Benchmarking Partners

Driving Business Value Through E-Collaboration

Lotus

About Benchmarking Partners

Benchmarking Partners is the leading e-business strategy transformation firm dedicated to helping companies leverage new business models for the business-to-business (B2B) space. Since 1994, Benchmarking Partners has been the CEO team's partner focused on reinventing the B2B environment for the net economy. As the first B2B Internet services firm, we are committed to accelerating the benefits from demand/supply chain and e-business initiatives. Through our Internet-based consulting model, we help companies surpass their competition, by rapidly internalizing constant transformations that define and strengthen their core competencies.

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INTRODUCTION

E-business holds both the allure of new horizons and the difficulty of complex navigation. Traditional supply chains and trading partner relationships are exploding into intricate and dynamic virtual networks of trading partners and service providers. E-collaboration is one component of e-business that can drive significant value in trading partner networks through increased revenue and decreased costs.

The question facing business executives today is not if they should join these new electronic networks, but how. What are the opportunities? The challenges? How do companies effectively collaborate with their trading partners to achieve lasting value?

THE E-COLLABORATION OPPORTUNITY

Creating e-business processes with trading partners involves complex business strategy and technology decisions. However, the need for business executives to navigate through complex business initiatives is not a new phenomenon. Corporate leaders grappled with reengineering, downsizing, and outsourcing in the 1980s, and they have been confronted with choices about client/server technology, ERP systems, and Y2K compliance in the 1990s. What makes the issue of e-business different from traditional business issues is the public nature of the decision, the direct effect it has on trading partners, and the potential magnitude of the returns.

The successes or failures in creating an e-business channel with trading partners or the end consumer is a public affair. When e-business channels for placing online customer orders, trades, or bids fail, the news makes the main pages of consumer and trade journals. While the outcomes of other business initiatives, such as ERP implementations, may be publicly reported, the daily trials are not chronicled in the press. If an online retailer is unable to take orders for an hour, its end customers immediately know its failings. If a "bricks and mortar" company's ERP system fails for an hour, the impact may be significant, but much less public.

E-business decisions, such as engaging in e-collaboration, profoundly affect trading partner relationships. Interenterprise initiatives are more challenging to execute than enterprise initiatives because of the need to coordinate and integrate a wide array of trading partners, processes, and systems across the value chain.

While the complexity of e-business initiatives is greater than that of traditional business initiatives, the potential magnitude of the returns is also more profound. Savings from e-collaboration are conservatively estimated to reach $1.6 trillion globally from 1998 through 2002.[1] Clearly, the potential for financial returns for individual companies is significant, but additional strategic benefits are as compelling. These include the opportunity to better align internal processes to leverage the Internet, improve relationships with customers and suppliers, or redefine core products or service offerings.

E-collaboration benefit opportunities outpace those of internal initiatives in part because approximately 60% of a typical company's variable costs, and 100% of its revenue, come from outside the enterprise.[2] This means that in order to develop strategies to increase revenue and/or decrease costs, companies must look outside their four walls for opportunities to communicate and collaborate with trading partners to achieve substantial value realization.

[1] Cumulative figure includes only operations savings and does not include gains from increased revenue. Benchmarking Partners, 1998.

[2] Benchmarking Partners, 1998.

DRIVING BUSINESS VALUE THROUGH E-COLLABORATION

THE E-COLLABORATION OPPORTUNITY

WHAT IS E-COLLABORATION?

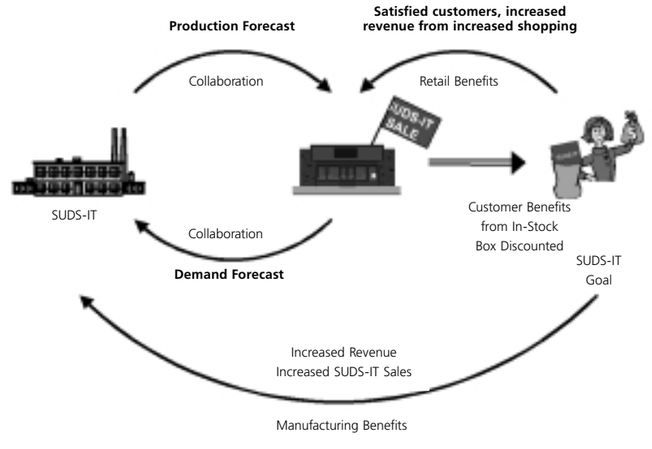
E-collaboration is one component of e-business that offers corporations, particularly traditional brick and mortar companies, the opportunity for capturing the promise of Internet technology. E-collaboration uses the Internet to coordinate and align the efforts of two or more companies so that they act like one. E-collaboration takes the business principles of collaboration and applies them to the world of e-business.

