Overview

Orbis Online's mission is to cost effectively and efficiently solve the two largest problems facing business and government today. Businesses and governments are paying too much for the cost of goods and services, and, there are huge inadequacies in the supply chain mechanism as it exists today.

To this end, Orbis Online has developed a suite of procurement and asset disposition tools, the Customized Competitive Bid Platform (C.C.B.P.) engineered utilizing XML and made available for use to its customers and partners as Web Services. The procurement tools included in the C.C.B.P. are *Sealed Bid Procurement*, *Standard Reverse Auction Procurement*, *Real Time Reverse Auction Procurement, Standard Forward Asset Disposition, Multiple RFQ/RFP Standard Reverse Auction Procurement, Multiple Lot Procurement Technology, Local Area Supplier Aggregator System, and a Managerial and Reporting Console ,* as well as multiple other supply chain tools that are currently in development. Each tool can work independently, or the suite can work as a unit and can be tied into any existing customer technology. This offering makes Orbis Online the first vendor, to our knowledge, to provide this level of business functionality deliverable as a Web Service.

The advent of the Internet has radically transformed the ways in which companies and consumers conduct business worldwide. To say the least, it has become a key component for buying and selling products and services both directly to private consumers and between businesses themselves. This exchange of information, and the buying and selling of goods and services between businesses over the Internet has come to be known as Business-to-Business Commerce (B2B). Market estimates for the growth and size of B2B vary depending on the definition and methodology used. In their May 2000 report, B2B eVolution, Credit Suisse/First Boston forecasts the total market for B2B e-commerce will eventually be $32 trillion[1].

The use of e-solution tools such as the C.C.B.P.'s real-time reverse auction has empowered businesses and government agencies to capitalize on the power of the Internet to save time and money. By aggregating suppliers together in one online location to participate in real-time competitive bidding events, this transparent environment lends itself to driving prices significantly lower as suppliers compete for the business of the purchaser. By using the C.C.B.P., Orbis Online's customers have saved an average of 27% off historical purchase prices for the items they've purchased and were able to complete the transactions in 10% of the time of the traditional paper-based procurement process.

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[1] "B2B eVolution." Credit Suisse/First Boston Corporation, May 2000

Our Technology Sets Us Apart

What sets Orbis Online apart from its competitors is our delivery method and the instant customization characteristics by which our components are made available to our customers and partners.

To date, the technology available to facilitate the blitzkrieg of Internet business transactions that has ensued has been limiting. The myriad of companies desiring to conduct business with one another utilize varying applications and programming languages that do not communicate with one another. This hinders the ease of conducting transactions and the exchange of information between them. Businesses are beginning to see the need to facilitate highly complex and unique interactions among multiple business partners. These types of integrated transactional networks are called Business Webs.

The technology that enables the creation of Business Webs is called Web Services. As stated in *Web Services*, an article appearing on Infoworld.com, March 9, 2001, Tom Sullivan explains "Web Services are software components that represent business functionality that can be accessed by users—via applications or another Web Service—using standard protocols. More importantly, a Web Service may combine several applications that a user needs, such as the various pieces of a supply-chain architecture. For the end-user, however, the entire infrastructure will appear as a single application."[2]

Standardized protocols such as UDDI (Universal Description, Discovery and Integration), XML (eXtensible Markup Language), SOAP (Simple Object Access Protocol), and WSDL (Web Services Description Language) are the programming tools that empower companies to offer their software components or platforms as Web Services.

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[2] "Web services" by Tom Sullivan – Infoworld.com, March 9, 2001

Why Not Business as Usual?

