIOs to understand where resources are being applied and if IT is aligned with the direction of the business. CBM-BoIT was derived from proven frameworks, including the IBM IT Process Model, IT Infrastructure Library and IT Services Process Model, combined with thought leadership from across IBM and academia.

The Component Business Model for the Business of IT enables CIOs to understand how resources are being applied and identify gaps between IT and business alignment.

The primary purpose of an IT component is to provide technology-enabled business services. These technology-enabled services can be in support of internal business activities, or they can be externalized to support consumer-facing activities, such as Web sites. The CBM-BoIT map itself is technology agnostic, meaning that it does not assume any specific type of hardware or software. Rather, it takes the perspective that the IT function can be defined in a similar manner to any other component of the enterprise and should be managed using the same business disciplines.

This groundbreaking approach can reveal which IT activities are the most costly, or the most effectively delivered, and which provide strategic value to the business.

A component-based management method provides a collaborative environment to assess the current IT organization, identify gaps between IT capability and business strategy, and build a roadmap to a desired future state, either from a business or IT perspective. Using the component map as a tool for analyzing the IT organization and infrastructure, CIOs can begin to see which activities are differentiating and which are non-differentiating; which carry the highest and lowest costs; and how effectively the organization performs the activities within each of the IT components. The result is clear visibility into how strongly IT investments are aligned with IT and business strategic priorities. This approach supports decisions to optimize the IT portfolio, develop new sourcing strategies, prioritize investments, design the organization and enable innovation that matters for the business.

Component Business Model for Business

IT Systems & Operations

CBM for the Business of IT

	IT Customer Relationship Management	IT Business Management	Business Resilience	Information and Knowledge Management	Service and Solution Development	Service and Solution Deployment	Service Delivery and Support
Directing	Business Enablement Service & Solution Strategy	Business Technology Strategy; Enterprise Architecture; Portfolio Management; Technology Innovation	Business Resilience Strategy; Regulatory Compliance Strategy; Integrated Risk Strategy	Information Management Strategy; Knowledge Management Strategy	Development Strategy	Deployment Strategy	Services Delivery Strategy; IT Support Strategy
Controlling	Business Performance Planning; Demand Management; Communications Planning	Financial Management; Business Technology Performance & Value; Human Resources Management	Continuous Business Operations; Regulatory Compliance; Integrated Risk Management; Security, Privacy & Data Protection	Information Architecture; Information Resource Management; Knowledge Resource Management	Services & Solutions Lifecycle Planning; Services & Solutions Architecture	Change Planning; Release Planning	Operations Planning; Infrastructure Resource Planning; Support Services Planning
Executing	Business Performance Management; IT Services and Solution Marketing	IT Financial Management; Staff Administration & Development; Supplier and Contract Administration	Business Resilience; Regulatory Compliance Remediation	Content Management; Knowledge Capture & Availability	Service & Solution Creation; Service & Solution Maintenance	Change Implementation; Release Implementation	Support Services Management; Infrastructure Resource Management; Infrastructure Operations

The on demand infrastructure roadmap: a tailored game plan

The destination is an on demand infrastructure that adeptly uses and reuses individual IT components and is supported by open, flexible architectures. There are signposts that mark a company's progress on the journey, including:

A component-based analysis of the IT organization can help CIOs develop a roadmap for optimizing the IT environment via new sourcing strategies, prioritizing investments and driving business integration.

- *Resources can be rapidly deployed virtually anywhere in the organization to meet changing business needs*
- *The IT environment contributes to the resiliency of the business and is itself resilient — security-rich, and up and running around the clock*
- *Server and storage capacity approach 100 percent utilization and can easily grow or decrease to accommodate changes in usage volume*
- *End customers pay only for the IT capacity actually consumed – and that capacity can vary dynamically to meet peaks and valleys in demand*
- *IT outlays are 75 percent variable and 25 percent fixed*
- *Constraints on IT resources are no longer a pain point*
- *Infrastructure flexibility and implementation speed are a key source of competitive advantage.*

As CIOs begin to chart their course toward transforming IT to run like a business, their specific path forward will vary, depending on their current starting point and preferred approach to IT management. The planning process is vital, as it provides CIOs with the means to evaluate how they can take advantage of new IT capabilities and economics to drive peak performance and flexibility, which in turn can reduce fixed costs and drive revenues.

The end goal for the CIO is a resilient, security-rich infrastructure that adeptly uses and reuses IT components built on open, flexible architectures.

Few business executives and CIOs today would question the need to use IT as a driver of business success. Most are convinced that well-thought-out investments can leverage both business process efficiencies to reduce operating costs and top-line growth for gains in competitive advantage.

Highlights

IBM invites you to participate in a deeper discussion of the issues described in this paper, including a demonstration of how the self-funding model can be applied to your organization.

The real questions for CIOs are: Does my IT organization have the means and resources to act as an enabler of innovation and growth for my enterprise? Do I know how to build a cost-efficient sourcing model that takes advantage of the latest technology advances? And do I know where to start, how to prioritize and how to build the roadmap that will enable us to achieve these goals?

At IBM, our strategy and IT consultants understand the challenge. We have developed a structure for discussing the issues CIOs face, based on extensive industry-focused research and collaboration with both clients and consultants. Through this dialogue, we can demonstrate that a self-funding model for new business-enabling IT investments can be applied to your own organization. We can assist you in identifying the best combination of IT service delivery models for your company. And through a brief hands-on workshop, we can help you apply the Component Business Model for the Business of IT to your organization and build a roadmap for your evolution toward becoming an On Demand Business.

For more information
To begin this dialogue with a senior IBM Information Technology Services executive, contact your IBM representative or contact us at CIOAgenda@ us.ibm.com.

To browse through other resources designed for CIOs, we invite you to visit our Web site at:

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