To understand e-collaboration, it is important to first understand the underlying business principle of collaboration. Collaboration is closed-loop, shared decision making between trading partners that is focused on the end consumer. Trading partners make many daily decisions, such as the quantity and assortment of orders, delivery dates, product design, and promotions. Making these decisions collaboratively, with a focus on end-customer benefit, ensures that both parties will realize value from the decision. For example, a retail store is planning a promotion on Suds-It laundry detergent. If the store collaborates with the Suds-It manufacturer on the quantity of detergent to be ordered and the timing of the promotion, the goal should be the right amount of Suds-It on the shelf for consumers who want it—at a lower price. By collaborating on forecasting and demand, the retailer and the manufacturer mutually benefit from increased sales and from satisfying these sales at the lowest cost. (See Figure 1.)

FIGURE 1

E-COLLABORATION FOCUSED ON CONSUMER BENEFIT DRIVES VALUE FOR BOTH THE RETAILER AND THE MANUFACTURER.

VALUE OF COLLABORATION



Closed-loop decision making ensures that both parties agree on the decision and have communicated their agreement and commitments to each other. The time window in which the shared decision making should occur is also critical and must be long enough to modify the decision as required. In the Suds-It promotion example, the time window should be long enough to allow the retail store to change its planned promotion date if the manufacturer is unable to produce enough Suds-It to meet the increased demand of the targeted promotion. If the Suds-It promotion ads are distributed before a shared decision has been reached, or if either party does not have adequate time to modify its decision (for the retailer to postpone its promotion, or for the manufacturer to increase its production schedule), then both the retailer and the manufacturer lose an opportunity to increase their sales and satisfy the customer.

Trading partner collaboration begins with a foundation of shared common goals and objectives, as well as communication that may already exist in the current trading partner relationships or may be created as a precursor to collaboration. Many companies currently use electronic data interchange (EDI) to communicate with trading partners on orders. With the use of the EDI advance ship notice (ASN), EDI provides a form of closed loop communication. The use of EDI establishes a business process foundation for collaboration.

Many companies are also building tools to enable trading partners, primarily suppliers, to view inventory or customer sales data via the Internet. Such visibility provides an excellent technical foundation for e-collaboration.

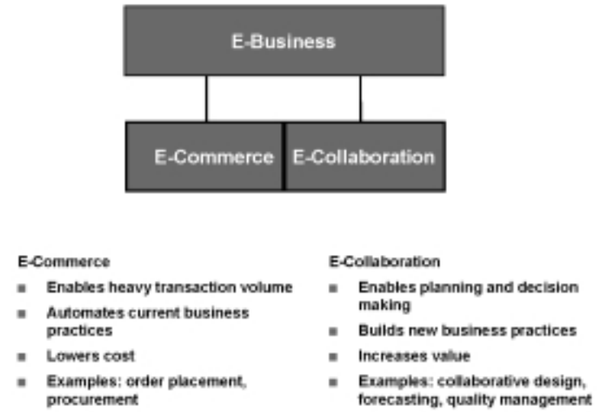
Collaboration also requires human relationships between trading partners that are built on trust and communication and require a dramatic change in traditional ideas about competition and confidentiality. Although collaboration requires a change in mindset from fiercely protecting information from other companies to sharing information with trading partners, the benefits to be realized from collaboration are compelling enough to drive this transformation. If two trading partners have developed solid communication channels, they likely have experience in working out collaborative decisions, such as promotion planning, through telephone calls. Existing personal communication ties also enable building collaborative processes.

IS E-COMMERCE DIFFERENT FROM E-COLLABORATION?

How does e-commerce fit into the framework of e-business and e-collaboration? The terms "e-commerce," "e-collaboration," and "e-business" are often used synonymously; however, e-business can be considered an umbrella term for all electronic business, including both e-commerce and e-collaboration. (See Figure 2.)

