WebSphere® software

Beat the competition to market with a cost-effective e-commerce solution from IBM.

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Introduction

Application development tools, components and standards have come a long way in the last decade — dramatically improving development productivity. The marketing around the ease of use of development tools can infer that building an enterprise-level solution, like an e-commerce system, is a simple process — implying that you don't need to invest in a packaged solution. Deciding to build or buy an e-commerce solution can be a challenge. However, looking at business benefits — rather than technological capabilities — can help you decide more quickly and easily.

A variety of reasons could compel you to consider building your own e-commerce application — like unique business requirements, competitive business processes and perceived cost or faster delivery. You also need to consider the strategic nature of an e-commerce initiative and its long-term economic impact on your business bottom line, company image — and on customer attraction, retention and service. The experience of myriad companies during the last six or seven years confirms that e-commerce isn't just another solution. It's a core competency channel with implications and dependencies on vital enterprise marketing, sales and services processes and with potential connections to related processes controlled by your trading partners.

This white paper explores the strategic value of e-commerce and shows why IBM WebSphere® Commerce delivers a higher return on your IT investment. It also highlights the issues and risks associated with choosing to build your own solution.

Develop an e-commerce strategy that can help you meet your business objectives

E-commerce means much more than simple selling. It gives everyone along your value chain a window through the Internet into your business. So, the decision to deploy an e-commerce solution warrants a deeper look into your ultimate business goals. Many e-commerce channel leaders have adopted various top-down business strategies to correctly identify the functionality and software components required to support their enterprise as they embark on an e-commerce initiative. These strategies typically follow a three-step process, as shown in Table 1.

"E-commerce and e-business have become mainstream. While enterprises continue to use the Internet, Internet technologies and Web-based enterprise applications to redesign business processes, reduce costs and gain competitive advantage, these activities are increasingly shifting from being the focus of major corporate strategic initiatives to becoming the normal way in which business gets done."[1]

– Giga Information Group, Inc.

Three step process to help you develop your e-commerce strategy

Step 1

Start by defining your greatest sustainable competitive advantages you can capitalize on over a three- to five-year period to help you succeed in the planned online channel initiative (using Michael Porter's Five Forces model or similar methods). These competitive advantages could include one or more business differentiators, like:

- Outstanding customer service
- Lower prices
- Wide product selection
- Industry domain expertise
- Rapid introduction of new products
- Superior product availability through realtime integration with your supply chain
- Strategic, rather than selective-switching, relationships with suppliers
- Channel empowerment, post-sale customer service

Step 2

Identify those business processes critical to leverage and support your competitive advantages. They may already be in place to support other offline channels. However, you may need to streamline, standardize, automate or externalize those processes to suit your e-commerce model and its performance and scalability challenges. For instance, a business process that has been efficiently serving the offline model for years is not necessarily as efficient for the online model. Consider the potential impact of the introduction of an online channel to existing in-store, phone and e-mail channels, from a customer expectation perspective.

Step 3

Make a list of the features and functions that you need to add or improve to implement the identified business processes. Implementing these functions in a phased approach, starting with the most essential functions, minimizes project complexity and allows market testing to demonstrate business value before moving to the next phase.

Table 1. Three steps to identify the functionality and software components required for an enterprise

Using a logical way to relate functional requirements to business goals highlights the true characteristics and scope of your enterprise's e-commerce system. The opposite approach — starting with a feature and function require-ments wish list — can be shortsighted and may produce disappointing business results because functional advantage can be short-lived in the business world. Typically, competitors can introduce similar functionality in three to six months. Obviously, the system you choose must support critical processes and offer enough out-of-the-box functionality to accelerate deployment.

