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If it is true that a year in Internet time is only two months, then it becomes critical for everyone in the business world to stay updated on the latest trends in ecommerce. In this month's column, Merrill Warkentin enlightens us on four new trends that are beginning to develop. The first is the evolution of eServices firms, companies that provide support for major enterprises engaged in ecommerce. The second is the development of new brick & click strategies for more traditional companies seeking an ecommerce presence. The third is the development of voice portals that will replace some of the business currently conducted in a more cumbersome way over the phone. The fourth is the emerging world of devices and appliances communicating with one another and the Internet without user facilitation. Merrill's column is an interesting and exciting introduction to some of the new trends in ecommerce that all business and IT researchers will want to know.

## The Next Big Thing in eCommerce

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First it was "disintermediation," then "B2B eCommerce" (business-to-business electronic commerce), and then "M-commerce" (Mobile commerce—accessing the Web via wireless devices, such as PDAs and Web-enabled cell phones). What's next? It seems like we are always chasing the next big thing, and investors (especially daytraders) seem to give these trends a half-life of two months! However, some of these evolving developments will endure and contribute to the mosaic of successful eCommerce technologies and strategies. So what's really new in the world of electronic commerce? There are many exciting developments, but in this essay, I want to focus on (1) B2B eServices, (2) new retail brick-&-click strategies, (3) voice portals, and (4) A2B and D2D systems.

in these new "electronic facilitation sectors," whose services contribute to the overall value chain and enableetailers and others to achieve rapid growth without the need to learn and implement many of the processes necessary to build their business.

I have identified over 30 emerging industries that did not (indeed, could not) exist prior to the last few years, which support and enhance eCommerce through 3rd-party value-added services, often in a way that is transparent to the buyer or seller. These include such industries as digital content syndication (iSyndicate.com), content delivery optimization (Akamai.com), adserver networks (DoubleClick.com), third-party payment processing (PayPal.com), realtime Web traffic data mining (WebTracker from Sane.com), affiliate management systems (BeFree.com), and digital wallets (CitiWallet.com) (Sawhney & Kaplan, 1999; Tedeschi, 2000; Warkentin et al., 2001).

Let's focus on the eServices industries that have emerged to support just one type of online economic activity. Online auction businesses are both a B2B and a C2C phenomenon. Auctions have captured the interest of individual consumers and researchers alike. eBay is perpetually one of the most visited sites on the Web, and is one of the few "pureplay Internet companies" to be profitable. With limited competition from Yahoo! Auctions and from



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### Changing the focus to B2B eServices

Within the field of B2B eCommerce, the focus continues to change. The initial focus was clearly on the role of eCommerce technologies in facilitating a more efficient and flexible supply chain management function, including eProcurement. A more fascinating B2B phenomenon is the emergence of eServices firms that have arisen in the last few years to provide business infrastructure for the more visible B2C and B2B businesses. New Economy firms often focus on their core business and outsource other business processes and functions to firms

Amazon, eBay owns the auction segment. The eAuction buyers (bidders and winners) and sellers (individuals and businesses) are avid users and strive to maximize their gains from this trading community. Sellers on eAuctions may be individuals who wish to sell "garage sale" type materials, or they may be small businesses using the online auction as their primary marketing channel. The eAuction has enabled thousands of new businesses to flourish, creating many new millionaires in the process.

An entire industry has emerged to assist these sellers with the management and promotion of their individual auctions. With keen competition for buyers' attention, sellers must differentiate themselves. One method is to enhance their product description with digital imaging. One of these services, called iPix.com's PIXcast™ Network, now serves over 10 million image views daily and over 500,000 new listings weekly on eBay. Other industries that support the seller include the online appraisal service (eppraisals.com) and firms that will facilitate the bid management and tracking, such as auctionhelp.com and andale.com. Other sites help sellers with payment processing (PayPal.com) and creating "virtual storefronts" (auctiva.com). Auctionwatch.com provides sellers with image hosting, counters, shipping, payment, and insurance services, and will manage, launch, and track auctions in one place using Auction Manager.

On the other hand, eAuction buyers also benefit from new third party eService providers who facilitate their activities. There are fraud insurance providers and online complaint services to help identify and avoid the "few bad apples" in this space. Auction portals, such as auctionwatch.com, help buyers find items from hundreds of auction and fixed price sites, and can track the buyer's bids and coordinate payment and shipping. Product searchers (BidFind.com) and bidding tools (BidLand.com) help buyers find the best items at the best price. (eBay has tried to stop some of these services from operating.) Finally, there are third-party escrow services (TradeSafe.com) to minimize the risks from auction participation.

### Inventing new brick-&-click strategies for retailers

Another area of coalescence is the development of a host of successful new "brick and click" strategies by traditional retailers that leverage the best features of their online stores with those of their physical presence. We've seen a major retailer shake-out in the past year. Many of these direct consumer marketing firms, flush with big bucks from venture capitalists, tried to establish their brands and grow while they figured out how to achieve profitability. However, many could not do so quickly enough and the cash ran out. But a few have persisted and many of them are entering into partnerships with traditional retail stores, while other "brick and mortar" stores are finally implementing mature sites with interesting "brick-and-click" features.