FIGURE 2

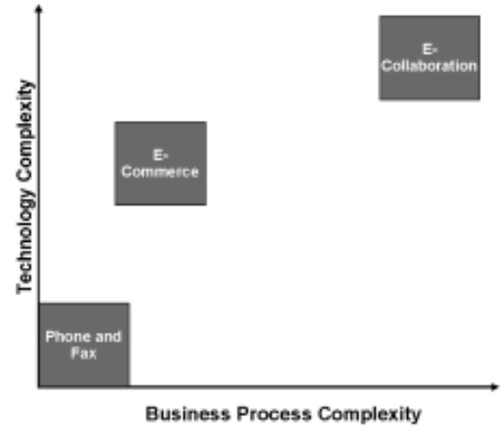
E-BUSINESS ENCOMPASSES E-COMMERCE AND E-COLLABORATION ACTIVITIES.



E-collaboration involves major changes in business processes to create shared interenterprise decision making, while e-commerce utilizes the technology of the Internet to automate existing processes. (See Figure 3.)

FIGURE 3

E-COMMERCE REPRESENTS A SIGNIFICANT ADVANCE IN TECHNOLOGY TO AUTOMATE EXISTING BUSINESS PROCESSES; E-COLLABORATION IS A FURTHER ADVANCE IN TECHNOLOGY, BUT A NOTABLY GREATER CHANGE IN BUSINESS PROCESS.



In e-commerce, the trading partners make decisions independently and automate the existing transactional channels and processes with the goal of decreasing costs. Examples of e-commerce include a retail store ordering product from a supplier over the Internet or a customer sending funds to a supplier over the Internet. In some cases, a process might migrate from e-commerce to e-collaboration. However, other processes are more conducive to one type of electronic transaction than the other. Processes that involve planning, such as forecasting or promotions, should be based on e-collaboration. Processes that are execution-based, and do not involve planning, can be considered e-commerce.

E-COLLABORATION PROCESSES

E-collaboration can occur in numerous business processes, both within and beyond the enterprise. The table below highlights eight key interenterprise collaborative business processes and their associated value.

VALUE

At the highest level, the value from e-collaboration initiatives will be to increase revenue, increase shareholder value, decrease costs, and achieve competitive advantage. These benefits vary by business process and are examined in further detail in Table 1.

TABLE 1

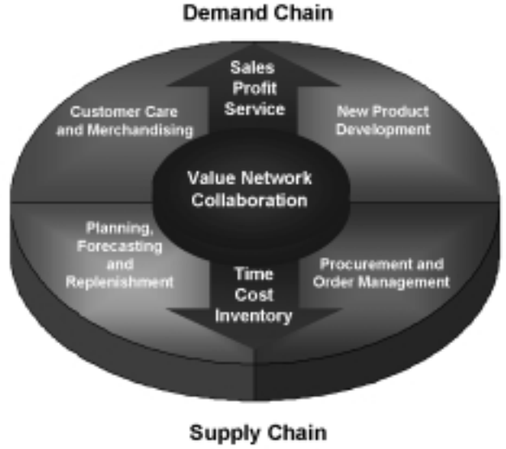
VALUE FROM E-COLLABORATION PROCESSES

INTERENTERPRISE BUSINESS PROCESS	VALUE
Design and Product Development	• Competitive advantage through faster time-to-market • Reduced R&D expenses • Lower unit costs
Order Management	• Competitive advantage and increased revenue through reduced stock-outs • Lower costs through reduced inventory
Distribution	• Lower costs through optimized shipping and fulfillment execution
Planning, Forecasting, and Replenishment	• Competitive advantage and increased revenue through reduced stock-outs and the ability to quickly respond to changing customer demand • Lower costs through reduced inventory • Lower costs through reduced return rates
Sourcing	• Competitive advantage and increased revenue through faster product introductions • Competitive advantage, increased revenue, and decreased costs through higher quality
Quality	• Decreased costs through reduced design and manufacturing expenses • Competitive advantage and increased revenue through increased customer satisfaction and reduced returns
Customer Relationship Management	• Increased revenue through improved customer segmenting and targeting • Competitive advantage and increased revenue through improved customer service • Decreased costs through efficient sales force automation
Financing	• Increased sales through collaboration on managing working capital constraints
Merchandising/Category Management	• Competitive advantage and increased revenue through the proper product assortment, pricing strategies, promotional strategies, and shelf placement

E-collaboration processes and value can be examined inside a value network framework as shown in Figure 4. The framework is divided into two main parts—a corporation's demand chain and its supply chain. The demand chain collaborative processes will primarily drive value through increased sales, profit, and service, whereas the supply chain collaborative processes will primarily drive value through reductions in time, cost, and inventory.

