E-marketplaces: Taking business-to-business e-commerce to the next level.
Abstract
An entire new class of dynamic e-commerce solutions is quickly overtaking the comparatively static models of the first wave. This new wave has the potential to leverage the Internet’s full capacity for creating truly dynamic, interactive communities and e-marketplaces. This year alone, hundreds of new e-marketplaces will emerge, changing the way business is done in some of the largest and most tradition-bound industries in the world.

IBM is at the forefront of this revolution, offering comprehensive solutions that facilitate all aspects of business-to-business trade and supply chain integration. One of the newest products in the IBM portfolio is IBM WebSphere™ Commerce Suite, MarketPlace Edition—a comprehensive e-marketplace platform based on patented, best-of-breed IBM technologies and components. WebSphere Commerce Suite, MarketPlace Edition provides the infrastructure and tools market-makers need to establish high-performance, full-function, scalable trading communities on the Internet, quickly and effectively.
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Introduction

“The next chapter in the e-business revolution involves the transformation of entire markets and the redefinition of industries. We will see the rise of a new class of entities — e-marketplaces — that will help online buyers and sellers find each other, attack the inefficiencies of traditional markets and carve out for themselves important roles in the e-business economy.”

Louis V. Gerstner, Jr.
Chairman of the Board and CEO
IBM Corporation

Even in an industry jaded by repeated claims of the next “Killer App,” the rise of e-marketplaces is a major phenomenon. This year, hundreds of new e-marketplaces will emerge, changing the way business is done in some of the largest and most tradition-bound industries in the world.

The purpose of this paper is to:

• Provide an overview of e-marketplace trends, growth and opportunity

• Describe the critical success factors of Net market-makers and the characteristics of an effective e-marketplace platform

• Explain how IBM’s new e-marketplace solution, WebSphere Commerce Suite, MarketPlace Edition — and companion products — can help market-makers build and run effective, dynamic e-marketplaces.
**E-marketplaces: delivering on the B-to-B promise**

Organizations are increasingly using the Web to conduct business with greater speed, reach and efficiency. Despite this, buyers and sellers alike are still struggling with high transaction costs, disjointed and complex supply chains, inefficient processes and poor communications that characterize traditional trade in many industries. The first wave of business-to-business (B-to-B) e-commerce did little to ease these inefficiencies, merely replicating existing business models and barely tapping the Internet’s full potential for interactivity and responsiveness.

A whole new class of dynamic e-commerce solutions is quickly overtaking the comparatively static models of the first wave. This new wave has the potential to leverage fully the Internet’s inherent capacity for creating truly interactive communities and markets, with realtime, market-driven pricing and interaction. These trading communities, or e-marketplaces, employ a combination of technologies and services to enable buyers and sellers to interact in a dynamic environment and to establish and maintain relationships with supply chain partners.

B-to-B e-commerce is poised for a revolution, and at the forefront of this revolution are the new Net market-makers, online intermediaries that bring buyers and sellers together in a virtual environment to facilitate B-to-B trade. Dataquest predicts that these market-makers will reintermediate many supply chains — disrupting existing relationships and industry practices in some, driving new efficiencies in many, and adding value to most.¹

**Market overview**

From livestock to petrochemicals, e-marketplaces are popping up in every industry and niche imaginable. They are the forerunners of tomorrow’s truly networked market, where everything — product, pricing, business relationships and the markets themselves — will be liquid and ever-changing. GartnerGroup estimates that over 300 trading hubs have been launched to date, and that the number will rise to 10,000 by 2002. Over 3 million sellers are expected to participate in e-marketplaces by that time. An estimated $438 billion in B-to-B transactions will be conducted via e-marketplaces in 2002. Improvements in efficiency will result in an estimated $57 billion in cost savings.² Some of the drivers fueling the rapid growth of e-marketplaces include:

- Inefficiencies in traditional and first wave B-to-B trade
- Increased bandwidth and computing power
- Improvements in technology and applications
- Nontraditional competition in traditional industries
- Collapsing technology barriers for e-marketplaces
- Shifting of venture funding to B-to-B trade
- Availability of spot-market products
- Costly point-to-point communications
- Lower costs and richer experiences provided by Web technology
- Development of open, Web-based standards
A taxonomy of e-marketplaces

Characteristics of ideal industries
• Large number of players
• B-to-B focus
• High fragmentation (no dominant player)
• Commodities (availability and price are key buying criteria)
• High search costs to find qualified suppliers
• Transaction inefficiencies in traditional trade process (cost, time)