Amazon.com is known as the premier site for creating sales through customer intimacy and customer relationship management (CRM). Their expertise also extends to online order fulfillment efficiency, characterized by extensive information for the customer, such as order tracking. Amazon.com provides visitors with unique links, such as *Top Sellers*, which provide the most popular products, and *Back to Basics*, which provides a list of classic toys. Visitors can also register online, create a user profile, and submit a wish list. The company keeps track of customer purchase histories, and sends purchase recommendations via email in order to retain its customer base. Amazon also provides very detailed product descriptions and includes product ratings in order to help consumers make informed purchase decisions. These efforts usually result in satisfactory shopping experiences and influences customers to return to the site. Amazon cites their high percentage of repeat business from loyal customers.

Toys'Y'Us, backed by 40 years of experience, is known for its extensive product selection. It also has the knowledge of the toy industry, including a deep understanding of the market, tastes, and suppliers. It has strong B2B supplier relationships and a well-developed inventory system. Recently, Toys'Y'Us formed an alliance with Amazon.com for selling toys online. Before the deal, Amazon had failed in the

toy business because it lacked the strong B2B supplier relationships with toy manufacturers—it could not get the best toys and did not know how to manage inventory against the demand (Karpinski, 2000).

The toysrus.com subsidiary of Toys'Y'Us also had problems. It could not figure out how to effectively manage a direct-to-consumer distribution center or how to balance its retail stores business with its online business (Karpinski, 2000). During the 1999 Christmas season, both Amazon.com (pureplay retailer) and Toys'Y'Us (traditional retailer with a new Website) exhibited substantial failures in their ability to profitably deliver toys on time to families for Christmas. Amazon.com miscalculated inventory requirements in toys, and was left with millions of toys it had to write off. Toys'Y'Us badly bungled the operations side of creating a Web site able to handle large traffic and shipping orders. They couldn't execute their Web business effectively due to a lack of experience with both the front-end design and the back-end order fulfillment processes. As a result, one in 20 children failed to get presents in time for Christmas from Toys'Y'Us.

After bad press, lost business, and fines, these two companies decided to combine efforts for the 2000 Christmas season. They pooled their expertise to form a single online toy store. The alliance allows these two partners to leverage each other's core strengths (Schwartz, 2000). Under the ten-year agreement, Toys'Y'Us will identify, purchase, and manage inventory, using their parent's clout to acquire the hottest selection of toys. Since Amazon.com has a distribution network with plenty of excess capacity and a solid infrastructure, it is responsible for order fulfillment and will handle customer service. It applies its expertise in front-end site design to build a powerful customer-support environment. Revenues are split and risks are shared.

This is an innovative model, but there is much work to be done. The two companies must coordinate disparate systems—operational, technological, and financial—as they merge their corporate cultures. If they succeed and execute this strategy successfully, this kind of partnership could be the model for the future of retailing.

Another brick-and-click tactic is for traditional brick-and-mortar stores to provide extensive information at their Web sites (product comparisons, inventory availability, etc.), and then allow the customer to complete the sale online, but either have the physical goods shipped via common carrier (often with an additional shipping charge, but with no sales tax) or pick up the item at a local physical store (quicker, no shipping charge, sales tax charged).

I used this approach when purchasing a DVD player recently. I used the Web to determine that there was only one DVD player that would also play my MP3-encoded CDRs, and after comparing that model's features with other models at CircuitCity.com, I completed the purchase by providing my credit card and other information. I then printed out a confirmation and later drove to a nearby Circuit City store (the Web site has a store locator, of course), where the item was waiting for me at the front desk with no waiting. I simply showed the confirmation and one picture ID and walked away with my new toy. (Of course, I could have also returned it or exchanged it at that store or any Circuit City store if there had been a problem.) In contrast, toys purchased online from the new Amazon.com/Toys'Y'Us alliance cannot be returned to your local Toys'Y'Us physical store.

There are many new variations on the brick-and-click strategy. The Las Vegas Home Depot now allows you to purchase your gardening supplies online and pick them up at the store. (Shipping costs on 100 pounds of mulch might be pretty steep.) We will undoubtedly evolve toward a widely accepted set of services that consumers will expect from all retailers, using the Web to ease the burdens of all phases of the purchase cycle, from comparison shopping to payment to delivery and after-sale service.

### Interacting with voice portals

Many of us now carry Web-enabled cellphones or PDAs, but the input/output technology of these devices leaves something to be desired. These WAP-enabled devices (or iMode devices which are sweeping Japan in record numbers) have tiny screens and constraining keyboards or pen input. Once the next generation of software

and specialized chips for speech recognition and synthesis rolls out, we will find that we can easily interface with our PDA, phone, car, and PC just by speaking and listening.

But we can actually interface with the Internet that way now, as long as we have a telephone. A number of new services, most notably Tellme.com, now offer voice portals to the Internet. By calling a toll-free number and using voice commands, you can retrieve traffic, restaurant, movie, and weather information. You can also receive stock prices, driving directions, and news—you can even dial your friends and associates by simply saying their name. Or if you get bored waiting for your flight, you can play a game of 21 against the Tellme dealer by saying "Blackjack." These voice portals will soon be the primary way we interface with our favorite Internet sites to get messages and information, especially when we are on the move.