FIGURE 4

E-COLLABORATION DRIVES INCREASED SALES, PROFIT, AND SERVICE THROUGH THE DEMAND CHAIN AND REDUCED TIME, COSTS, AND INVENTORY THROUGH THE SUPPLY CHAIN.



NEW TRADING PARTNER RELATIONSHIPS

The use of e-collaboration also enables companies to redefine and improve their trading partner relationships with both customers and suppliers.

NEW CUSTOMER RELATIONSHIPS

As companies build e-collaboration processes with their customers, they are able to redefine and build more intimate customer relationships with their trading partners.

For example, companies that create collaborative customer relationships around order management and planning and forecasting will see their customers benefit from a decrease in out-of-stock orders and a faster response to changing demand. For companies that collaborate on merchandising activities, their customers will have more successful promotions and sales. Using e-collaboration to enable a customer's success helps to ensure a loyal customer base.

NEW SUPPLIER RELATIONSHIPS

Inventory management is one area in which companies are building important communication channels with their suppliers—providing visibility for suppliers into on-hand inventory at their site, order status, or even the forecasted consumer demand. Such open visibility and communication lay the foundation, from both a technology and a business process perspective, to build collaborative relationships for mutual advantage.

E-collaboration relationships can also be seen with companies that jointly develop products with suppliers or jointly develop demand forecasts and production plans. This type of company is able to better satisfy its end customer with faster product development and successful customer order fulfillment.

VALUE NETWORKS

E-collaboration uses the Internet to tightly align trading partner decision making. The term "value network" is often used to describe the complexity of these trading relationships, rather than supply or demand chain, which are more linear descriptions. E-collaboration initiatives can occur between two or more trading partners within a value network.

VALUE NETWORK MODEL

The connections between companies with the e-business environment result in horizontal rather than vertical alignment of trading partners within value networks. In Figure 5 below, the connections between two manufacturers and two retailers are shown. Each company model is represented as a Customer Oriented Management System (COMS) model, showing the internal processes of each business working together as an organic process, not as individual stovepipe functions. Each company's focus is on satisfying its customer, as represented by the customer orb in the center of each COMS model. The interenterprise process links are shown between the sales and marketing process of the manufacturers and the procurement processes of the retailers.

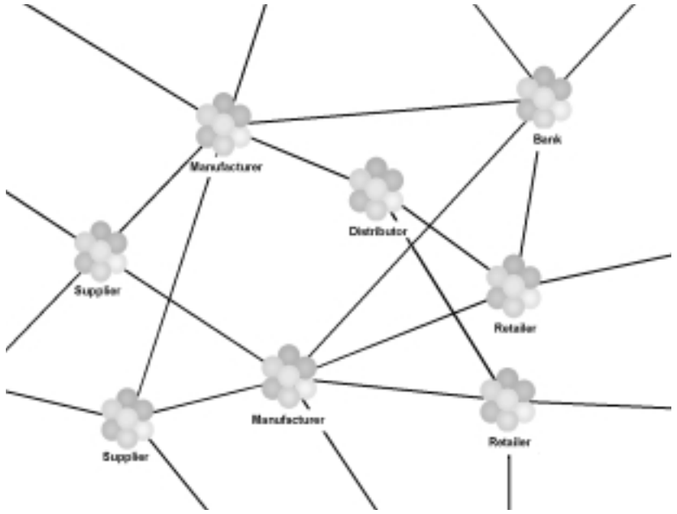
FIGURE 5

MANUFACTURERS' SALES AND MARKETING PROCESSES ARE CONNECTED WITH THE RETAILERS' PROCUREMENT PROCESSES TO FORM A VALUE NETWORK.

Figure 6 below takes a wider view of the interenterprise links and shows the formation of the larger value network enabled by e-business. In this example, one manufacturer uses a distributor to ship product, a bank is used for electronic funds transfer (EFT), and the manufacturer's suppliers are diagrammed as well. In actuality, the value networks are much more complex, with a vast array of trading partners and interenterprise links in each network. In addition, the complexity increases with e-business as companies become more virtually integrated, outsourcing functions from marketing to manufacturing.

FIGURE 6

E-BUSINESS INCREASES THE COMPLEXITY OF VALUE NETWORKS BY ENABLING VIRTUAL INTEGRATION OF OUTSOURCED FUNCTIONS.