Types of trading networks
• Buy-side (operated by large buyer)
• Sell-side (operated by large supplier)
• Vertical (industry or market: plastics, steel, chemical, paper, telecom, energy)
• Horizontal (function: investment recovery, MRO, benefits and staffing, project management)
• Government

Marketplace initiators (market-makers)
• Brick-and-mortar buyer or supplier
• NetGen company
• Industry consortium
• Third-party service provider

Business models*
• Seller and/or buyer transaction fees
• Seller and/or buyer subscription fees
• Ad or slotting fees
• Revenue from other sites
• Custom storefront services
• Enablement services
• Fees for premium content
• Fees for data or analytics (business intelligence data)

* Transaction fees currently represent the easiest and most effective way to generate revenue, since buyers and sellers are typically unwilling to pay high up-front costs. Expect transaction fees to get squeezed, making creation of value-added services key. One of the most important aspects of the business model, though, is flexibility.
**E-marketplace value propositions**

Market-makers and e-marketplaces can provide significant value to buying and selling organizations of all sizes. They facilitate more efficient and effective trade of goods and services, and eliminate inefficiencies inherent in the trading process. They can improve productivity by providing secure, integrated and ubiquitous access to relevant information and applications. And they can improve business processes by facilitating better two-way flow of information between people and applications in a collaborative environment. The following table lists the benefits of e-marketplaces that are unique to each type of participant:

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Buyers</th>
<th>Market-makers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Enhanced selling power (reach, range, efficiency)</td>
<td>• Enhanced buying power (reach, range, efficiency)</td>
<td>• New customers</td>
</tr>
<tr>
<td>• New marketing and distribution channel</td>
<td>• More negotiating power</td>
<td>• Improved or additional service to customers</td>
</tr>
<tr>
<td>• Improved customer service (better content, more efficient processes)</td>
<td>• More suppliers, more products</td>
<td>• Better leverage current content and customers</td>
</tr>
<tr>
<td>• Automated order and fulfillment processes</td>
<td>• Better service</td>
<td>• Protection of current intermediary role or creation of new role in chain</td>
</tr>
<tr>
<td>• Channel for secondary inventory</td>
<td>• Access to surplus supply, spot purchases</td>
<td>• New and ongoing revenue opportunities</td>
</tr>
<tr>
<td>• Lower acquisition cost</td>
<td>• Faster time to market</td>
<td></td>
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<tr>
<td>• Improved pricing efficiencies</td>
<td>• Lower cost and risk</td>
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<tr>
<td>• Community participation</td>
<td>• More comprehensive solution</td>
<td></td>
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<tr>
<td>• Level playing field</td>
<td>• No ongoing upgrade and maintenance costs</td>
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Net market-makers: reintermediating the supply chain

A market-maker’s primary purpose is to bring together virtually a highly targeted audience of corporate buyers and sellers to solve specific industry problems imbedded in the trading process. Market-makers provide solutions that go beyond the first wave of B-to-B e-commerce to provide dynamic, open e-marketplaces that can enter the supply chain of vertical and horizontal industries, introducing new efficiencies and new ways of buying and selling. By simply resolving inefficiencies, market-makers act as catalysts to compress process time, decrease costs and improve business processes, in ways previously unimaginable. By adding value beyond efficiency, market-makers can truly revolutionize the way trading partners do business. Providing a comprehensive range of services surrounding trade, market-makers offer a strong value proposition, improve customer retention and expand their own potential revenue. Some of the value market-makers may provide to an e-marketplace include:

- Industry expertise and content
- Catalog aggregation
- Transaction negotiation and facilitation
- Logistics
- Community services (chat, discussion)
- Procurement workflow
- Financial settlement or financing
- Quality assurance and rating services
- Business intelligence
- Customer service

Challenges and inhibitors

The competition in e-marketplaces is increasingly fierce as market-makers attempt to gain dominance and critical mass. The biggest obstacle for new e-marketplaces is the ability to bring in enough buyers and sellers to achieve liquidity and create a truly effective dynamic e-marketplace. The top challenges facing market-makers today include:

- Attracting critical mass
- Creating brand recognition
- Building a sound infrastructure
- Getting to market quickly
- Keeping costs down
- Integrating business processes
- Keeping up with rapidly commoditizing services
- Surviving competition and the network effect
- Achieving long-term viability

Critical success factors

Market-makers are facing some daunting challenges. These challenges translate to a set of critical objectives they must meet in order to succeed. Some of the primary keys to gaining critical mass and generating revenue include:

*Time to market and liquidity:* The market will reward first movers in the race for critical mass of buyers and sellers. Because there are only so many buyers and sellers in a particular industry, the network effect will ensure those that have members will attract members. A key measure of success of an e-marketplace is the value of the transactions flowing through it.
Low cost of ownership and operations. To be profitable yet still offer low-cost, full-featured solutions, the e-marketplace should be easy to operate and maintain. Ideally, the underlying infrastructure will help accomplish this through tools, automation and built-in functionality.