### Communication between devices (A2B and D2D)

Finally, let's talk about the real future of the Internet—not just as a network for connecting *individuals* into communities, and companies into trading exchanges, but as a conduit for rationalizing all the systems upon which we rely. Appliance-to-business (A2B) and device-to-device (D2D) communication networks will have a huge impact on our lives in ways we have not yet envisioned.

We wake up in homes heated because of the power grid or gas pipeline system, we drive to work (or take subways) in complex traffic systems, and we use communication networks that automatically route our calls and data efficiently. Yet the real potential for greater connectivity in these systems has not yet been realized, and most of the technology we use is not connected. Our home appliances are islands of technology, as are most of our home heating and air conditioning systems, building security systems, elevators, cars, handheld devices, and running shoes. All of these devices and more will someday be connected through simple, ubiquitous, wireless IP connection technology, providing us with greater information, better services, and more efficient systems (Tarasewich and Warkentin, 2000). This is

the promise of the coming D2D revolution, and it will affect us in countless ways.

For example, within a decade, I believe many of us will drive to work along a dramatically improved road network that is rationalized by a giant citywide client-server system that utilizes Internet-enabled sensors and wireless communications devices embedded in roads and mounted on traffic signals. We will spend less time in traffic and less time waiting for red lights because of the efficiency gains from this information exchange. (I'd like to buy the stock of the company that gets the coveted contract to equip Los Angeles County with tens of thousands of these devices, and thereby becomes the market leader in a nationwide build-out of this technology.)

Our refrigerators and other appliances will independently inform manufacturers or maintenance companies when they're about to break down or perhaps will inform the eGrocer when we're getting low on milk or eggs. This A2B capability may simplify and enhance our personal and work lives in ways we have not yet conceived. One company has called this "transparent commerce" (Charny, 2000). Recently, ICANN has created a new numeric set of IP addresses that may be used strictly for devices or appliances, paving the way for a future where we have Internet connectivity with all points of information and control in our homes, offices, and streets. New algorithms are capable of enabling secure broadband communications between devices more distantly than before. And when combined with Bluetooth, 802.11, G3, GPS, and other technologies, many new services are sure to evolve that promise to make our lives more pleasant, safe, and secure.

Runners in the Boston Marathon now have little chips in their shoes that provide data to sensors that help inform fans and race officials. Maybe my own running shoes will soon have tiny devices that capture and broadcast valuable information about my location, pace, and biometrics as I run through the woods south of Boston. What we know about the network effect is that the real benefits will come when *all* these devices can be interconnected in a secure, expanded Internet, so that more digital *content*, *commerce*, and *community* can be created and leveraged for the betterment of our lives.

Are these four trends simply fads that will follow the way of 1999's "dot bombs," or are they part of an exciting technological dawn that will enhance companies' abilities to provide real services to consumers? Only time will tell. Sometimes good technologies fail for legal or market reasons. Witness Betamax and maybe MP3. Sometimes inferior technologies evolve into the standard and are with us for many years. Witness the NTSB television broadcast signal standard, already inferior when the U.S. Congress adopted it in the 1940s, and still with us until 2007 when it will finally be replaced by HDTV. We can't say for sure what the future will be, but we know it will unfold with amazing new wonders. I believe the Internet's real potential has not yet been realized. What will be the next big thing?

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## Placement Services Coordinator Vacancy

*Submit applications by April 1, 2001*

The Decision Sciences Institute annually operates a web-based database which provides recruiting information for both applicants and academic institutions searching for faculty. The Institute is seeking a new placement coordinator for a three-year term beginning after the 2001 Annual Meeting in November. At the present time, all placement activities are conducted with the support of the University of Colorado at Colorado Springs, with the accounting aspects conducted by Institute staff.

The placement service is concerned with the establishment and maintenance of a database that contains both applicant and position information. Currently, the database is maintained on the DSI Web server with updates performed locally and sent to the DSI server via FTP. The database is maintained and the web pages generate with Microsoft Word '97 using mailmerge and macros. Advances to this technology, while still preserving the level of service, are encouraged.

Another important activity is the coordination with the publications coordinator of the mailing of the data entry forms and the publication of the annual placement directory. Data entry is at various stages of

automation and still requires the largest commitment of clerical time by the placement coordinator's support staff.

A final critical duty is the coordination of the placement activities at the annual meeting. Such duties include working with the local arrangements coordinator to secure equipment and space, working with the DSI staff to arrange times and supplies, and ensuring the smooth operations of the placement area.

### Items to submit

1. Curriculum vita
2. Statement of activities and service provided to the Institute
3. Statement of interest and availability to serve a three-year term
4. Statement of qualifications and experience related to the position
5. Description of institutional commitment for the support of the coordinator's job functions for a three-year period.

Additional information may be secured from the current coordinator, Gary Klein, at (719) 262-3157 or [gklein@computer.org](mailto:gklein@computer.org). All interested parties should

submit the items listed above by April 1, 2001, to:

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