One may ask why business webs are so important. Today's Internet software technology does not adequately address the need to create highly integrated transactional networks between multiple business partners. A good analogy to a business web comes from an advertisement for a large consulting firm. Here, a large fish is being confronted by a group of small fish that have formed into the shape of a shark. The power of the dynamically assembled little fish is greater than that of the large fish. The large fish represents a typical Internet application. The small fish could instantly re-form into any shape and could gather more fish on demand. The group of little fish represents a business web. With the advent of Web Services and business webs, for the first time, companies can function like a single entity. A company's various constituents such as suppliers, resellers, partners, and customers can all interact and work together as though they are one, while maintaining security and autonomy.
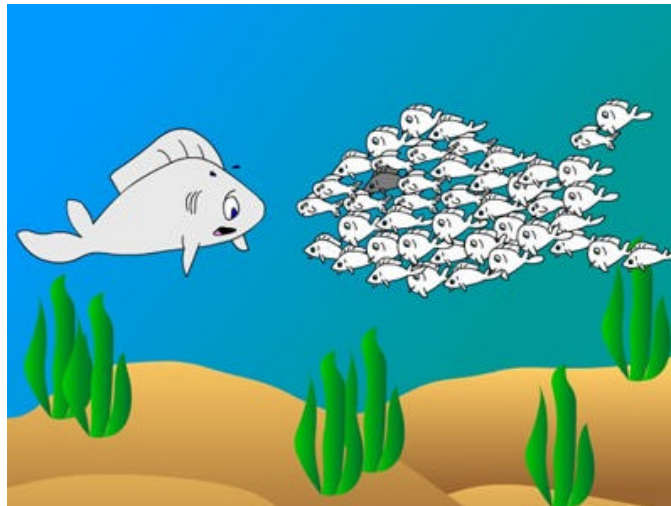
The application development tools in use today do not support the development needs of business webs. Companies have varying levels and types of business relationships. Some may be contractual and involve unique segments of product lines, such as logistics, purchase orders, maintenance agreements, regulations and business processes. Traditional web-implementation methods, such as ASPs (Application Service Providers) will have difficulty handling options. Typically, these types of Internet applications have been built individually and customized for each partner. The result has been hard-wired applications that cannot be customized or easily maintained. These applications will find themselves lacking as there is no way to rapidly deploy or change one without reprogramming the existing code. Because of these factors, individually built Internet solutions have added huge development, maintenance, and operations costs to the price of conducting e-Commerce. Our competitors have yet to fully overcome these hard-wired software issues.

Hard-wired Internet Application Development and Maintenance
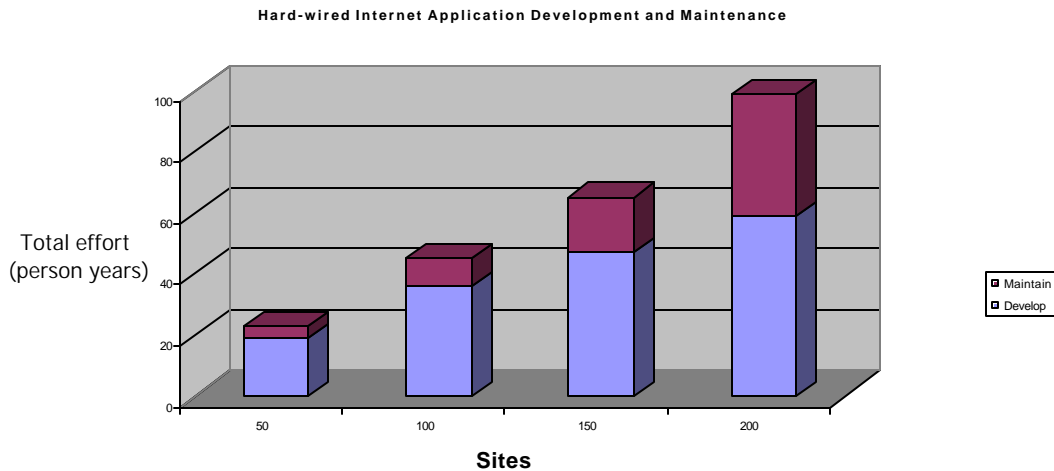
The above figure shows the cumulative development and maintenance costs associated with building and maintaining hard-wired Internet applications. It assumes that the effort of building one customized application requires two-to-six months of person effort. The information in the figure is also based on the assumption that maintenance costs vary anywhere from three weeks to several months per site and that some portions of sites need to be maintained on an ongoing basis.[3]

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[3] "Customized Business Webs" by Bowstreet, November, 1999