VIRTUAL INTEGRATION VS. VERTICAL INTEGRATION

One of the most interesting aspects of the e-business model transformation is the speed at which companies are focusing on core competencies and outsourcing non-core functions to other service providers in the value network. Companies have always focused on their core competencies to provide business focus and direction, establish priorities, and develop alternate sources of revenue by offering these competencies into new business channels. However, the evolution to core competencies has accelerated, as Internet technology makes possible the formation of virtual relationships. With virtual relationships, companies can more easily outsource their non-core functions and still operate as one company, by integrating the outsourced functions into their organization. For example, companies that are superior in branding and selling over manufacturing production could look to transform their business model to sourcing and selling components rather than manufacturing and selling. Many companies have moved towards this model and are becoming virtually integrated in their value chain, rather than vertically integrated.

Not only are traditional companies moving to core competencies, but new, often virtual "dot-com" companies that offer just one core competency to the marketplace are rapidly emerging. These companies often drive innovation in their industry value chain, disrupting the existing trading partner network and accelerating change in the traditional brick and mortar companies. Examples have been seen in the emergence of dot-com companies that source and sell everything from cars to electricity, travel services to employee placement.

The result is very nimble companies that have an advantage in times of rapid change. For example, if a company sources but does not manufacture a product, it can change its suppliers almost instantly. This allows a company to respond to change in market demand and respond to rapid product lifecycles. However, the ability to quickly change trading partners also forces companies to be more innovative in forming new services that maintain their trading partner relationships. Collaborative trading partner relationships provide communication, openness, transparency, and trust. It is this understanding in collaborative relationships that becomes the switching barrier for companies to maintain a loyal customer base.

ADDITIONAL SERVICE OFFERINGS

While companies are limiting activities to core competencies, they are at the same time offering additional services to their trading partners. This may seem a paradox of both streamlining and expanding; however, it actually reinforces the development of the virtual value chains that make up the networked economy. Companies are rapidly offering their customers services such as the ability to chat with their peers (other customers) or links to other services. A retail store that sells construction supplies to do-it-yourself customers, for example, might also offer a portal on its Web site to link customers to electricians and plumbers if they need professional assistance with their projects. These links provide a total solution to the customer need, while allowing the corporation to focus on offerings from its core competencies.

RECOMMENDATIONS

The key questions from business leaders regarding e-business initiatives are related to development and execution. Recommendations for developing and executing business initiatives are outlined in this section.

BUILD AN ELECTRONIC BUSINESS INFORMATION ARCHITECTURE STRATEGY

It is important for a company to build a strategy to develop and execute e-business initiatives that integrate both its corporate goals and information architecture—an electronic business information architecture strategy (e-BIAS). Traditionally, corporate strategy was defined, and then technology was selected. In today's world, technology innovations can enable completely new corporate processes and often pull business strategy development. The ability of technology to create fundamentally new business models by tightly integrating organizational process and technology development must be considered in the initial strategy formation. A company's e-BIAS is not a technology architecture, nor is it a business model; it is the dynamic intersection of both systems and processes. This approach enables corporations to become integral components of their customer and supplier core strategies and successes, thereby increasing value penetration and reducing the risk of competition based solely on product and service price rather than total value.

BUSINESS STRATEGY

Key questions to answer in forming an e-BIAS are both business- and information-based. Critical business strategy questions are: What are the corporation's current core competencies? How do the current core competencies align with the needs of customers and the corporate objectives? What are the opportunities for new product or service lines? What are the opportunities for new business channels? Where are the opportunities for cost reduction? What relationships exist in the value network? How can existing relationships be most effectively leveraged? What new partnerships should be formed? Where will the most value be realized?

TECHNOLOGY STRATEGY

Critical technology strategy questions are: How should operational data be shared and controlled? How do e-business initiatives leverage data in ERP and other back-end systems? How does the information flow through the company, from supplier through to the customer? How will this information flow impact current and future relationships with trading partners? What technology choices will provide the best return on investment? What new business processes can be created by leveraging technology?

Another key to success in forming an e-business strategy is to enlist and secure executive sponsorship. Executive sponsorship is required to drive change, to get buy-in, and to have a broad vision. Building a strategy for information flows should be as important as flows of resources, product, and money—and should be driven from the top.