"With more than 6,000 customers using its e-commerce applications, IBM has built a formidable presence in a variety of vertical industries and it was not a fluke. Positioning its WebSphere Commerce servers as the platform for high-performance and reliable e-commerce sites, IBM has penetrated a number of verticals such as financial services, retail and sports events like the Olympics."[2]

– International Data Corporation (IDC)

However, you must also consider features like system extensibility and connectivity. Unlike an administration system that you can deploy and let it run for long periods of time without extensive maintenance, e-commerce systems need to be highly flexible to adapt and help you stay ahead in a dynamic, competitive marketplace. E-commerce systems require an extensible infrastructure for business users and developers to support your enterprise business initiatives. In other words, an e-commerce system must demonstrate business-process flexibility and dynamic integration capability to help your business stay competitive and to position it for future growth.

An investment in an e-commerce solution goes far beyond rich functionality and requires the same level of consideration as infrastructure software, hardware and networking. WebSphere Commerce offers a comprehensive e-commerce platform and integration framework that balances flexible processes, rich function and dynamic integration with customers, suppliers and trading partners.

Take advantage of the rich, out-of-the-box function of WebSphere Commerce
Selling online directly to consumers or other businesses. Establishing an online channel for indirect selling through business partners. Or a combination of the two. Whatever your business goals, WebSphere Commerce provides the proven capabilities you need to accomplish the mission. Unlike many packaged e-commerce offerings, WebSphere Commerce gives you the ability to build, test, implement and operate an enterprise-level e-commerce channel. Combined with rich, out-of-the-box capabilities and business-to-consumer (B2C) and business-to-business (B2B) store models based on industry best practices – ready for deployment. It also provides an integration framework and a team development environment that allows you to customize and test the supplied functions or to add new ones to help you meet your business requirements and growth needs. One size can't fit all; even if a system meets your needs today, it may not tomorrow. To keep pace in an ever-shifting market, WebSphere Commerce provides the functionality you need quickly adapt to the demands of your value chain.

For your organization to be truly responsive to market dynamics, you must put business control in the hands of business users. WebSphere Commerce flexibility doesn't stop at allowing you to extend out-of-the-box function and connectivity – normally controlled by your IT team. Through its intuitive user interface, IBM WebSphere Commerce Accelerator offers a unique, patented set of features that enables your business users to define and preserve those business processes and policies that differentiate your company from the competition. You can also draw and manage a unique and individualized trading relationship with each business buyer or trading partner. And WebSphere Commerce does not lock you into a particular model – or force you to follow a specific process-flow scenario. So, you can preserve your unique business identity and market leadership and continue to flourish in an online environment.

A homegrown development solution can seldom match the capabilities of WebSphere Commerce. The cost alone makes it prohibitive to design, build and test a solution with the depth and breadth of functionality available in WebSphere Commerce. And with the established history and expertise behind WebSphere Commerce, you can benefit from the vast experience gained from thousands of installations over many years – including many of the largest e-commerce installations in the world. When you invest in WebSphere Commerce, you get a proven e-commerce solution built on a solid, flexible architecture geared to help you achieve your immediate – and future – business goals.

An architecture that can address your unique business requirements

WebSphere Commerce architecture was crafted with long-term support for the enterprise e-commerce business strategy in mind and is implemented using standard Java™ 2 Platform, Enterprise Edition (J2EE) technologies. IBM understands that different companies and industries require unique business strategies to help them win in the marketplace. And that an e-commerce solution must enable each enterprise to execute its business strategy. Through WebSphere Commerce, IBM offers the flexibility and adaptability necessary to embrace a variety of business dynamics. Your e-commerce solution should integrate with existing business processes – or you may need

"Building robust and cost-effective infra-structures, integrating applications and developing flexible systems that exploit advances in technology require the com-prehensive approach toward technology strategy provided by enterprise architec-ture programs."[3]

– Giga Information Group, Inc.

to build those processes from the ground up. In virtually all cases, WebSphere Commerce architecture can accommodate your business needs and adapt to your current environment by providing a stable platform and a comprehensive set of ready-to-use functions, tools and business models. WebSphere Commerce automates and integrates e-commerce processes and externalizes or comple-ments these processes through realtime online collaboration with customers, suppliers and trading partners.

