

ENABLING YOUR E-BUSINESS INITIATIVES.

Highlights

...companies want all the capabilities of the Internet: mission-critical applications and supporting hardware, software and services.

Enabling this will be a challenge.

—Dr. Irving Wladawsky-Berger, Presidential e-Commerce Advisory Board member

Creating a common operations model for e-business helps enhance IT strategy and optimize business results.

Introduction

The Internet phenomenon is changing the way business is being conducted in all industries and geographies. CIOs and operations executives face several challenges since senior business executives expect information technology (IT) infrastructures to transparently support business strategy and growth. To provide value at the business-planning table as a CIO or operations executive, you need to have an understanding of what trends are shaping the e-business marketplace, how your enterprise can use e-business to optimize business results, and how your enterprise organizations must adapt to implement e-business initiatives. To enable you to effectively implement enterprise business initiatives, we recommend creating a common operations model that reflects how the enterprise wishes to operate, at any given time, within the Internet. This paper defines various operations models that may be used. Each of these models has a unique value proposition, organization culture, IT focus and scope, logical common function, middleware and overall infrastructure architecture. Aligning current IT investments and capabilities with the appropriate operations model will help you successfully achieve e-business goals.

e-business trends and challenges

The shift from legacy systems/client servers to an e-business network-centric computing environment allows companies to be proactive rather than reactive, business aware instead of environment aware and, most important, customer focused rather than IT-service focused.

Highlights

As businesses move from legacy systems to e-business networks, the trend will be toward enterprisewide integration and interoperability.

As this transition to e-business continues, a number of overriding trends are likely to shape business direction in the future:

- Enterprises will increasingly struggle with cross-domain and cross-enterprise management processes in support of business processes and end-to-end service levels. Enterprises will increasingly seek total solutions.
- The shift to Internet Protocol (IP) and a universal infrastructure sets the stage for the disruption of traditional services markets, as new vendors with different value propositions, profit models and strategic control assets aggressively engage the marketplace.
- The need for comprehensive management of corporate intranet and multi-enterprise business processes creates a new model for customer technical service and support. The new model requires the ability to capture, analyze and act upon environmental data ranging from platform configurations to business-process performance, within and across enterprises.
- Back-end systems integration is expected to play a large role as more corporations deploy e-commerce systems. Application interoperability now causes the most difficulty. Being able to provide a solution capable of integrating with existing IT infrastructures is increasingly viewed as an essential criterion in selecting IT vendors.
- Once connected, business processes across enterprises drive additional requirements for high availability and business continuity services. A secure, reliable, scalable e-business infrastructure is of paramount importance. At the same time, complexity in problem determination will increase.
- Enterprises face the constant challenge of managing rapid growth and staying current with new technologies.

Highlights

With the growth of an e-business infrastructure comes a corresponding increase in administrative demands and responsibilities.

Research indicates there are seven key drivers of varying complexity that draw companies to e-business.

These trends pose several challenges for companies as they create IT infrastructures that can support a Web presence, e-commerce, business processes, knowledge management, collaboration and a virtual community. Business continuity services must be in place that allow recovery from an emergency situation, such as a virus or Web site crash. Organizations must now be able to:

- Develop and implement a Web application and infrastructure strategy and architecture
- Develop application and infrastructure migration and deployment strategies
- Manage accelerated change and content
- Test changes in an accelerated way
- Reconfigure capabilities to respond quickly to customer needs
- Align, improve and transform operational processes for faster speed and for greater ability to sense and respond to customer needs with high-quality solutions
- Collaborate in new ways with partners and suppliers
- Supplement existing IT and organizational resources to match required skill sets
- Anticipate and solve potential problems before these problems occur (preemptive services)
- Obtain resources skilled in new technologies.

e-business drivers

Our research shows there are seven business needs driving e-business. These are not necessarily sequential; organizations can jump from one to another or may only be represented by one.

Help me...what do I do now?

A number of people and businesses appear to be confused by the potential implications of new technologies surrounding the Web. They are becoming increasingly aware of the tremendous technological and structural changes taking place within the business world, but they have no idea what to do about them. They are aware they need help and guidance but are not sure how to obtain it. They do not know whether they need to establish a simple Web site or whether they should be planning to transform their company into a Web-based "above-the-e-line business" that fully embraces the new e-business model. (See page 17.)