Cutting-edge functionality. A successful e-marketplace will have to go beyond simply aggregating content and facilitating transactions. These functions are necessary but not sufficient to realize the true potential of e-marketplaces. Market-makers need innovative capabilities to become and remain competitive.

Flexibility. Market-makers will have to tune e-marketplaces to deliver the value proposition that is appropriate for the unique dynamics of the industry they serve. As requirements evolve and opportunities arise, market-makers should be able to adapt the e-marketplace accordingly.

Ability to add value. The market is moving quickly, and e-marketplace services are rapidly becoming commodities. What is considered valuable today may be merely meets-minimum tomorrow. An effective e-marketplace platform will enable market-makers to quickly design and develop new value-added services.

Secure, scalable, reliable solutions. All businesses engaging in e-commerce need secure, scalable, reliable solutions, but these traits are even more crucial for an e-marketplace facilitating trade for entire industries. An e-marketplace platform should possess a mission-critical, bulletproof infrastructure.

E-marketplace solutions: designing for success
First-moving market-makers who focus on market capitalization over long-term viability and the creation of value will risk failure. Success depends on the market-maker’s ability to attract and retain multiple participants—buyers, sellers and supply chain partners. The requirements and critical success factors of these participants should drive the design and implementation of an e-marketplace. Poorly designed or executed e-marketplaces will attract few participants. In a vicious cycle, e-marketplaces with fewer members provide less value and therefore fail to attract and retain new members. A sound, forward-thinking market design will gain critical mass and motivate others to participate.

Critical success factors of e-marketplace participants
Besides gaining access to a critical mass of buyers and a multitude of sellers, some of the key factors for attracting e-marketplace participants and maintaining their participation include:

- Low cost of operations and ease of participant setup and enablement
- Role-based access control and approval flows
- Catalog content management
- Aggregated catalog, with organization-unique views
- Searchable, filterable content
- Variety of trading mechanisms (for example, auction, reverse auction, contracts)
- Support for buying and selling at desired terms and conditions
- Tracking and reporting of buying and selling activity
Characteristics of an effective e-marketplace platform

Most early-adopting market-makers built their own e-marketplace infrastructures. They found that the e-marketplace solutions of most third-party vendors lacked functionality or could not be configured to meet industry needs. Now, time-to-market pressures, along with the breadth and depth of function required for an e-marketplace to be successful, make proprietary solutions ineffective and unwieldy. Market-makers should choose an e-marketplace platform carefully to avoid getting locked into limited and limiting technology, which will be costly to replace later.

Most packaged e-marketplace software focuses only on one or two key aspects of B-to-B trade, such as community, procurement or auctions. E-marketplaces built on software platforms that only support the capabilities of one or two of these types of solutions cannot deliver the total value proposition of a trading hub. A true e-marketplace must provide comprehensive trading capability comparable to that of all of the above examples combined. The strength of the design of an e-marketplace, as well as the platform underlying it, will be a significant factor of its success. E-marketplaces built on the most innovative and robust platforms will be the ultimate winners. Some critical characteristics of an effective e-marketplace platform include:

Quick to market. One of the market-maker’s most critical success factors is speed to market. An e-marketplace solution should be quick and easy to implement, providing robust out-of-the-box functionality and preconfigured options.

Highly flexible. In addition to being “prebaked” enough to get to market quickly, a platform must also be highly customizable and configurable. Different industries have unique market requirements; market-makers have preferred business models; and e-marketplaces will be adapted and extended over time to create additional value.

Unified content. E-marketplaces should provide a single point of access to heterogeneous data sources, transparently aggregating catalog content into a single, unified view. They should also provide mechanisms for effectively searching, filtering and mining content.

Dynamic trade mechanisms. Businesses have a variety of wants and needs for negotiating trade. They look for a single e-marketplace that can fulfill all of these requirements. First-wave B-to-B solutions supported only fixed pricing. True e-marketplace solutions must support dynamic pricing and negotiation through various real-time mechanisms, such as contracts, auction, reverse auction and exchange.

Open, standards-based architecture. To avoid locking customers into limiting, proprietary solutions, a platform should be based on industry-accepted standards. This will better enable market-makers to extend the system, and achieve integration and interoperability with other systems.

Ease of integration. To provide a truly end-to-end solution, market-makers must be prepared to enable the integration of the diverse data, applications and processes of their members. Market-makers unable to manage the back-end integration among buyers and sellers will fall short of their promises of huge efficiencies.