Traditional Web Technology
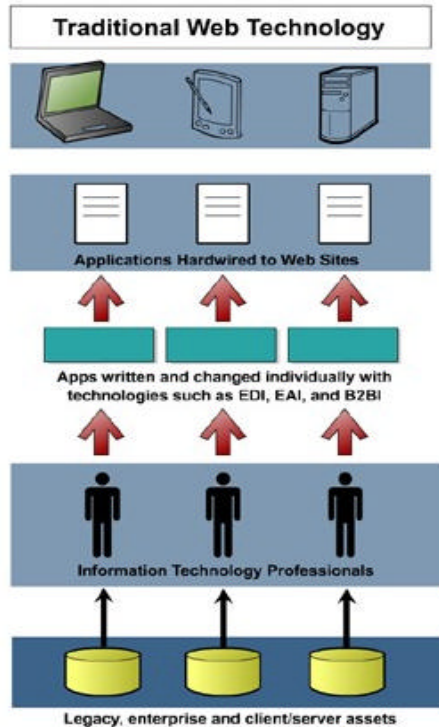
These types of individual web applications are very difficult to administer and maintain. In fact, B2B web sites utilizing hard-wired applications have the potential to become the new legacy environment nightmare for IT organizations. The fundamental limitations of traditional development applications do not support massively distributed solutions and maintenance projects. Once these applications are deployed, organizations are forced to create many versions to support various end users and must individually upgrade each partner's software as changes are made in the applications.

**Orbis Online's Technology**

Orbis Online has taken a whole new approach to assisting and enabling our customers to build massively customized, cross-boundary business webs. We use high-end automation technology that provides seamless integration with today's application development components and web technologies. Our XML Web Services solution for procurement and asset disposition, or the C.C.B.P., is a suite of deployable, scalable B2B/B2G applications customized for any business partner or customer by automating the construction of these applications on-the-fly in runtime. The C.C.B.P. can be deployed electronically through a simple e-mail to anyone who has Internet access and an e-mail address, or by piggybacking on our customers' and partners' websites, regardless of what type of hardware or software they use. What this means is that the full power of our product suite can be seamlessly integrated into any web site in about five minutes time from anywhere in the world, instantly customizing itself to the host web site's look and feel, with no special hardware or software required by the end user. Additionally, no involvement of IT personnel is required on the user end. With a few simple instructions, this integration can easily be accomplished by anyone who has access to the functionality

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of a web site. This simple and instantaneous availability and customization provides our customers with extraordinary productivity gains and the ability to compete better with more dynamic business models. They are able to create procurement and asset disposition business webs of their own by allowing their customers and partners to have access to web services that Orbis Online has deployed to their own web sites.
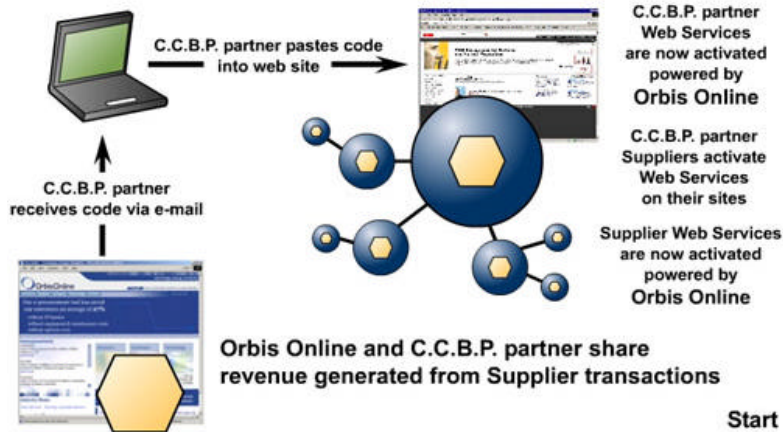
The C.C.B.P. uses DSML (Directory Services Markup Language) and XML to enable data interchange between disparate partners, across organizational boundaries, and without proprietary middleware. B2B web applications can behave in a variety of ways depending on the context defined by the user's behavior and directory profile, since the application code is generated in runtime. The result is an intelligent infrastructure for customizing B2B web applications.