Establish and grow a Web site presence

Tremendous momentum exists in the marketplace for businesses to establish a Web presence. This is driven by unprecedented levels of advertising and news stories, all of which create a sense of urgency for most businesses, large and small, to get onto the Web. Because the technology is still new and relatively unknown to many of the decision makers, their first step is to develop simple Web pages, which can be best described as “brochureware.” Their objective for this first step is to minimize risk and costs while learning about the Web and taking advantage of its extreme communicative power. At this stage, many decision makers are aware they need to be on the Web, but they have not developed any long-term strategy or vision about how best to use it. The content of their Web sites consists of basic information they believe will be of interest to their customers and that they hope will drive sales. Their Web sites are not tied to any internal systems, and they have not changed any fundamental business processes to incorporate Web technology.

Sell and transact via the Internet

There are two primary motivations that drive a company’s desire to process transactions via the Internet. The first is to increase sales and profitability by using the Internet as a new sales channel. For many, this is driven by a fear of losing competitive position because they have no Web presence. These companies need Web sites that let customers easily and securely make purchases. The second motivation is to increase business-process efficiency and costs. These companies are more operationally oriented; they want to gain competitive advantage and increase profits through improved transaction efficiency. This includes improved efficiency of the customer interface (reduced need for customer support personnel), purchasing of goods and services, and communications with business partners such as distributors.

Redefine customer relationships

Once business decision makers become more knowledgeable and comfortable with the technology, they become aware of the potential impact the Web can have on the relationship they build with customers. They understand that the Web allows them to create a knowledge base that builds close customer relationships, because customers find it easier, more efficient and enjoyable to do business with them. The Web allows customized and personalized interactions that can be tailored to the specific buying habits or demographic needs of their customers. This new relationship has the potential to build incredible customer loyalty that is difficult for a competitor to break down.

Share business processes with suppliers and partners

At this stage, companies want to increase business efficiency and productivity by linking business processes directly with suppliers and business partners. These links allow collaboration between the many companies in the chain and increase overall operational efficiency. To take full advantage of this collaboration, companies must reengineer themselves by allowing certain core business processes to be handled by suppliers and partners, such as access to billing and payment information and inventory management. For example, when a trucking company updates receiving information directly into a partner's inventory management system as freight is being delivered, this eliminates the need for receiving clerks on the partner's loading dock. This type of collaboration demands a high level of trust and consistent objectives between the organizations.

Highlights

Share knowledge and collaborate

As companies become e-businesses, the demand for information and collaboration grows. e-businesses need to share information throughout their organizations, as well as with suppliers and partners. This requires improved internal communications and processes for employees, contractors and key stakeholders. This also demands the appropriate infrastructure and common linkages to make this information- and work-sharing possible.

Ensure an optimum technical foundation

To exist as an ongoing business entity, an e-business must have the “technical foundation” or infrastructure in place to handle the increased IT demands of the Web-based business model. A failure in an e-business technical foundation, which under earlier business models might have been only an inconvenience, can now deliver a potentially devastating blow. An e-business is now dependent upon technology to perform core and essential business operations. If these operations fail, even for short periods of time, the business can come to a complete halt. Based on this, an e-business company must have a technical foundation that is 100 percent available, fully secure and designed for optimal performance. Otherwise, other competitors with a stronger foundation can gain the advantage.

Most companies follow an evolutionary path to e-business implementation that starts with awareness and ends with true business transformation.

e-business adoption cycle

To maximize your return from your e-business infrastructure investments, you should have an understanding of how corporations implement e-business. IBM-sponsored market research indicates that companies move through common phases in their evolution to e-business: awareness, presence, pilot, adoption, integration and transformation. Companies can use this adoption cycle (see Figure 1) to prioritize, assess and allocate resources to create their e-business visions.