WebSphere Commerce architecture continually evolves by incorporating the latest technologies and practices from IBM research labs and industry-adopted standards. WebSphere Commerce transactional-splitting capabilities and integration framework use Web services standards – so you can dynamically integrate your e-commerce processes with other local and external business processes. It also addresses your need to provide access through emerging wireless devices and online-offline channels convergence. Homegrown appli-cations often force you to abandon initial architecture discipline and strategic vision because of time constraints and budget pressures.

An e-commerce solution that can handle everyday challenges — and unpredictable demands

When you first evaluate it, a custom solution may seem to have a superior fit. But this advantage can be short-lived – sometimes diminishing even before it's ready for deployment. IBM views robust functional capabilities as just one pillar of the WebSphere Commerce solution. WebSphere Commerce includes a breadth of prepackaged functions that delivers e-commerce B2C and B2B capabilities for different enterprise sizes and different industries. And WebSphere Commerce out-of-the-box functionality can handle not only most of your identified near-term business challenges, but also many other newly discovered and unforeseen business issues.

WebSphere Commerce subsystems and components integrate smoothly to deliver core and extended e-commerce end-to-end capabilities that otherwise would have to be obtained from various vendors and multiple nonintegrated, packaged enterprise applications. With the WebSphere Commerce integration framework, you can choose the best configuration to meet your business needs.

"WebSphere Commerce is an out-of-the-box solution. It will scale to new demands and will provide MNAO with the necessary tools to be at the cutting edge of technology. The primary reason we selected IBM and WebSphere Commerce is that it fits seamlessly in our technology infrastructure with functionality to perform marketing functions such as e-mail campaigns, rules-based personalization, and discount structures as we grow the business."

– Grant Uehara, Systems Manager, Web Application Development, Mazda North American Operations (MNAO)

"The new WebSphere Commerce Business Edition will help us achieve our core strategic objective: faster deployment of the application, easy-to-build extensions and maintain a robust application to attract a large and loyal online community of customers. In fact with this new offering, we anticipate adding new features and extending current features to interface with third-party products to support millions of caregivers using our site on a daily basis."

– Dr. Prasuna Dornadula, Vice President and CTO, CareTouch, Inc.

And because most back-end systems weren't designed with Web-based self-service in mind, WebSphere Commerce provides a rich customer-facing system for robust exchange of business transactions and information — leaving the existing back-end system as the system of record in appropriate scenarios. You can specifically design your WebSphere Commerce implementation that way, improving performance, security, integration, and process automation and externalization. WebSphere Commerce aims to provide an end-to-end solution for a wide market segment, while acknowledging that a single size does not fit all — and that your business requirements are unique to your enterprise.

Adapt on the fly to changing market requirements

An e-commerce solution based on rigid specifications limits your company's ability to evolve the solution to meet changing market requirements — and limits the solution's life expectancy in the process. Without a flexible architecture, your e-commerce solution will require significant time and effort to make changes whenever your business requirements change. The flexibility offered by WebSphere Commerce addresses the needs and expectations of different user categories.

IBM WebSphere Commerce configuration manager enables product installers and system administrators to assemble the right system configuration, business model and product features, as required by their implementation. WebSphere Commerce accelerator empowers business users from marketing and sales to set and execute promotions, campaigns and business policies. And developers enjoy full flexibility with programming and productivity tools, which conform to open, industry standards — as well as WebSphere Commerce development features like the WebSphere Commerce integration framework. Prepackaged interfaces integrate external commerce enablement systems, like search engines, content- and catalog-management tools and configurators.

WebSphere Commerce addresses customer preferences through multilingual and multicultural functionality, wireless-devices support, personalization and guided selling. For suppliers and trading partners, the member subsystem and access control provide enterprises with unlimited flexibility in determining user roles and categories.

"Thanks to the open-standards design of WebSphere Commerce, we were able to use the messaging middleware of our choice and apply the latest Web services technology to integrate components across our company."