Built for success. A market-making solution should presuppose the success of the e-marketplace. Gaining critical mass will require scalability; achieving high liquidity will require robust, high-performance transaction capability; rapidly increasing scope will require advanced functionality and adaptability.
IBM and the e-marketplace revolution
IBM's vision is to be the leading provider of e-business solutions, helping businesses of all types and sizes transform their business processes while bringing them to the Internet. IBM is already recognized as a leader and visionary in e-business technology and services. With significant real-world expertise combined with technology, product and services leadership, we have delivered extraordinary business advantage to our customers. And we offer the industry's largest and most reliable portfolio of e-business-enabling software and services.

This section describes some of IBM's key integrated solutions for B-to-B e-commerce and introduces our new e-marketplace solution, WebSphere Commerce Suite, MarketPlace Edition.

IBM solutions: powering B-to-B e-commerce
IBM provides the most comprehensive global solutions for B-to-B e-commerce and supply chain integration on the market today. We have developed an end-to-end strategy for B-to-B e-commerce in all of its forms, including buy-side, sell-side, e-marketplaces and collaborative connectivity for product design, fulfillment and more. This strategy is based on IBM's unique B-to-B experience with more than 10,000 customers of all sizes, including Goodyear North America, Staples, SciQuest.com and a wide variety of others around the world. Unlike other vendors, IBM's strategy includes a complete selection of software and services to support core B-to-B processes — and the integration between them. Our B-to-B solutions leverage considerable industry expertise, actual customer engagements and proven products and technologies. They provide the solid foundation B-to-B trading partners need to do business on the Internet efficiently and effectively.

IBM WebSphere Commerce Suite: a firm foundation
Founded on an open, industry-standard architecture, and based on XML and Java™ technologies, IBM WebSphere Commerce Suite (formerly IBM Net.Commerce) provides a full range of capabilities for B-to-C, B-to-B and e-marketplace environments. It is a comprehensive set of integrated software components that helps businesses of all types and sizes build and manage their e-commerce presence on the Web. With its core and customizable components, WebSphere Commerce Suite addresses a wide range of B-to-B processes, including content management, relationship marketing, dynamic order management, payments, fulfillment and enterprise integration. WebSphere Commerce Suite and its companion products were built using extensive expertise IBM developed helping thousands of companies create successful e-businesses. Some of the e-businesses using WebSphere Commerce Suite as the foundation of their B-to-B strategies include Supervox, Sara Lee, Goodyear, iGo, SciQuest.com and Motorola.

IBM Commerce Integrator: extending business systems to the Web
To realize the full potential of e-commerce while protecting existing investments, businesses need to integrate commerce sites fully into their current business processes and supply chains. The first wave of businesses that attempted to do so was characterized by time-consuming, manual programming of point-to-point integration. IBM Commerce Integrator changes all of that. It is an open, secure solution that helps simplify and accelerate the integration of key business applications that need to share data and conduct transactions on the Web. The solution is specifically designed to work with WebSphere Commerce Suite, allowing businesses to connect back-end ERP and application systems to their e-commerce sites. Commerce Integrator reduces the time, effort and cost of extending business applications to trading partners, suppliers and customers. IBM customers have used Commerce Integrator to link WebSphere Commerce Suite implementations to over 35 different platforms.
IBM WebSphere B2B Integrator: a framework for integrating the supply chain

IBM WebSphere B2B Integrator provides a framework and tools for the specification, configuration, customization and execution of business processes. It facilitates sophisticated interactions between partner businesses, enabling them to act together as a virtual enterprise. Using a Web application programming environment, users can define the business rules and logic that guide and control processes and interactions within and between systems.

One of the key technologies used by the B2B Integrator framework is trading partner agreements or TPA—flexible, XML-based documents that establish and define contracts between trading partners. Businesses use TPA documents to define the agreed model of interaction with a specific trading partner. A TPA document contains information such as the identities and roles of parties involved, interactions allowed, communications protocols, error-handling rules and security protocols. This level of abstraction frees buyers and sellers to focus on business rules and processes, rather than the technology required to implement them.

IBM MQSeries: unifying diverse systems

The back-end integration capabilities of Commerce Integrator are based on IBM MQSeries®, the world’s leading middleware solution for messaging. MQSeries provides heterogeneous, any-to-any connectivity between systems, ranging from desktop to mainframe and enables business applications to exchange information across more than 35 different operating platforms. MQSeries is easy and straightforward to implement, freeing users to focus on business logic instead of the connections between computer systems. MQSeries provides solutions for message brokering, workflow and mobile data access. With a 65 percent market share (Wintergreen Research, 1999), MQSeries is used by over 7000 customers, including 70 of the Fortune 100 and two-thirds of the world’s leading banks.