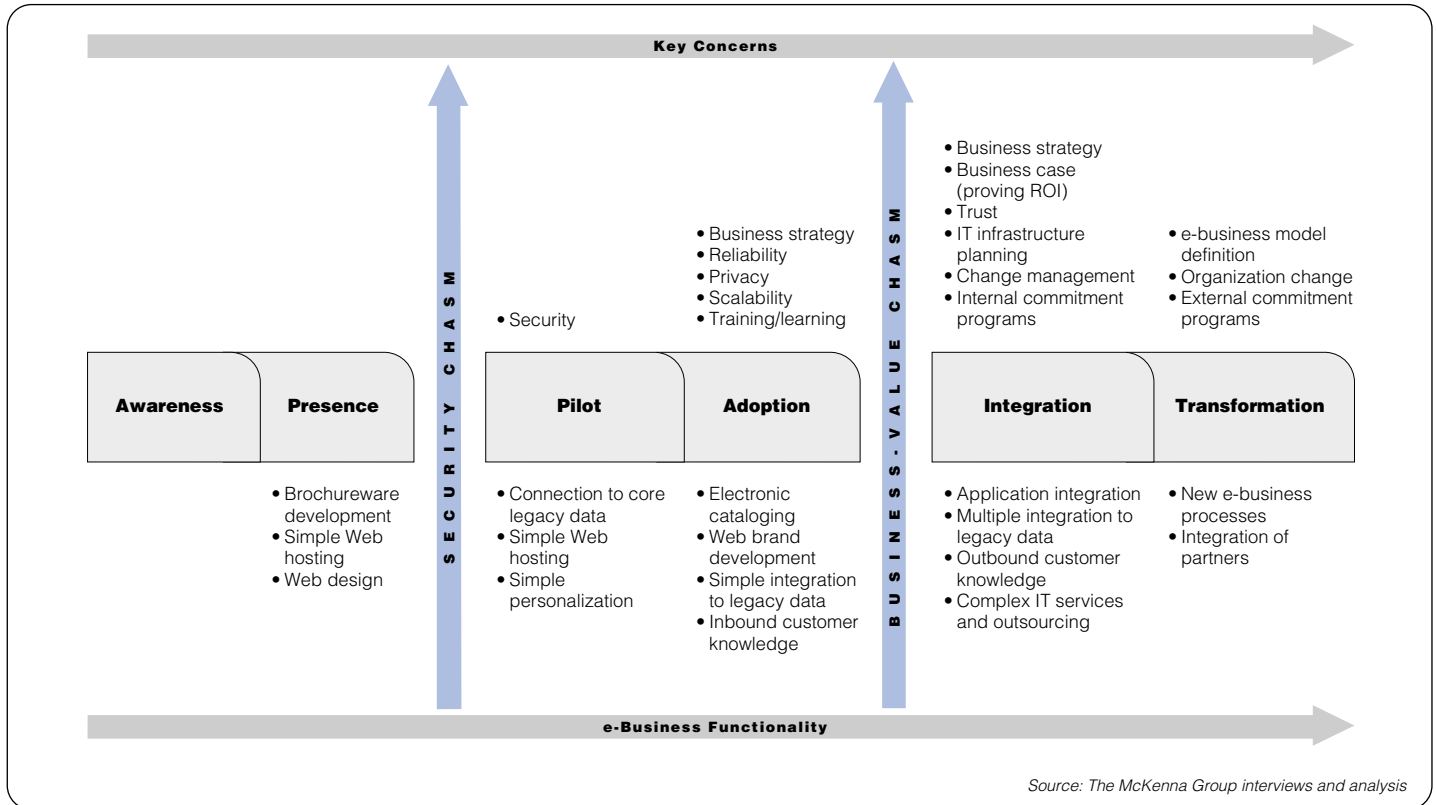


Figure 1: e-business adoption cycle

Initially, a company establishes a basic presence on the Web by publishing information. In the pilot and adoption phases, the company conducts online transactions with outside parties. Before advancing to these phases, the company must address how it will protect customer information and the security of its own environment (the “security chasm”). The big leap over the “business-value chasm” comes when the company integrates the Web with core business processes: customer relationship management, supply chain management, knowledge management and operations. At this point, management must fundamentally rethink its business strategy. In the integration phase, the company is using the Web to sell and buy, to attract and retain customers and to deliver services. The final phase is true business transformation, when the company creates a new strategic business design—an e-business model. A marked characteristic of this phase is the external extension of the company, through the formation of value nets with partners, suppliers and customers.

e-business operations models

Along with understanding your enterprise's phase in the e-business adoption cycle, it is important to look at how the enterprise, or an organization within the enterprise, wishes to operate at any given time. These models help define the IT initiatives that will be required to implement e-business goals. They are not mutually exclusive. An organization may wish to have operational excellence in one or more of these models.