— Skip Holbrook,
Project Manager of e-commerce,
Discovery Communications

Deliver multicultural capability

The adaptability of an e-commerce product is measured by its ability to serve in a global trading network and in different business and technology environments — and to survive the Internet-maturity turmoil. Complying with the appropriate set of open, industry standards, when available, provides an advantage. However, standards alone may not be enough to secure product adaptability. For instance, while supporting the Unicode Standard is important, that alone may not be sufficient to produce a multicultural e-commerce application. Similarly, application integration with customers, suppliers or other trading partners is more likely to succeed when it uses an industry-accepted standard package based on J2EE and XML, rather than a homegrown solution using proprietary interfaces and available technology. You need business-process domain expertise to determine how to automate processes and how to share transactions among different parties.

WebSphere Commerce is built on IBM WebSphere Application Server, the industry-leading J2EE application server. WebSphere Commerce also leverages other WebSphere software products as well as Lotus® and Tivoli® technologies from IBM to deliver a synergized and adaptable platform that builds and deploys a global-enterprise-ready e-commerce solution.

For developers, the WebSphere Commerce Studio development environment is based on open, standards-based Eclipse technology to facilitate team development and offers an extensible application development environment for J2EE and Web services. This environment gives your developers integrated support that allows them to efficiently create, test and deploy Java technology, Enterprise JavaBeans (EJB) components, servlets, JavaServer Pages (JSP) files, HTML pages, XML documents and Web services. It also enables developers to leverage existing data models, business objects, business rules and other assets and to modify WebSphere Commerce functions or build their own specific features necessary for their business. WebSphere Commerce ships the same tools used by its developers to build its components, so you can minimize compatibility or integration issues for your add-on and customized functions.

"With IBM's assistance, the Lillian Vernon Web site is now the fastest growing part of our multichannel strategy of catalogs, stores and B2B sales. IBM provided the creative design, user interface, template development and back-end integration we need to create an optimum shopping experience for our customers. Our new site will drive more business to the Web."

– Lillian Vernon, Founder and CEO,
Lillian Vernon

Provide easy access to your Web site to increase user satisfaction

Users of an e-commerce system can belong to various categories — like site administration, business managers and site builders. But online customers are the main category — and represent the ultimate site users. However, usability applies to each user category and to every interaction. A public application accessible by users of various ages and countries with varying levels of computer skills presents a design challenge when you consider multicultural usability and accessibility issues.

WebSphere Commerce provides prepackaged store models certified under IBM usability guidelines. These models can help Web designers to deliver industry-leading e-commerce sites. Many sites using WebSphere Commerce have already scored the best industry marks in usability. According to a recent study by Web site usability expert Jakob Nielsen, L.L. Bean scored the highest industry mark by meeting 66 percent of Nielsen Norman Group's usability guidelines.[4] Any e-commerce initiative that doesn't position site usability as a top priority may end up hindering user acceptance and jeopardizing the success of your e-commerce initiative. Customers tend to be impatient when it comes to online site navigation and product search. To stay ahead of the competition, you must be able to provide your customers with immediate responses to their inquiries.

Delivering superior reliability, performance and scalability

Testing is a critical phase in any application development project — perhaps even more critical for e-commerce where the intended application runs on a public network. The application must be stress-tested in a realistic environment to duplicate what could happen when the application goes live over the Internet— and to deliver not only the right functionality, but also the expected application performance, uninterrupted availability, scalability and overall e-commerce site security. You must test extensively to uncover potential critical malfunctions that may be difficult to predict at the design stage or otherwise discovered by building a proof-of-concept prototype. Most e-commerce sites are accessible by a public, worldwide audience, and as a result, must be well protected against accidental or deliberate misuse, carelessness, vandalism and piracy.

"WebSphere Commerce scales way beyond our expectations. It is stable and reliable. We're in great shape now to attack and accomplish our business objectives."

– Skip Holbrook,
   Project Manager of E-Commerce,
   Discovery Communications

As enterprises open internal systems to those of trading partners to leverage Internet-era supply and demand chains, security concerns grow bigger, and controls over potential internal and external breaches become much more difficult to secure. Effective security requires highly sophisticated technologies at various levels of the e-commerce system and must be integrated to the enterprise security infrastructure.