Java connectors: providing a Web interface to mainframe systems

Customers who need to connect to back-end IBM mainframe applications, such as IBM CICS®, IBM IMS, MQSeries and IBM DB2®, can use Java connectors. These connectors—or gateways—allow Java applets, servlets and applications to connect to transaction servers, databases and resources on IBM OS/390® systems. Java connectors allow OS/390 customers to use Java technology and the Web for front-end user interaction, while keeping business data and logic in existing back-end systems. IBM intends to introduce connectors and gateways for all the major IBM S/390® subsystems.

Introducing WebSphere Commerce Suite, MarketPlace Edition

IBM has announced WebSphere Commerce Suite, MarketPlace Edition to meet the needs and critical success factors of Net market-makers. WebSphere Commerce Suite, MarketPlace Edition is a comprehensive e-marketplace platform based on distributed architecture and patented, best-of-breed IBM technologies and components. It provides the infrastructure and tools that market-makers need to establish high-performance, full function, scalable e-marketplaces on the Internet, efficiently and effectively. Unlike most e-commerce solutions that focus on either buy-side or sell-side requirements, and deliver only pieces and parts of an e-marketplace strategy, WebSphere Commerce Suite, MarketPlace Edition is a complete, end-to-end solution that addresses the entire value chain. And meets the diverse needs of buyers and sellers— as well as the needs of the market-makers who facilitate them.
The comprehensive functional scope and out-of-the-box capability of WebSphere Commerce Suite, MarketPlace Edition greatly reduces the time and technical effort required to build and launch a custom e-marketplace. Adherence to open standards, a modular architecture and a high degree of configurability and customizability also ensure fast time to market for new features and value-added services to meet the dynamic needs of growing e-marketplaces. The solution combines ease and speed of development with adaptability and versatility.

The five Cs
WebSphere Commerce Suite, MarketPlace Edition was designed to support the five critical aspects of B-to-B e-marketplaces: the content the e-marketplace provides, the commerce engine that powers the e-marketplace, the coordination of trade activity, the community it fosters and the connectivity that facilitates a seamless web of information and transactions. A market-maker should consider including the right mix of the five Cs, which may vary according to the industry the e-marketplace serves. WebSphere Commerce Suite, MarketPlace Edition provides key capabilities in each of these five areas:

Content. Aggregated, normalized and standardized catalog information; search and filter of content; member profiles; reports of trade activity.

Commerce. Dynamic pricing, transaction, payment, global trade.

Coordination. Approval flow, negotiation: exchange, auction, reverse auction (RFP/RFQ), dynamic contracts, order tracking.

Community. Chat, discussion, shared workspace, e-mail.

Connectivity. Integration with back-end systems, trading partner systems, other e-marketplaces.

Why choose IBM?
There are many reasons for companies to base their e-businesses on IBM solutions. Some of the general benefits IBM provides are described below. The more specific benefits of WebSphere Commerce Suite, MarketPlace Edition are described in the next chapter.

e-business leadership. With industry-specific expertise, innovative products and technologies and strong consulting services, IBM is a clearly recognized e-business leader and visionary. IBM software systems support 30 billion transactions a day; and industry analysts rate IBM’s integration software as the industry leader.

World-class B-to-B products and services. IBM provides the leading software in the industry for B-to-B e-commerce. IBM solutions are targeted and supported by market planning and research and are drawn from many competencies. The content of our packaged solutions draws from proven customer experience, industry expertise, existing products and technologies and reusable assets.

Real-world expertise. IBM brings significant experience to the e-marketplace segment. IBM is a provider of enabling platforms for market-makers, an e-marketplace partner jointly defining and developing e-marketplace services and a market-maker itself. IBM has already helped build dozens of major e-marketplaces, including PartMiner and SciQuest.com.
Seamless integration. One of the biggest challenges to market-makers is also one of the biggest limitations of other vendors’ solutions: enterprise integration. E-marketplaces will fall short of their promises of efficiencies if they cannot be integrated with the systems and processes of their members. IBM’s B-to-B e-commerce strategy is based largely on integration. Innovative IBM solutions allow businesses to integrate their business processes and systems with those of trading partners, suppliers, customers and e-marketplaces across the Web — quickly and easily.

Open architectures. Best-of-breed applications on an open platform allow market-makers to readily expand and extend their systems, integrate with trading partners’ systems and interoperate with other e-marketplaces. Adherence to industry standards prevents market-makers from being locked into a single, limiting, proprietary solution.