Determining where e-business will take place and defining your primary e-business objective helps you select one of five e-business models.

There are two driving forces that determine the operations model a company needs to use to implement its e-business infrastructure: location of the environment and the primary e-business objective. These two factors can be clarified with the following questions:

- Is my e-business environment optimized for one or many enterprises?
- What is the business return of my e-business focus? How will I measure its success?

In some organizations, the location of the e-business environment or where the process is operated is internal to the organization. For example, business-to-consumer retailers (such as Macy's and Nordstrom) focus on selling products over the Internet to customers. In other organizations, the primary e-business objective is creating a new business by capitalizing on the potential of the Internet to provide improved efficiencies and effectiveness.

Using these two parameters—location of the e-business environment and primary e-business objective—and examining a broad cross-section of e-business implementations have led to the development of five types of operations models: e-commerce, extranet, e-process excellence, virtual community and above-the-e-line (see Figure 2). An operations model is the target environment that must be implemented to achieve your e-business goals.

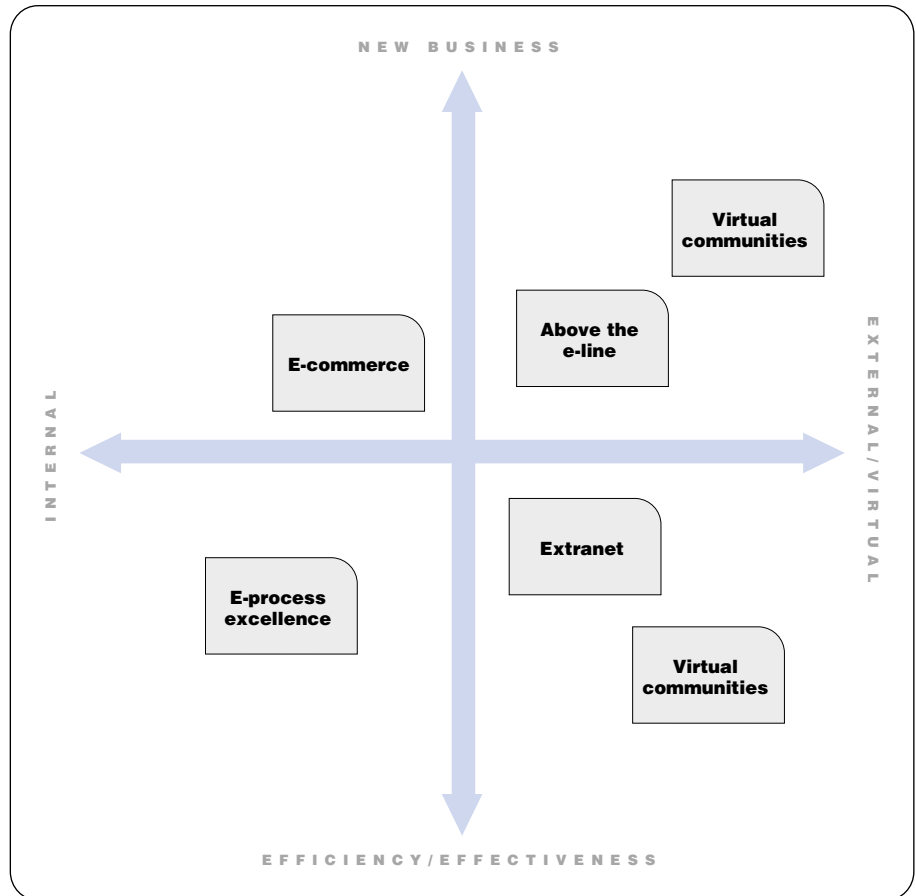


Figure 2: e-business environment (internal vs. external) vs. primary objective (new business vs. efficiency/effectiveness)

- The *e-commerce model* improves operational efficiency by providing customer relationship management (CRM) and revenue generation. It lets existing systems provide business-to-consumer interaction while delivering high performance and continuous availability capabilities.
- The *extranet model* addresses access, service delivery and trust issues. It provides supply chain management (SCM) and enterprise resource planning (ERP) services with process and linkage to a defined set of partners. It enables cost reduction through improved efficiencies, but trust and security management are essential to its success.