WebSphere Commerce enjoys a tradition of quality, which comes from dedicating nearly half its overall development resources to testing- and quality assurance-related activities. Reflecting IBM's commitment to e-commerce as a mission-critical system. And IBM's refusal to compromise on quality to reduce cost or to rush a product or functionality to the market. Ongoing research continues to improve the fault tolerance of hardware and software systems and to add self-healing capability.

Unite business-critical assets across and beyond your enterprise
The challenge of integration is a reality facing most enterprise e-commerce initiatives. Regardless of whether you plan to buy a packaged solution or build your own. It's clear that to provide effective, efficient e-commerce requires tight, as well as loose, integration across core enterprise applications and its many components services. A hand-coded, point-to-point data movement approach can be too expensive to build and maintain. And it can fail to meet the dynamic nature of e-commerce processes – especially in B2B business models where business process integration becomes critical for efficient trading interactions.

The flood of disparate data formats and communication protocols can lead to inefficiencies when you're trying to connect other systems running within the enterprise – like ERP, CRM or SCM systems – or with external entities like buyers, suppliers or other trading partners. Industry standards can offer relief in this space; however, in many cases, standards don't exist or there are just too many of them, and you are charged with identifying and adopting the right standard for the right challenge.

"Firms spend millions of dollars every year to integrate applications and create connections to partners. Too much of this money is spent on one-off application-to-application connections, inflexible custom adapters, and expensive consulting services—none of which are reusable."[5]

– Forrester Research, Inc.

WebSphere Commerce provides an integration framework that solves today's e-commerce integration challenges while preparing enterprises for future evolution in Internet connectivity. This single-vendor solution meets the expectations of e-commerce initiatives, from the simple storefront to the most advanced private or public exchanges. The key for success in dealing with integration challenges is to select the most appropriate integration approach for the challenge at hand—which can easily translate into significant cost savings. IBM's main objective for e-commerce integration is to provide the right integration approach to the right connectivity challenge, and lower total cost of integration both for initial investment and long-term maintenance.

WebSphere Commerce and complementary integration products from IBM can deliver a comprehensive, affordable approach to address e-commerce integration challenges through a mix of prepackaged and add-on capabilities. Leaders in e-commerce have already realized that a hand-coded, point-to-point integration can't meet their growing e-commerce integration requirements and that truly efficient ability to connect to suppliers and partners depends on the successful implementation of a process-oriented integration framework. A framework that can gradually evolve into a service-oriented one that capitalizes on recent Web services innovations. Process- and service-oriented integration can deliver required performance for a dynamic e-commerce solution through selective and collaborative sharing of in-context information and business functions, and would make your business ready for a future distributed, multivendor, virtual enterprise.

Reduce the total cost of ownership of your e-commerce solution with WebSphere Commerce

Mission-critical applications can be very expensive to build. In contrast to a single-priced software package, in-house development costs are distributed among various direct and indirect expenses, materializing over time. Even if an initial in-house launch proves less expensive than a software package, a build option can easily lead to significant maintenance challenges and cause initial savings to be dwarfed by ongoing maintenance and operational costs. So, from a financial perspective—just like other core applications, such as payroll and accounting—building an e-commerce solution from scratch can prove to be a time-intensive, costly mistake.

"Based on a function cost of $250,000, it will cost a company from seven to 10 times more to develop a particular functionality than it will to purchase an equal functionality."[6]

– Giga Information Group, Inc.

One of the key contributors to this high cost is that enterprise application development demands highly skilled personnel like architects, designers, programmers, projects managers and business users. These skills usually come at a high cost and can be difficult to retain. Also, this domain fluctuates constantly, especially from a technology perspective. Even if you have the personnel with the required skills today, you will need to continually update their skills to stay at the leading edge. Another cost contributor is the prerequisite software that an e-commerce solution requires—including development tools and infrastructure and middleware products like a database manager, Web server, application server and directory server. Other hidden costs? Building, testing and deploying bug fixes. Managing dependencies. And lost sales opportunities because of poor system usability or site unavailability.