Dynamic customization is made possible by merging metadata templates based on XML with profile information stored in an LDAP directory. This metadata approach reduces the time and cost involved in deploying technology.
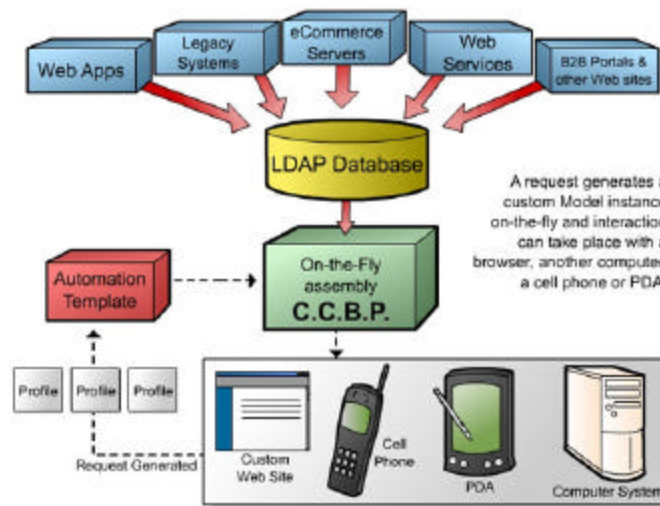
How does this technology work?

Unlike traditional templates or designs for starting points for projects, business web Models (Models for short) are self-contained engines that construct business webs in runtime, based on profile-driven input parameters.

We are able to link together a number of Models to form a "digital supply chain". Each Model provides some discrete portion of functionality. For example, in a purchase order system, one Model might handle generation of different kinds of address blocks, while the top-level Model would put all this together with calls to catalog services. This multi-tiered linking of Models is what forms a complex business web. The parallel between the levels of automation made possible with The C.C.B.P. is similar to the levels of automation we've seen in the manufacturing world.

The technology utilized in Orbis Online's model is Builders. A Model is comprised of a set of Builders that a developer snaps together to form a digital factory. A Builder is a unit of processing functionality that performs a discrete construction of software operation. When a group of Builders is linked together in a Model, and are supplied with parametric inputs, the result is a powerful digital factory floor that can dynamically generate custom business webs.
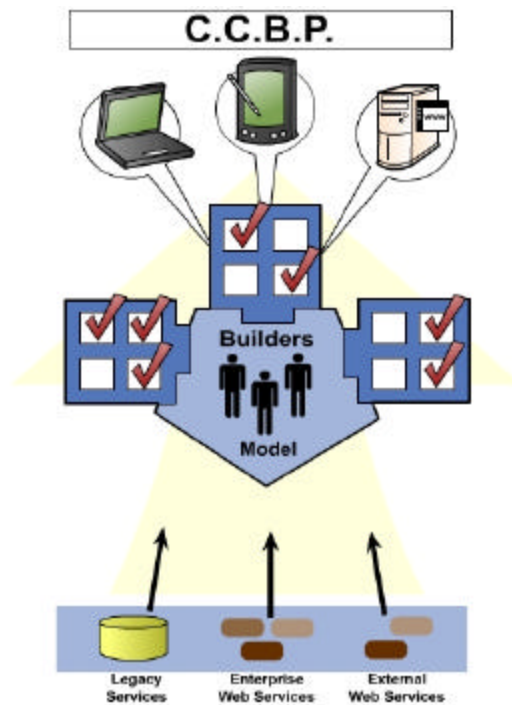
In the C.C.B.P. a Model is equivalent to a robotic production line, and the Builders are the equivalent of robots. The product, in this case, is a dynamically generated block of XML data that describes the functionality, behavior, and structure of a business web.

Orbis Online has constructed a number of Builders for general use. These Builders have been targeted at building content, structure, functionality and behavior that is common to most companies' general practices. Orbis Online has developed Builders that construct calls to XML-based web services published in a meta data directory, construct complex data transformations among different XML schemas, construct business logic, and describe interactive behavior.

These specialized Builders fall into different categories:

- ❑ <u>User Interface Builders</u> – For building UI controls dynamically in the context of anyone's web site, and binding XML data sets to these controls.

- ❑ <u>Data Structure Builders</u> – For building XML structured data sets with derived or explicit schemas to hold processed data coming and going from distributed services.

- ❑ <u>Data Transform Builders</u> – For constructing workflow-based XML data transformations among service inputs and outputs using automated schema analysis techniques.

- ❑ <u>Function Builders</u> – For constructing business logic in procedural and declarative syntax to control the processing of service calls and interaction with users. Includes capturing of business rules.

- ❑ <u>Behavior Builders</u> – For defining runtime behavioral characteristics including event handling and user interface visibility states.