WebSphere Commerce Suite, MarketPlace Edition

This section describes the key components, highlights and benefits of the new WebSphere Commerce Suite, MarketPlace Edition.

Product overview

WebSphere Commerce Suite, MarketPlace Edition is built on the proven e-commerce foundation of IBM WebSphere Commerce Suite, Pro Edition. It includes all of the companion products of that solution, plus the tools for site development, content management, business process definition and site administration. WebSphere Commerce Suite, MarketPlace Edition adds all of the unique capabilities required to build and manage an effective e-marketplace.

Figure 1. Architecture of WebSphere Commerce Suite, MarketPlace Edition
Solution components

In addition to the tools and features of the underlying WebSphere Commerce Suite product, WebSphere Commerce Suite, MarketPlace Edition includes the following new components:

Catalog subsystem. This component enables and controls the creation, management, access and aggregation of supplier catalog content. WebSphere Commerce Suite, MarketPlace Edition provides a unified view of the goods and services sold in the e-marketplace. At the core of the system is an aggregated catalog that can provide different views to buyers and sellers based on their organization and role. Suppliers can input catalog data in a variety of means: manual entry, import or IBM WebSphere Catalog Architect. Buyer administrators can define different views of the catalog by buyer role or organization.

Search. In addition to standard text and keyword searching, the system supports three other filtering mechanisms: product exploration, sales assistance and product comparison. Product exploration allows buyers to filter the catalog by specified product attributes or parameters. Sales assistance allows novice buyers to answer questions that guide them to the most appropriate products. Product comparison allows buyers to compare similar products in the catalog.

Membership subsystem. This component enables and controls the registration, definition and management of members and roles within the e-marketplace. The system supports the preregistration of individuals, organizations and administrators. Roles and attributes can be defined at the e-marketplace or organization level. Roles and other explicit and implicit grouping (such as geography or organization) control access to resources and actions. Support for one level of approval for any or all actions or commands (such as buy or request quote) is built in.

Negotiation subsystem. This component enables and controls the dynamic pricing and negotiation mechanisms used by the e-marketplace. Any item in a seller’s catalog can be made available for auction, reverse auction (RFQ/RFP) or exchange. Regular or Dutch auctions are supported with open-cry, sealed-bid or bulletin board bidding. For RFQ, buyers can specify desired attributes, additional requirements and seller recipients. Notified sellers can then evaluate and respond — resulting in a contract for ongoing purchases, or a purchase order for a one-time purchase. The exchange feature allows buyers and sellers to express bid/ask positions against the same product type. Bids and offers are matched periodically or continuously in realtime.

Contracts subsystem. This component enables and controls the dynamic creation of price contracts for purchases. Price can be negotiated for a specific purchase or for ongoing purchases of a specific item. Contracts can be defined manually or generated from an RFQ/RFP. Maximum quantity and monetary volumes, along with end date, are specified as part of the contract and automatically control its expiration.

Business subsystem. This component controls the flow of orders and reporting data through the e-marketplace. Orders moving through the defined approval flow are converted into XML purchase orders and placed in the seller’s inbox. All transactions and activities from the other subsystems (such as negotiations and contracts) are logged and made available through the reporting tools.
Why choose WebSphere Commerce Suite, MarketPlace Edition?
Market-makers who choose WebSphere Commerce Suite, MarketPlace Edition will gain considerable business advantage — as will the buyers, sellers and trading partners participating in an e-marketplace based on this solution. Some of the key advantages include:

Leading, proven foundation. The solution is built on the market-proven, award-winning foundation of WebSphere Commerce Suite. WebSphere Commerce Suite itself is a complete solution for B-to-B e-commerce; and WebSphere Commerce Suite, MarketPlace Edition has full access to its advanced built-in functionality and extensive tool set.

Comprehensive, truly integrated solution. The solution addresses all stages of e-marketplace development, deployment and growth. It is the only solution that provides complete, end-to-end functionality that addresses every aspect of B-to-B trade. Unlike other, less comprehensive packages that require the customization and patching-together of disparate parts to create a complete solution, WebSphere Commerce Suite, MarketPlace Edition comes with everything market-makers need to facilitate trade, from content to transaction — fully integrated, in the box.

Quick time to market. To meet the urgency of getting to market quickly with a complete solution, the product is designed so that the technical infrastructure can be implemented and operational in just weeks. Browser-based tools, preconfigured options and a breadth of built-in capabilities make implementation quick and easy.

Cutting-edge, out-of-box functionality. WebSphere Commerce Suite, MarketPlace Edition is a feature-rich platform that employs innovative, patented technologies such as exchange, sophisticated extensible searching, pervasive RFI/RFP/RFQ (see below) and dynamic, realtime contracts. These capabilities are all built-in, so market-makers do not have to spend valuable time and resources custom-coding these functions.