With WebSphere Commerce, your enterprise can achieve a faster return on investment and long-term investment protection. IBM WebSphere Commerce offers, from a single vendor, the industry's most comprehensive end-to-end functionality for both B2C and B2B business models and bundles the necessary infrastructure middleware inside the package, along with a development and test environment. WebSphere Commerce also includes other products for advanced e-commerce-enabling capabilities like collaboration, personalization, analysis, content management and integration.

Beat your competition to market

Being early to the market can mean the difference between the success and failure of your e-commerce initiative. The brief history of e-commerce is full of anecdotes about organizations that bring their products and services to market first having the greatest chances to lead and capture the buyers' mindshare. An e-commerce development project takes commitment. Take too long and you risk losing market leadership to competitors who manage to implement a faster solution. By building a solution based on WebSphere Commerce, you can get to market faster — and capture additional revenue and cost savings in the process.

"Within three months we took one of our companies from nothing up to realtime inventory, realtime order placement, realtime order tracking [with WebSphere Commerce]. Since that time, we've rolled out the same functionality across five of our other companies."

– Eric Keil,
 IT Director of e-business,
 Panasonic Management Information
 Technology Company

As mentioned earlier, WebSphere Commerce provides a wealth and breadth of out-of-the-box functionality ready for immediate deployment through the shipped store models. To enable an ongoing time-to-market leadership, IBM makes new functions available at no charge to eligible WebSphere Commerce users through periodical code releases called WebSphere Commerce enhancement packs, as well as through reference applications.

Minimize your risk

The rapid pace of change in e-commerce technology and processes introduces an element of risk into almost any deployment activity. This constant change makes an identified solution the right one for a relatively short period of time – twelve months on average – after which changes and extensions to functions, connectivity and infrastructure often become a high priority for your enterprise. This means that if you plan to build your e-commerce solution, the application requirements will probably change before your first release is ready for deployment. Even if you can control the changes coming from market and user requirements, you will not be able to control changes coming from the many vendors you depend on to provide the infrastructure, middleware and development tools. Keeping all of these software products working in tandem is a challenge by itself. This technology and business volatility makes even the most well-planned e-commerce development project a high-risk commitment.

Buying WebSphere Commerce software helps to minimize your e-commerce initiative risk in a variety of ways. You'll work with one of the industry's most viable vendors. You'll acquire a market-proven product with leading-edge technology and the most comprehensive end-to-end e-commerce solution. And you'll be able to direct your IT and business resources to focus on value-add customizations, integration, change management, deployment and similar activities to enable faster and smoother rollout and better return on your investment.

Summary

The Web has brought profound change to the way you conduct business. Forward-thinking companies realize that they can't achieve their e-commerce potential by simply adding transaction capability or a shopping cart to a brochureware Web site. That e-commerce means building an infrastructure that offers a completely new way of doing business and gaining competitive advantage. And while it may be tempting to rely on your in-house development teams to write an e-commerce application or key feature in a very short time period, often writing the code is the easy part — most of the application development cost is hidden under other pre- and post-development tasks. Resources can be wasted in maintaining a homegrown e-commerce application. Developers who built the code leave the company or move to other jobs. And the application becomes bigger and more complex with newly added functions and connections to other systems. Unless you intend to be in the application development business, a build option will revert your resources into a noncore competency because you have to allocate resources to maintain the developed code.

IBM recommends focusing existing IT resources on extending WebSphere Commerce out-of-the-box functionality and integrating legacy systems using the provided development environment, integration framework and sample code. IT resources are already stretched with the need to extend enterprise application capabilities and integrate to other systems inside and outside the enterprise. Building an e-commerce application from scratch only stretches your resources further, without adding real business value.

E-commerce is a mission-critical enterprise application with interconnections to many other critical applications at the enterprise and possibly at other trading-partner systems. The strategic business value of the initiative should determine whether you go with WebSphere Commerce or a homegrown solution. Both common-sense wisdom and market leaders' experiences suggest that WebSphere Commerce offers the most beneficial approach for e-commerce initiatives.

For more information

To learn more about how IBM WebSphere Commerce solutions can help your business, visit:

ibm.com/websphere/commerce

IBM®

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