- ❑ <u>Infrastructure Builders</u> – For linking and embedding Models among each other.

- ❑ <u>Communication and Workflow Builders</u> – For constructing notification mechanisms such as store and forward.

- ❑ <u>Development Builders</u> – For building Builders out of other Builders.

In addition to these categories, Orbis Online is developing e-commerce Builders. And of course, we can build specialized Builders by compiling one or more existing Builders.

Orbis Online builds and deploys procurement and asset disposition models. Our users make requests to run the Models. Requests are formatted in HTTP (other protocols added as needed) and are accompanied by a set of input parameters. A request causes our system to regenerate the Builders in the Model to construct a custom Model Instance, then run the model in the C.C.B.P. Engine by assembling a set of web services on the fly.

So, unlike traditional development environments in which applications simply execute at runtime, the C.C.B.P. first builds the Model on demand, and then executes it. It is, however, preferable to pre-build an inventory of commonly requested custom Models, as opposed to building on demand. This will optimize system performance.
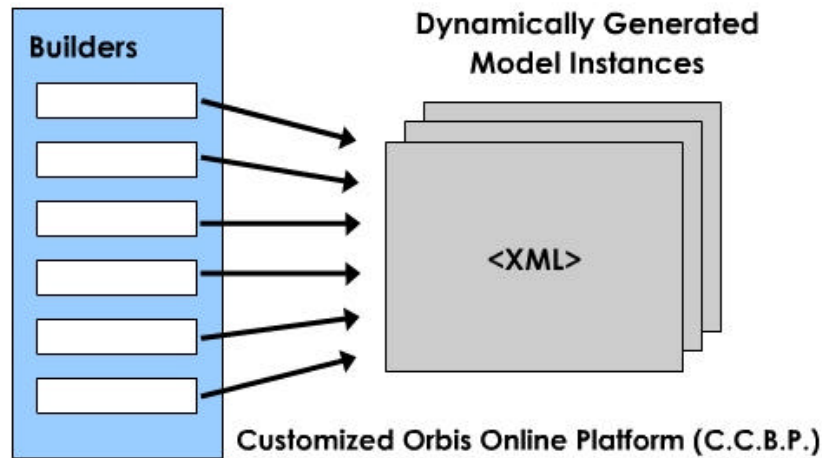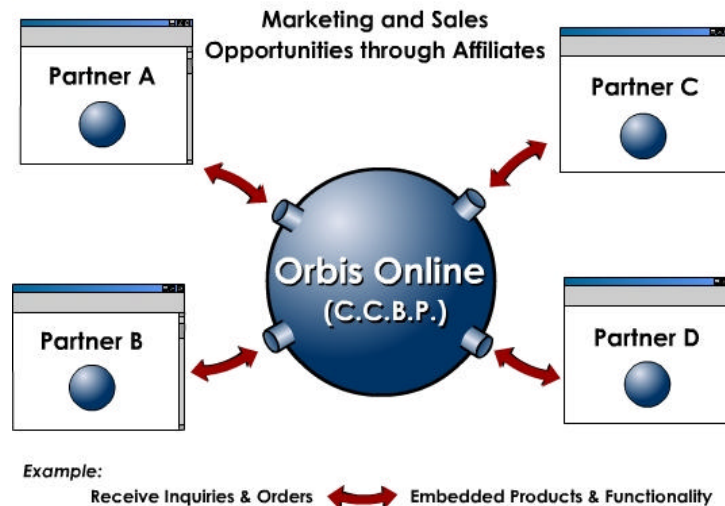

Using our Procurement and Asset Disposition Model, we can define customized sets of parameters to drive Builders in order to customize the construction of the Model Instance. These are called "Profiles". When building a Model, Builders can be chosen which will have the option of being "enabled" versus "disabled" during regeneration, as well as what Builder inputs can be varied from their defaults. This process is called "profile enabling" a Model and it is analogous to publishing the public interface to the Builders.

This process is designed to be utilized by non-IT professionals. The C.C.B.P. encourages non-technical users to build and manage Model profiles, independent of the Model design and maintenance process. This enables customers to construct a business web that allows line of business personnel to define and maintain the profiles of the business participants. For example, a marketing representative user could define the profiles for gold, silver, and platinum service levels for customers, or define profiles for different geographical territories.

