

## Catching the E-commerce Wave

Start planning your e-commerce site now, or you'll be all washed up.

By Eden Remme Watt

**H**ave you made that all-important transition to e-commerce yet? What's that you say? You're too busy working on your application development backlog? Sure, your plate is full, but that doesn't mean you should ignore this lucrative new business medium. Although it's typically a company's executives who make the decision to go the e-commerce route, IT must still come up with the technology recommendations – and ultimately it is the IT department that is responsible for an e-commerce site's successful implementation.

If you have not been directed to create an e-commerce solution before now, chances are you will soon. Why? I could rattle off statistics that show the exponential increase in e-commerce transactions over the last few years and projections for the coming years, but you've probably seen them already. I could also discuss industries that are moving into the e-commerce arena in full force and the

effect this shift is having on competitors that are not keeping up. For example, as the electronic travel business booms, travel agents who don't do business on the Internet are disappearing. Some industries are further along than others, but one thing is clear: Every industry is moving toward this new medium. Because of this fact, I focus on specific strategies and objectives for bringing your business into the e-commerce marketplace. That way you'll be prepared for the day you receive that e-commerce directive.

In working with clients to build AS/400-based Web sites over the past several years, I have seen many reasons for such an undertaking. Some companies are anxious to deploy e-commerce sites because they recognize possibilities for cost savings on business processes as well

as new revenue opportunities. Other organizations see their competitors offering new and exciting services that customers will soon expect of them, and these organizations decide that they can either jump on the bandwagon or be left behind.

Because the terms e-business and e-commerce are frequently tossed about, a definition for each would help. Both indicate Web-based business applications. *E-business* is the broader term and, in IBM's definition, represents applications deployed via intranet (within a company), extranet (from business to business), or Internet (to the general public). *E-commerce* is a specialized subset of e-business and describes mostly extranet and Internet systems focused on financial transactions and partnerships. In this article, I concentrate primarily on e-commerce site goals.

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## E-commerce Goals

To give you a closer look at the goals organizations are attempting to realize via e-commerce sites, I should first review some objectives that various organizations have come up with. All of the organizations were mandated to implement or enhance their e-commerce sites this year, and all were committed to deploying their sites on an AS/400. The following are goals that have been identified, in no particular order, by various organizations during the feasibility and planning stages for e-commerce projects:

- To provide order entry capabilities for customers in a shopping cart interface over the Web that is similar to, or functionally richer than, that of the prevailing competitor
- To deploy the e-commerce site prior to a preplanned date for announcement and demonstration during an industry conference or other special event
- To provide a specialized search engine over the corporate data warehouse that will turn the company into a major information source within its industry
- To implement current applications' functionality in a browser-based offering so business partners can access the company's systems directly to improve productivity and multiple entry
- To provide a single point of order entry so orders received in-house and those received over the Internet can be entered in the same place
- To work with business partners to sell related offerings over the Web via ad banners, links from search engines, or complementary promotions
- To employ consulting firms to produce the site as quickly as possible with subsequent transfer to internal IT staff for maintenance and future phases
- To provide the company's product catalog over the Web for customers and prospects
- To enhance or redevelop the current e-commerce site,

which runs on a third-party hardware platform, so it integrates in an interactive manner with customer and order histories as well as the latest product pricing information

- To allow access to particular application functions and international offices without having to deploy special software or hardware at the company's site

Intranet sites can have different purposes: making applications more accessible to employees, providing employees with simple integrated interfaces over complex business systems, marrying disparate applications (possibly on different platforms), and offering employees new services such as human resources functions. But, this is another topic.

In addition to providing access for existing customers and business partners, objectives of extranet sites include increasing productivity in business processes, automating current business transactions and putting them in the hands of partners or customers, offering



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competitive services to customers, and creating new business opportunities.

Internet sites typically aim for Web presence, lead generation, full e-commerce retail capabilities, and becoming information sources or portals within given industries. Sophisticated, popular sites can lead to

new revenue opportunities, such as advertising and partner alliances.

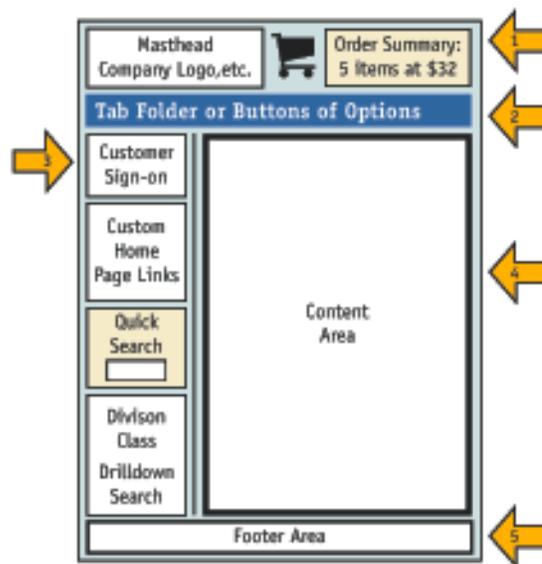
Addressing the integration and interoperability between your e-commerce applications and your core legacy systems is important. If yours is an AS/400 shop, the most sensible thing to do is to add your e-commerce systems to your AS/400. Leveraging existing business intelligence is key.