E-COLLABORATION TECHNOLOGY SELECTION CRITERIA

To support e-collaboration initiatives, it is important to select the appropriate technology to enable success. For e-collaboration initiatives, key criteria used in selecting appropriate technology include:

- **Scalability:** e-business activities with trading partners typically require greater scalability than do enterprise activities-especially activities that will scale to support the end consumer. A company that accommodates thousands of users in the enterprise environment may find itself supporting millions of users in an e-business environment.
- **Open platform:** to support multiple trading partners. Most e-collaboration that exists outside an enterprise must accommodate a diverse technology landscape. Maintaining "open" systems increases the option to integrate new partners into the e-collaboration environment.
- **Knowledge management:** to support a wide range of collaborative processes and decision making.
- **Internet-based:** to facilitate connectivity and user interaction.
- **Support for mobile users:** especially important for applications that support a virtual workforce, such as sales force automation and product configuration.
- **Workflow:** to support information flow and control trading partner processes and integration.
- **Robust security:** to support protection of highly proprietary corporate data that often transits e-collaboration systems.
- **Integration:** the e-collaboration technology should have integration capability to ERP and other back-end systems to enable integrated decision making and fulfillment, business processes, and data accuracy.

AN EVOLUTIONARY APPROACH

E-collaboration initiatives should be developed in the context of a company's evolving business and information strategy. Companies should create pilot programs with trading partners and establish a strategy foundation before developing widespread, enterprise wide e-business initiatives. E-business strategies will vary from company to company. Listed below are typical

stages in the evolutionary path of companies developing e-business initiatives. These stages are not sequential, nor do all companies implement all of the activities below. The key is to select the strategies and activities that best support the strategic goals of the company.

- **Presentation:** In this first stage, companies build a corporate Web site to present information to suppliers and customers. This type of static Web site, sometimes referred to as "brochureware," is essentially a repository of corporate and product information. This initial capability is typically built as a separate system and later integrated with back-end systems for automatic data updates of items such as pricing and product information.
- **Communication:** In this stage, Web site content is tailored specifically to the trading partner. Examples include enabling suppliers to view inventory on hand, or enabling customers to view order status information. Companies communicate specific, valuable information to their trading partners to strengthen their relationships with the corporation and to lower costs.
- **Interaction:** With interaction, trading partners can provide information back to the company by connecting directly to its system(s) via the Internet. Examples of interaction include customers placing orders online and suppliers submitting bids online.
- **Fulfillment:** With fulfillment, the company links trading partner interactions with its back-end fulfillment systems.
- **Collaboration:** In collaboration, trading partners are able to participate in decisions as if they were members of a virtual corporation, having the flexibility to view and make use of each other's systems and information dynamically instead of based on historical patterns. This significantly improves the accuracy and timeliness of decisions including forecasting, category management, and product design, thereby driving business value.

LEARN FROM OTHERS

Companies embarking on e-collaboration initiatives should learn from the experience of other companies that have built or are building similar capabilities, both inside and outside the specific industry. Within an industry, it is important to engage both suppliers and customers in defining the requirements for e-collaboration activities. Companies should understand the processes and business requirements of their customers and suppliers and build a foundation of trust. Learning can also come from outside a particular industry. This outside perspective can supply sources of innovation from "outside-the-box" thinking, as well as an opportunity to actively share information in non-competitive situations. Industry best practices, benchmarks, and standards should also be understood and leveraged to guide the development of e-collaboration initiatives and limit risk.

LOTUS TECHNOLOGIES

Historically, the business focus of Lotus Development has been to provide innovative products and services that enable new modes of communication and collaboration within and beyond the enterprise. Following are descriptions of Lotus® products, which describe the role(s) each product can play in the implementation of e-collaboration business models.

E-COLLABORATION SOLUTIONS

PERSONAL PORTAL

A focal point for accessing, integrating and managing information across intranets and the Internet. Offerings in this category include the Lotus Notes® Release 5 Client.

TEAM COLLABORATION

Products that facilitate ad hoc, informal, "water-cooler" type exchanges of knowledge. Commonly termed "teamware," these products focus on supporting quick decisions. Offerings include Lotus Sametime™, Lotus QuickPlace™ and Lotus Messaging.

INTERACTIVE LEARNING

Products that enable organizations to deliver learning precisely when it is needed, via the optimal choice of methods. Offerings in this category include Lotus LearningSpace®, Macromedia Pathware and Lotus Sametime.

BUSINESS INTELLIGENCE

Products that maximize an organization's collective brainpower. Offerings in this category include Lotus Domino.Doc™, Domino Workflow and Domino Extended Search™.