- The *e-process excellence model* improves access, operational efficiencies and service delivery by focusing on increased productivity and control through collaboration, stability provided by regulated flows and continuous performance management.
- The *virtual community model* implements flexible bandwidth and secure networks while enforcing realtime collaboration, shared knowledge and process, thus improving a company's access, operational efficiencies and service delivery.

Note that the virtual community model appears twice in Figure 2. They are two distinct models. The one in the right top quadrant represents companies like Wingspan.com, which is owned by Bank One and is a consortium of five different companies that have come together to provide end-to-end services, in this case banking services. The other virtual community model in the right lower quadrant represents a group of people or companies that come together to share information internally, e.g., a group of physicians sharing information on medical treatments.

- The *above-the-e-line model* enables companies to develop new products and markets, and strengthen their brand and company image. It enables high performance, guaranteed performance to consumers and financial transaction security while implementing the newest e-business models and business-to-consumer processes.

The e-commerce model

The e-commerce model provides a framework for businesses requiring a different operational model, because selling online is generally an expansion, as opposed to the sole focus, of their business. The primary motive is to increase sales and profitability by using the Internet as a new channel to sell products or services and improve customer access, service delivery and intimacy. This model is also used by those businesses that are knowledgeable and comfortable with the technology and are more aware of the potential impact the Web can have on the relationship they build with customers.

E-COMMERCE	
Value proposition	<ul style="list-style-type: none"> • Buyer facing
Organization/culture	<ul style="list-style-type: none"> • Customer focused
e-business IT focus/scope	<ul style="list-style-type: none"> • Secure financial transactions • Integration to legacy • Always open service level
Theme of process work	<ul style="list-style-type: none"> • Buying and selling • Fulfillment

A major supplier of batteries, accessories and camcorders for mobile professionals used the e-commerce model to help improve Web site performance, maintenance service, sales productivity and customer satisfaction. These improvements included more intuitive and immediate search capabilities and improved online customer service and support. The solution involved converting the existing Web site from an Oracle database to an IBM WebSphere™ Commerce Suite-based solution using IBM Net.Data® macros for SQL queries to DB2®. Since the improved site was implemented, this enterprise has extended global reach, improved customer service, improved quality and increased Web orders by 19 percent.

The extranet model

The extranet model represents companies that are ERP- or SCM-focused whose primary motive is to increase business-process efficiency and costs. These are operationally oriented businesses that want to gain competitive advantage and increased profits through improved transaction efficiency.

EXTRANET	
Value proposition	<ul style="list-style-type: none"> • Partners/supplier facing
Organization/culture	<ul style="list-style-type: none"> • Commitment or compliance
e-business IT focus/scope	<ul style="list-style-type: none"> • Contractual relationships and linkages • Dependable performance service levels
Theme of process work	<ul style="list-style-type: none"> • Cross-enterprise

An international library-supply company needed a Web presence that supported book-ordering applications, bibliography applications and DB2. Its solution involved developing and deploying a Web site using IBM WebSphere, Net.Data and DB2 in addition to server hosting on a cluster of IBM RS/6000® servers. This solution met the company’s business requirements, enhanced speed to market, extended global reach, added new revenue sources and improved customer services.

The e-process excellence model

The e-process excellence model focuses on improving the effectiveness and efficiency of an organization’s internal processes. An e-business must have processes in place to handle the increased and unexpected IT demands that result from successful Web operations.

E-PROCESS EXCELLENCE	
Value proposition	<ul style="list-style-type: none"> • Workflow and information/knowledge use
Organization/culture	<ul style="list-style-type: none"> • Consistency and continuous improvement
e-business IT focus/scope	<ul style="list-style-type: none"> • Coordination, speed and accuracy • Continuous performance • Business-process metrics dictate service level
Theme of process work	<ul style="list-style-type: none"> • Intra-enterprise • Cross-process integrity

A research-and technology-based company serving worldwide consumer and industry markets used this model to find a common, reliable way for enterprise resource planning (ERP) applications to communicate globally, internally and with suppliers and transportation companies. The solution involved the integration of the company’s ERP application, including an architecture assessment and workflow and global-transaction messaging using transaction-system products, such as MQSeries®. As a result, this company has improved business efficiency, enabled business transformation, enhanced speed to market and extended global reach. It also added new revenue sources, improved customer service and quality, as well as enabled more effective teaming and information sharing and reduced costs. The business-process cycle for applications that have become electronic has been reduced dramatically.