Unlimited flexibility. In addition to providing built-in, preconfigured functionality, WebSphere Commerce Suite, MarketPlace Edition is also highly configurable and customizable to support unique industry and market dynamics. It can be adapted and extended in almost any way imaginable to support new features, services and business models.

Pervasiveness. E-marketplace participants require instant access to time-sensitive data, regardless of physical location. They need convenient access to relevant information so they can take action easily anywhere, anytime. IBM is at the vanguard of pervasive computing, spearheading consortia and initiatives to enable continued growth and development of pervasive computing technology. Our new Pervasive Computing Division is helping inject anytime, anywhere connectivity into all of IBM’s software products. WebSphere Commerce Suite, MarketPlace Edition, in particular, supports pervasive notification of time-critical e-marketplace events such as RFQ, bids and other requests.
Seamless integration. An e-marketplace built with WebSphere Commerce Suite can be fully integrated with just about any system, such as buyer procurement systems, seller ERP systems, supply chain logistics systems, market-maker business systems and even other e-marketplaces. Through this integration, a market-maker can deliver extraordinary advantage to its members and stakeholders by creating a truly dynamic and frictionless trading environment.

Open, standards-based architecture. The use of such industry-standard technologies, such as Java, XML, PKI, LDAP and TPAs, ensure the long-term viability, extensibility and interoperability of an e-marketplace built with WebSphere Commerce Suite, MarketPlace Edition.

High return on investment, low cost of ownership. Broad, built-in e-marketplace functionality, realtime automated operations, a rich tool set and online integrated business processes are just some of the characteristics that help market-makers keep the costs of system operation and ownership down. The single, integrated platform reduces the number of disparate systems market administrators must learn and maintain. The highly configurable and customizable solution allows market-makers to adapt the e-marketplace to capitalize on new revenue-generating opportunities and business models with little additional investment.

Mission-critical operations. Based on the production-ready WebSphere Commerce Suite platform, the solution provides the scalability, reliability and security required to operate a high-performance, transaction-heavy e-marketplace that supports a multitude of participants.

Designed for current and future success. The distributed, modular component-based architecture can run economically on a single server or scale over multiple servers to meet the needs of a rapidly expanding e-marketplace. The flexibility and adaptability of the solution allows market-makers to focus on value-added features and services rather than on developing or upgrading the technical infrastructure as market needs evolve.

Preparing for success
This section discusses how IBM products and services, as well as those of IBM Business Partners and Software Developers, can be used to round out the e-marketplace solution. It also discusses the future of e-marketplaces and how IBM solutions are uniquely positioned to help market-makers meet emerging opportunities and challenges.

Completing the e-marketplace solution
IBM’s e-business software strategy calls for the delivery of complete, end-to-end solutions that are constantly expanding and improving as markets evolve. To accomplish this, solutions are built on an open, extensible architecture into which new best-of-breed components from IBM or other third-party vendors can be integrated. This is especially advantageous in the e-marketplace environment, which is rapidly growing and evolving, and in which the ability to add new value — quickly and cost-effectively — is imperative.
Supporting IBM products
Some of the IBM products that can be used to enhance WebSphere Commerce Suite, MarketPlace Edition include:

**IBM Commerce Integrator.** Market-makers can use Commerce Integrator to integrate the trading hub with their own back-end systems (for example, billing or accounting systems) or with those of buyers, sellers and trading partners. It is fully integrated with WebSphere Commerce Suite, MarketPlace Edition and has already been used to connect WebSphere Commerce Suite implementations to over 35 different platforms. No other e-marketplace platform can enable such broad and deep integration between systems.

**WebSphere B2B Integrator.** The framework and toolset provided by B2B Integrator enables market-makers to help buyers and sellers define and execute cross-enterprise business processes. Together with Commerce Integrator, the B2B Integrator framework can help market-makers add significant value for e-marketplace participants by facilitating truly seamless integration and frictionless trade.

**Lotus Sametime.** Market-makers can use Lotus® Sametime™ to add instant awareness, realtime communication and information sharing capabilities to any e-marketplace. Features such as discussion forums, instant messaging, document-sharing and virtual meetings create a true community of interest in which buyers and sellers can interact and collaborate.

**MQSeries Workflow.** Market-makers who want to support more complex workflows than the basic, single-level approval flows supported by WebSphere Commerce Suite, MarketPlace Edition can use MQSeries Workflow. MQSeries Workflow is used to design, document, execute, control and optimize business processes among people within and between enterprises. Users model their processes, then MQSeries Workflow automatically runs the appropriate applications, and creates and distributes work items to the appropriate people.