ENTERPRISE INTEGRATION

Products that bring together data from multiple sources and formats. Offerings in this category include Domino Connectors, Domino Enterprise Connection Services, Lotus Enterprise Integrator, LotusScript® Extensions for Lotus Connectors, Java Classes for Lotus Connectors and Enterprise Solution Builder.

EXTENDED COMMUNITIES

Products that enable organizations to develop and deliver e-collaboration applications. Offerings in this category include the Lotus Domino™ Release 5 Server, Domino Designer, Lotus QuickPlace, Lotus Messaging and Lotus application development tools (Domino Connectors, Lotus Enterprise Integrator, Enterprise Solution Builder, etc.).

LOTUS PRODUCTS

LOTUS NOTES RELEASE 5

Lotus Notes Release 5 combines the familiar look-and-feel of Web browsers and Internet mail clients with tools for information management and e-collaboration that these single-purpose applications lack. Notes enables users to manage their key personal information via a single, customized interface, which provides:

- A "universal in-box" for e-mail from all sources.
- Access to the Web, newsgroups, intranet/Knowledge Management portals and other e-collaboration applications.
- Integrated tools to manage appointments, group scheduling, contacts and to-dos.
- A wide range of options for mobile access to both mail and applications.
- Full-fidelity access to e-collaboration applications and data while disconnected from the network.

Currently the world's most popular client for e-mail and e-collaboration, Lotus Notes Release 5 enables each user to create a personalized "digital dashboard" that simplifies everyday, Web-based activities.

LOTUS SAMETIME

Sametime enables spontaneous, real-time collaboration among LAN-connected teams by keeping team members aware of who is online; and by providing "instant messaging." As a tool for interactive learning, Sametime allows distributed users to simultaneously view and discuss data and applications online via an electronic white board.

LOTUS QUICKPLACE

QuickPlace enables end users to rapidly create secure, shared workspaces on either side of the corporate firewall, without the need for programming skills or other technical training. Any authorized user with a Web browser can access the collaborative workspace. QuickPlaces can feature discussions, document libraries, custom workflow, an index to its contents, and virtually any form of rich content, including HTML files. With a wide range of customization options, QuickPlaces are hosted by ISPs as well as deployed by teams.

As a tool for team collaboration, QuickPlace leverages Web standards to make it easy for business people to jointly organize, manage and control access to the data, documents and schedules required for a specific project or initiative; i.e., rolling out a new product. QuickPlace can also facilitate the building of extended communities, by eliminating the potential barriers of time, distance, training requirements, LAN access capability and availability of desktop software.

DRIVING BUSINESS VALUE THROUGH E-COLLABORATION

LOTUS PRODUCTS

LOTUS MESSAGING

Built on Domino Server technology, Lotus Messaging provides a standards-based, integrated foundation for e-mail, calendaring and scheduling, real-time collaboration, bulletin boards, ad hoc workflow, directory services and anytime/anywhere messaging for mobile users. These core services can be customized and extended as business requirements dictate; in particular, to embrace the full spectrum of e-collaboration applications. A Lotus Messaging infrastructure lays the groundwork for robust e-collaboration solutions, particularly in the areas of Team Collaboration and Extended Communities.

LOTUS LEARNINGSPACE

LearningSpace is the first "complete" interactive learning platform. That is, it is the only solution to successfully integrate all three distributed learning modalities (live, virtual classrooms; self-paced content delivery; and anytime/anywhere collaboration) in a single environment. Any form of content, from HTML pages to streaming video, can be incorporated into the LearningSpace framework.

MACROMEDIA PATHWARE

Pathware is a learning management system, which enables organizations to manage all aspects interactive, self-directed online learning programs, from planning the curriculum to reporting student progress across individual courses. Pathware fully supports the AICC (Aviation Industry Computer-based Training Committee) standard; so any AICC compliant courseware can be integrated into Pathware-based solutions.

LOTUS DOMINO.DOC

Lotus Domino.Doc manages documents throughout their life cycle - from authoring through review, approval, distribution and archiving. It is designed to manage all forms of business intelligence as embodied in documents, to be deployed to enterprise-wide, and to be integrated with other Domino-based applications for e-collaboration and Knowledge Management.