The virtual community model

The virtual community model is built upon the desire to build new business and increase efficiency and productivity by linking business processes directly with suppliers and business partners. It operates on an integrated network that includes not only supplier and business partners but also highly skilled employees, distributors, retailers and even consumers. This integrated network creates an inseparable link of collaboration between the different elements of this new extended organization.

VIRTUAL COMMUNITY	
Value proposition	<ul style="list-style-type: none"> • Realtime collaboration
Organization/culture	<ul style="list-style-type: none"> • Coordination and agreement
e-business IT focus/scope	<ul style="list-style-type: none"> • Expandable to meet community needs • Flexible bandwidths • Mutual service levels defined by community
Theme of process work	<ul style="list-style-type: none"> • Interenterprise

A European insurance market network, representing major national brokers and more than 3,000 underwriters, processes more than 28 million transactions per year. Company executives were concerned about cost inefficiencies, redundancies, speed to market and service quality. Following the virtual community model, this network was able to provide services to build an electronic marketplace, shared applications, e-mail messaging services, EDI services over information exchange, and network services, including leased line and dial service. These initiatives improved business efficiency, enabled business transformation, enhanced speed to market and extended global reach. In addition, this network added new revenue sources, improved customer service and improved quality, while enabling more effective teaming and information sharing and reducing costs.

The above-the-e-line model

The above-the-e-line model represents the following types of businesses:

- Those that are built from scratch to take advantage of the Internet for peak performance in interenterprise operational efficiencies and effectiveness.
- Those that aggressively pursue a strategy to transform their business or a portion of their business to above the e-line.

ABOVE THE E-LINE	
Value proposition	<ul style="list-style-type: none"> • Web is foundation of total business design
Organization/culture	<ul style="list-style-type: none"> • Rapid adaptability
e-business IT focus/scope	<ul style="list-style-type: none"> • Little/no legacy • High, continuous performance service level
Theme of process work	<ul style="list-style-type: none"> • Full value chain

A new online bookstore with more than ten million printed books, audio books, CDs, cassettes and videos needed a Web site for e-commerce. The above-the-e-line model helped to develop and deploy the Web site in less than nine months, using IBM WebSphere, Net.Data and DB2 in addition to server hosting on a cluster of IBM RS/6000 servers. This model enabled this company to transform its business, enhancing speed to market, extending global reach, adding new revenue sources and improving customer service.

Highlights

A successful e-business implementation requires that planning, integration and management services all be in place.

Mapping IT initiatives to operations models

If your organization has or is contemplating implementation of multiple e-business initiatives, then you need to have IT services under way in each of the areas shown in Figure 3. Your operations model selection and a review of your current IT-enabling investments and capabilities provide direction as to which specific service-area items to focus on immediately and which ones to make a part of your long-term plan. A multiyear plan with a balanced portfolio of services across service areas can help you in implementing successful e-business initiatives.

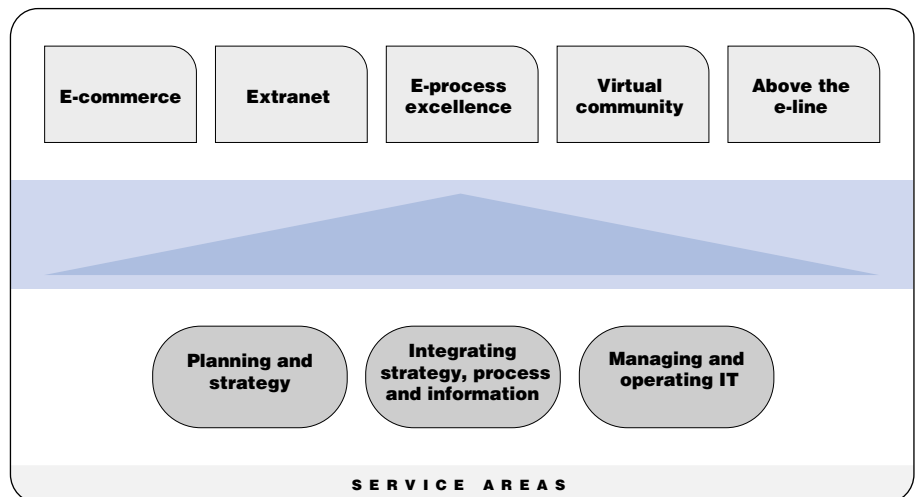


Figure 3: Mapping operations models to services areas

Planning and strategy helps you define, implement and manage changes to your organizations, process and systems as your company transitions into an e-business. Key service areas include:

- Planning for infrastructure change management
- Planning for availability
- Providing accelerated successful implementation
- Developing IT management systems
- Providing organization capacity planning and design
- Planning and designing e-business infrastructure strategy and architecture.