## VAI's E-commerce Shopping Cart Module

Vormittag Associates Inc. (VAI), an application software vendor on the AS/400, has an application suite called System 2000 that offers modules in accounts receivable, accounts payable, general ledger, order entry, sales analysis, inventory management, purchasing, manufacturing, job costing, and electronic data interchange (EDI).

A number of VAI's customers had requested an e-commerce module that interfaces with System 2000 order entry, so VAI plans to unveil its System 2000 e-commerce module first at its 1999 Dealer Conference in Las Vegas in early August and then at its user conference in October. For this reason, VAI has become a LANS A Solution Partner and is developing its e-commerce module using LANS A for the Web.

VAI's new e-commerce module will be sold with its current application offerings. This new module is required for a number of reasons, including customer demand, expectation of new opportunities, and competitive pressure.



**Figure 1:** The architecture of the System 2001 e-commerce pages is fairly typical of many Web shopping cart sites.

These were the primary objectives of VAI's e-commerce development project:

- To provide shopping cart-style order entry for existing customers in the System 2000 Customer Master file and for anonymous Web visitors
- To produce a visually pleasing and configurable user interface that is fully integrated with System 2000 on the AS/400
- To complete the e-commerce module prior to the VAI Dealer Conference



The first step for VAI was a scoping exercise, which clearly outlined the requirements from a functional and integration standpoint. As new requirements or more advanced functionality arose, VAI extended the project definition to include a phase 1 and phase 2. This type of expansion happens with almost every project I work on. At some point, "blue sky" requirements must be deferred to a later phase so the company can meet its immediate objectives.

At the outset, VAI defined its site's architecture and the flow of the e-commerce pages, which is important for any e-commerce project. Figure 1 shows the architecture of VAI's e-commerce pages. Note that graphical design and imagery improves the visual appeal of the pages. The layout is designed for navigational and functional planning:

1. At the top of every page, the masthead for the site shows a summary of ordered items and the company logo, name, etc.
2. Depending on the complexity of the site, the menu bar can subdivide the site into sections, with folder or button links to other areas of the site. VAI decided to allow administrators to identify the top 10 divisions that would appear dynamically on this tab bar. Selecting one of the divisions would then present a Search Category page in which all that division's classes

would be displayed for the selection.

3. The main navigational menu, on the left, has the following sections:

- *Customer Sign-on* allows existing customers who have a user ID and password to sign on to the customer-only site. If a customer is signed on, this area can be used to link to order status with any personalization.
- *Custom Home Page Links* allows links to other areas of the site to be set up here.
- *Quick Search* searches directly over the item master file using a word or number entered by the customer.

A specialized cross-reference file and function in the back-end uses the entered search value to locate the item via item number, customer item number, keyword, UPC, or EAN. The hit list from the search is shown in the content area.

- *Division/Class Drilldown Search* lists all Web-enabled divisions. If the user selects a division, classes for the division expand underneath. Selecting a class triggers an item search, and the hit list appears in the content area.
4. The content area is the main viewing area of the site and is typically refreshed on most requests back to the server. Examples of content area refreshes are home page details, lists of products to order, order summary page, order confirmation, and order status inquiry.
  5. The footer area is optional and may contain the company address and phone number and links to partner sites, the main site, and company brochure-style information.

### Search Engines

Although the term *search engine* is used broadly, most people think only of sites such as Yahoo, Alta Vista, or Lycos when they hear the term. These sites have certainly served an important purpose as the Web has grown; users rely on search engines to help them find their way around the Internet.

Search engines have evolved over the years. The back-end search runs over a database of Web sites that receives input from both Webcrawler software, which collects Web site information, and from users as other sites sign up for the search engines. Sometimes, Web researchers surf the Web only to provide input into these knowledge bases of Web information catalogs. Being found on search engines is big business, and many sites sell banner space as well as enhanced search capabilities for companies who pay extra so users are more likely to find them when they hit these portal sites. Usually, such portal sites provide a variety of search capabilities, ranging from drilldown category-style to full-text. As the Internet becomes an increasingly popular information source, more businesses are

Task Name	2001	
	July	August
Identify goals and objectives for e-commerce site	█	
Perform project scope exercise	█	
Present recommendations; collaborate and finalize project plan		█
Approval to move forward		█
Project design and development activities		█
Site deployment activities		█

**Figure 2:** Before starting with technical development and implementation activities, you need to spend some time formalizing your goals and plans

realizing the value of their corporate information. Although sensitive customer data should never be made available to the casual Internet visitor, other data sources within your organization may have value, such as transportation and shipping data, historical data, business trends, and popular product data such as books or music. In many cases, information within your databanks may interest the general public but could be valuable to others in your industry.