DOMINO WORKFLOW

Domino Workflow is a state-of-the-art workflow modeling product, which complements and extends the ad hoc workflow capabilities built into Lotus Domino. It allows organizations to rapidly develop reusable, extensible workflow applications. The role of Domino Workflow in e-collaboration is to enhance the efficiency with which business intelligence is distributed.

DOMINO EXTENDED SEARCH

Domino Extended Search addresses the universal need to effectively search heterogeneous data repositories and retrieve relevant business intelligence. With Domino Extended Search, a user can utilize a Web browser or Lotus Notes client to search all accessible data, whether structured or unstructured, local or remote. It searches across server platforms, both within and outside the Domino environment, in-house, on the Web and in external repositories such as third-party content services. No central index of the data to be searched is required.

DOMINO CONNECTORS

Domino Connectors provide native connectivity between Domino-based applications and a comprehensive set of enterprise data sources, including leading RDBMS, ERP and transactional systems. Organizations can utilize their choice of Lotus enterprise integration tools to manage access to enterprise data via one or more Connectors. All Domino Connectors are implemented using a common object model, so a single syntax set works for every Connector. The Domino Connector Toolkit enables third parties to create Domino Connectors for any data source.

DOMINO ENTERPRISE CONNECTION SERVICES

Included with the Domino Server, Domino Enterprise Connection Services (DECS) provides real-time connectivity between Domino and any enterprise data store supported by a Domino Connector. DECS enables users and applications to exchange data with external sources as if it were native to Domino, without the need to move or duplicate data. To support rapid development of e-collaboration applications, DECS connections are established without programming, via a wizard-based interface.

LOTUS ENTERPRISE INTEGRATOR

Lotus Enterprise Integrator (LEI) is a server-based tool that provides, high-performance, high-volume data transfer and synchronization between Domino and enterprise data stores supported by Domino Connectors. LEI operations can be scheduled or event-driven. LEI includes templates for sophisticated data transfer without programming. It also supports programmatically driven data transfer using Java or LotusScript.

LOTUSSCRIPT EXTENSION FOR LOTUS CONNECTORS

The LotusScript Extension for Lotus Connectors (LC LSX) extends the use of Domino Connectors to LotusScript. The programming model is independent of individual connectors, yet provides access to system-specific features. Through the LC LSX, Domino-based applications can retrieve and act upon data from agents, during document events, or by clicking a button.

JAVA CLASSES FOR LOTUS CONNECTORS

The Java Classes for Lotus Connectors extend the use of Domino Connectors to Java. The programming model is independent of individual connectors, yet provides access to system-specific features. Through the Java Classes for Lotus Connectors, Java agents and applications can retrieve and act upon enterprise data.

LOTUS ENTERPRISE SOLUTION BUILDER

Lotus Enterprise Solution Builder (ESB) is an integrated development and run-time environment specifically designed for high-performance, interactive access to back-end systems. Applications that run on ESB can execute remotely from Web clients, Notes clients or 32-bit Windows systems. ESB strengthens Lotus' enterprise integration capabilities by enabling developers with basic scripting skills to define dynamic, sophisticated interactions between Domino and external data sources.

LOTUS DOMINO RELEASE 5 SERVER

Domino is a messaging and Web application server platform. It provides a robust and flexible foundation for e-collaboration among employees, customers and trading partners. Three Domino server offerings are available:

- The Domino Mail Server provides e-mail, Web access, calendaring and scheduling, bulletin boards, newsgroups, mobile support, and native support for Web standards.
- The Domino Application Server hosts e-collaboration applications, with built-in services for connectivity to enterprise systems.
- The Domino Enterprise Server features clustering and partitioning services for high availability and maximum server performance, including failover for applications and dynamic load balancing.

Domino runs on popular platforms, including Windows NT, UNIX, AS/400, S/390, OS/2 and LINUX. It also supports a wide range of popular clients, including Lotus Notes, Microsoft Outlook, various Web browsers, Qualcomm Eudora and other Web mail clients, and handheld, wireless devices like PDAs, cellular phones and pagers.

LOTUS DOMINO DESIGNER RELEASE 5

Domino Designer is an open, integrated Web application development environment for use with the Domino Server. It includes all the visual tools required for Web development, such as WYSIWYG HTML authoring, site/page design, frameset design and application preview. It also features e-collaboration application templates for rapid development, built-in services for enterprise data access, and full support for Internet standards. To enable organizations to leverage existing skills, Domino Designer enables developers to use their choice of scripting tools, programming languages and Java IDEs with Domino.

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