Integrating strategy, process and information helps you plan and implement e-business infrastructures when enterprise processes and knowledge management are integrated or coordinated with systems and networks. Key services include:

- Integrating strategic enterprisewide applications, such as CRM, SCM and ERP
- Providing knowledge management and collaborative services to leverage corporate and external data
- Providing solutions to deliver end-user self-service
- Providing application services that are industry-oriented, business-application-based and mass customizable.

Managing and operating IT helps business units optimize the performance of their e-business resources. Key services include:

- Coordinating the activities of IT and business teams and integrating or coordinating processes and e-business systems and networks
- Designing and optimizing Web infrastructure to improve business performance
- Providing the service-delivery infrastructure to support production and assist in making decisions about outsourcing.

This area also includes expert sense-and-respond activities to identify IT capacity, resource or support conditions in advance of failure, allowing for just-in-time solutions, provided electronically. Key services include remote performance assessments and monitoring, capacity on demand to establish infrastructure capabilities and load structure, and emergency capacity (server, network, disk) on demand in response to trigger events.

Success factors

Based on our experience with numerous e-businesses, we believe that success stems from meeting a stringent set of requirements from a demanding customer. We recommend that you:

- Realize that the shift to a universal infrastructure, “the Net,” sets the stage for the disruption of the flow of traditional goods and services.
- Use e-business operations models to share a business context and supporting logical view. You can use these models to prescribe the major components of an architecture and the associated characteristics and impact of differing workloads.

Highlights

- Use a layered architecture to encapsulate and isolate the location of functions, introducing middleware as the design point for application and content development.
- Plan for and build in Web scalability (which requires strong collaboration of content designers and experts). Best practices suggest a mixture of techniques to increase power and improve efficiencies of workload.
- Monitor all aspects of your end-to-end solution, gathering data (for example, Web and system logs) to build a baseline of performance from which to improve.
- Be aware that traditional systems management principles are more relevant than ever. However, availability and performance are measured from the only perspective that matters—your customer’s.
- Build in both high availability and continuous availability. They are not the same thing; hardware and software fault tolerance can take you only so far.

To help you get started, the following checklist of tasks will guide your business approach to achieving your e-business goals. Getting started requires assessing your current situation and then assembling the various options to meet your needs.

Use this checklist to begin defining your e-business

1.	Inventory your ongoing and planned e-business initiatives and understand your business goals and expectations.
2.	Understand how e-business investments are currently being managed and how investments in IT projects are being represented.
3.	Identify the executive sponsors that are supporting e-business-enablement investments.
4.	Plot your initiatives against the operational models (see page 17) to understand where IT can provide value toward achieving your business goals.
5.	Determine the business areas of focus. For example, find a business unit where you have solid sponsorship or that represents 80 percent of future business initiatives. Leverage a core competency that can be used across multiple projects.
6.	Prioritize and plan e-business initiatives according to their business impact as well as identify any dependencies and linkages between them.
7.	Select a dominant initiative that combines the value that IT delivers with e-business initiatives and sets the stage for portfolio management of IT investments that will fund future e-business ventures.
8.	Map current and existing IT initiatives to the three service areas to ensure that your approach is comprehensive. (See page 17.)
9.	Fill in the gaps to build the plan and its supporting business case.

Summary

Enterprises worldwide are trying to determine how to identify and optimize the real value of e-business. As a CIO or operations executive responsible for delivering the full power of e-business to your enterprise, you need to provide the infrastructure capabilities fundamental to e-business operations. Through the use of the operations models described in this paper, you can create a common vision of how you wish to operate, regardless of your e-business readiness. From this starting point you can direct your IT actions and investments toward establishing a solid IT foundation that enables the e-business vision to become a reality.

For more information

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