How is Orbis Online impacting the e-commerce revolution?

The business value of implementing solid customized business webs is a combination of more efficiently developing, deploying, and maintaining a partner's customized web site and enabling both the business and its partners to realize the potential Return on Opportunity from the implementation.

To truly expand market opportunities over the Internet, companies must "think out of the box" and look beyond their own web site and discover ways to buy and sell through partners and affiliates. The most effective way to do this is to buy and sell products and services through the web sites of partners. Orbis Online has done this by creating a web-based store within a store – pushing its own e-commerce business process as a web service into the e-commerce web sites of a partner.

Marketing and Sales
Opportunities through Affiliates

Partner A

Partner C

Orbis Online
(C.C.B.P.)

Partner B

Partner D

Example:
Receive Inquiries & Orders ⟷ Embedded Products & Functionality

co-branding │ create & manage your "Stores within Stores"

Example: A Company "embeds" its web site into partners' sites
- Create your "store" on their web site
- Retain your brand
- Easily create and manage thousands of your "stores" across the web

Selling and marketing in this way provides several important benefits:

- Leverage the reach and distribution of other companies

- Leverage indirect channels that exist all over the Internet

- Increase market penetration without increasing your cost of sales

- Re-package and bundle The C.C.B.P. products and services for sale through these partners

Building partnerships without boundaries
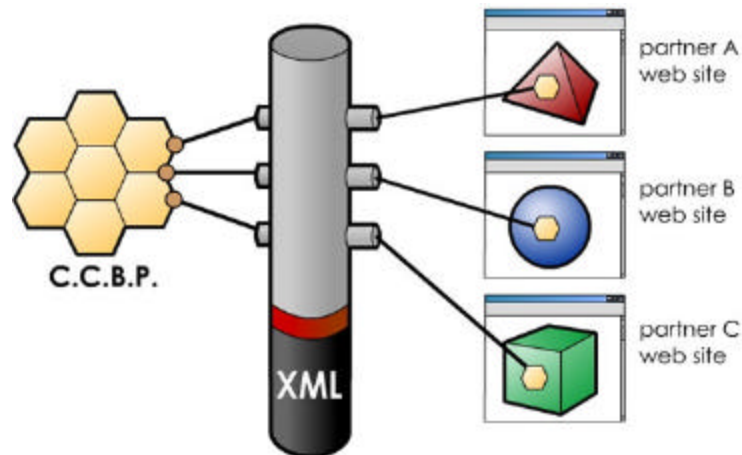
Economically, the C.C.B.P. is a breakthrough because it dramatically lowers not just the "sell-side" infrastructure costs for all forms of traditional e-business but also the "demand-side" opportunity costs of creating new markets, new businesses and new business models.

What Infrastructure do our customers need to utilize The C.C.B.P.?

If our customers have access to the Internet and can check their e-mail, they have everything they need to access the entire suite of C.C.B.P. tools.

Can our technology be pirated?

Customers and unscrupulous individuals who would like to be able to pirate this software will find that they cannot. Individuals have access to the functionality of the code, but have no way of viewing or obtaining the source code itself. Piracy is a great concern of our competitors because although their code is compiled, it can still be hacked and replicated because customers and individuals have access to the actual code itself.

How much of a lead do we have over our competitors?

It is our estimation, based upon our experience in developing web services and the experience of other companies in developing other types of web services, that at least 12 - 18 months of development time is required to fully deploy complex technologies as web services.

The Human Factor

In the development of its procurement and asset disposition tools, Orbis Online has also taken the human factor into consideration. We provide the end-user the ability to conduct e-commerce in English, Chinese or Spanish, and will soon offer translation of our tools into Japanese.

Orbis Online's Services

In addition to providing state-of-the-art deployable Web Services to our clients, our experienced and competent staff supports our procurement and asset disposition technology by providing supplier and purchaser sourcing and by training our clients in the use of our complete suite of products.

Conclusion:

In conclusion, what does all this technology mean? It means that Orbis Online can fulfill our mission of solving the two biggest problems that face businesses and governments today. We can help them save money by providing the e-commerce solutions they need to stay competitive and by enabling them to build business webs that plug the holes in their supply chain. Bottom line, we give our customers what they want, when they want it, in real time.