Consequently, we are seeing the next stage in search engine development: search engines that provide access not only to other sites on the Internet but also to data that has never before been available. Visionaries in many industries are seeing possibilities in making this type of corporate information available on the Internet. Web traffic on a site is similar to Nielsen ratings for television: The more people who come to your site, the more potential there is to sell advertising space to other vendors or partners in your industry.

Typically, ad banner sales and commissioned partner links become revenue opportunities as more visitors are drawn to a site. Future plans for search engines may involve new applications that will provide added value for visitors and, therefore, have them visit more often. The following could be objectives for such a site:

- To provide a powerful yet easy-to-use search engine for consumers on the Web
- To work with partners to integrate related offerings into the search engine by providing links on the search results page that are customized to each hit as well as providing various banners
- To become a main source of information on the Internet for a given industry, facilitating future growth into other areas

### Planning Steps

To start your e-commerce project, I recommend that you formulate a timeline (Figure 2) to carry out the following steps:

**1. Identify your organization's goals and objectives.** For your e-commerce site, it is important that these are communicated and agreed upon by executives and marketing. If the objectives are not stated

**3. Present the project plan, goals, budget, and scope to the owners.** Distributing a document and assuming everyone will read it is not sufficient; more effective is bringing the various



correctly, efforts will probably be wasted. **2. Spend time on a project-scoping exercise.** The exercise can be a couple of days or a couple of weeks, depending on the size of the project, and should result in a statement of objectives and a statement of requirements, including identification of integration points, the database to be used, and recommendations on basic architecture, pages (if possible at this point), and preliminary timelines and estimates.

parties together to review the findings from the project scope. New information may come to light during these meetings and cause another iteration. You must make sure everyone agrees on what needs to be implemented in the first phase and what should be moved to a later release. **4. Gain agreement to move forward.** This may involve signing contracts with vendors to purchase software or services to develop your initial site or may be a verbal agreement to start the project. →

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5. *Project design and development activities.* Orchestrating the design and development activities and plans is complex. (I covered some of the issues involved in this area in “Blueprint for E-commerce Success,” in the previous issue of TUG/400 – May 2001.) Again, depending on the size of the project, there are often more detailed analysis and design phases in addition to actual construction.

6. *Implement site deployment activities.* This is also a broad topic outside the intended focus of this article. Keep in mind that if you do not currently host your Web site on your planned platform for the e-commerce site, you may have a lot of work to do, and planning is important.

### E-commerce Now

Requirements for an e-commerce site can vary from extranet business systems to shopping cart sites to specialized portals and search engines on the Web. Setting goals for your site can help to make you successful. When you are told to move your company into e-commerce, make sure you clearly understand your organization’s strategic direction and its immediate objectives with the site. This is particularly critical. You can play with tools and technologies and slap together a Web site, but that may not be sufficient to meet the expectations in your organization and within your customer base (or intended audience). Time spent clearly defining the goals, requirements, and functionality of your e-commerce site will be worth the effort in the end, but you must start now – if you want to produce a site that lives up to the high standards that your competition may have already established. 

**Eden Remme Watt** is services director for LANSA, Inc. in eastern North America. She is responsible for a large staff of consultants who develop AS/400-based native, client/server, and e-business applications for clients. Eden has been involved in the design and management of significant Web-based systems for the AS/400. You can reach her at [eden.watt@lansa.com](mailto:eden.watt@lansa.com).

# TUG Crossword #1

By Vaughn Dragland



Vaughn Dragland

I know it seems like forever since the May issue of this magazine was distributed; but if you recall, I published my first attempt at a crossword puzzle in it. It was amazing how much feedback I received! I never knew how many people were willing to waste so much time on something so trivial.

For me it was much more of a challenge to create a crossword puzzle than it ever was trying to solve one. In many ways it reminded me of writing code. For example, there are strict rules that must be adhered to; one small change can have a devastating ripple effect; and if you make a stupid mistake, there are lots of cruel and nasty critics out there, just waiting to humiliate you. For example, here is a note from one of the readers. “Editor: I managed to

*finish the crossword puzzle in the May 2001 magazine, though I must quibble with its creator – Federico Fellini has two L’s in his surname (9 Down). And as for the former president of Syria (1 Across), I’ve always seen it spelt Hafez Assad - two S’s. However, I will graciously decline any offer of a refund.”* -- Regards, Miles Jenkins.

All I can say is – if you guys are so smart, why don’t you try making some yourselves! Send me your original crossword puzzle and I will publish it here. (The solution to the puzzle in the last issue is shown below.) 

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