**MQSeries Integrator.** Market-makers can use MQSeries Integrator to connect with their buyer’s and seller’s different back-end systems. MQSeries Integrator provides the complete functionality of MQSeries (rather than the subset available through IBM Commerce Integrator) and its messaging-based technology applies intelligent routing to integrate applications, databases and networks seamlessly.

Supporting IBM services
IBM Global Services, IBM’s world-class professional services group, provides a number of planning and implementation services for market-makers interested in building e-marketplaces with WebSphere Commerce Suite, MarketPlace Edition. They include:

**Business development workshops.** A one-week engagement to evaluate opportunities and market models and to address key issues.

**Solution outline.** A three-to-four week engagement to develop a high-level design, cost estimate, requirements and architecture for an e-marketplace implementation.
General contractor. A 12-to-16 week engagement to provide a complete quick-start implementation, including documented design and custom deliverables.

Hosting. 24x7 hosting, maintenance and support of an e-marketplace infrastructure.

Complementary products and services
To expand the solution and provide market-makers and their customers with great freedom of choice, WebSphere Commerce Suite, MarketPlace Edition—and the underlying WebSphere Commerce Suite platform—is continuously being integrated with the software and services of leading software vendors. The current list of vendors who are integrating their products with WebSphere Commerce Suite can be found on our Web site:

ibm.com/software/websphere/commerce/community/partners

IBM is also training a select set of premier Systems Integrators who are developing implementation and enablement services surrounding WebSphere Commerce Suite, MarketPlace Edition.

The future of e-marketplaces
Industry analysts and Net market-makers expect explosive growth, migration to next-generation solutions and a major shift from transaction fees to value-added services. According to Forrester, beginning next year, the focus of e-marketplaces will move beyond racing to gain critical mass to racing to deploy increasingly complex functionality to attract members and drive revenue. The winners will be second-generation e-marketplaces—industry leaders whose sites will integrate multiple transaction mechanisms and a range of value-added services.

New challenges facing market-makers include:

- Increased competition
- Rapid commoditization of service offerings
- Lack of virgin markets
- Technical sophistication of competitive e-marketplaces
- The network effect: finite trading means only two-to-three e-marketplaces in each industry

To address the trends and meet these challenges, an e-marketplace platform must embody the following characteristics:

More robust out-of-the-box functionality. Solutions should support such features as: dynamic and flexible contract capability, collaborative procurement to refine projections, automated replenishment for better inventory management and realtime progress tracking along the entire supply chain.

Pervasiveness. An e-marketplace should provide access to data, applications and people—anytime, anywhere—through a variety of devices, such as phone, pager, fax and e-mail.
**Decision support.** As trading transcends price, decisions are based on realtime analysis of criteria, such as availability, delivery time, quality, financing and insurance. Decisions are also driven by data, forecasts and analyses housed in ERP and supply chain systems—as well as in the e-marketplace itself. That intelligence is the true value of aggregation.

**Ease of integration.** E-marketplaces will continue to find new ways to help buyers and sellers cut costs, tying them even more closely to the business processes they support. Businesses and business systems will need to communicate and collaborate with each other more directly and more efficiently for an e-marketplace to be truly dynamic and efficient. E-marketplace platforms that cannot facilitate this cost effectively will not meet the needs of market-makers.

**More flexibility.** The market model and design must be easily changeable to react to new opportunities and requirements before competitors do.

**Interoperability.** Customer requirements and expectations may outpace the built-in function of a single e-marketplace; and horizontal e-marketplaces may be able to provide value to vertical ones. For these reasons, e-marketplaces should be able to connect and communicate with one another, creating true networked markets.

**IBM and the future of e-marketplaces**

IBM is uniquely positioned to help meet the challenges facing market-makers now and in the future. The plans for WebSphere Commerce Suite are based in part on the forward-looking information above. In fact, many of the emerging, critical factors for e-marketplace future success are already built into the product. As opportunities arise, WebSphere Commerce Suite, MarketPlace Edition can be easily customized and extended to support new value-added capabilities and service—even new industries—through its highly adaptable architecture. And, through its open, standards-based architecture, WebSphere Commerce Suite, MarketPlace Edition can help trading hubs achieve full participant integration along the entire supply chain, thereby accelerating liquidity and critical mass. All of this value helps give the market-maker dominance in a highly competitive environment.

**For more information**

To learn more about IBM WebSphere Commerce Suite software solutions, visit: [ibm.com/software/webservers/commerce](http://ibm.com/software/webservers/commerce)