

There's A Rush To Be The Web Host With The Most

INFORMATIONWEEK

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Future Format

**What shape will E-marketplaces take?
The electronics industry is about to find out.
See Redefining Business inside.**

Digi-Frame got parts fast from an online exchange, says engineer Lewin Edwards.

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REDEFINING BUSINESS

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Lewin Edwards says startups such as Digi-Frame are better off bypassing local distributors and buying their components online.

E-Market Experiment

With nearly 50 online exchanges, the electronics components industry will test whether E-marketplaces can truly transform an industry



Lewin Edwards hates talking to electronics distributors. Digi-Frame Inc., the digital photo album company where he works as an engineer, isn't a big-name company that distributors bend over backward to help. So when Digi-Frame recently began running low on an essential component—flash chips—Edwards turned to the Web.

With the supply of flash chips getting tight and prices rising, Edwards went to QuestLink.com, one of several online marketplaces for electronics components that he uses to research and find parts. QuestLink.com offers information about parts and the ability to buy them online. Within minutes, he had generated a short list of potential suppliers and used the information to strike a deal with a supplier in Asia, where the Port Chester, N.Y., company does all its manufacturing.

Edwards liked everything about the deal: The price was \$8 a chip, about \$5 cheaper than Digi-Frame's regular suppliers, and it spared him weeks of phone calls and faxes to distributors. "If you go to a local distributor, you're assigned a very junior salesperson who doesn't know anything and isn't interested in your business," he says. "For any company that isn't a household word, it's hard to get a response out of them."

Edwards' experience shows why the electronics components industry has

ELECTRIC

Nearly 50 E-marketplaces are trying to reshape the volatile market

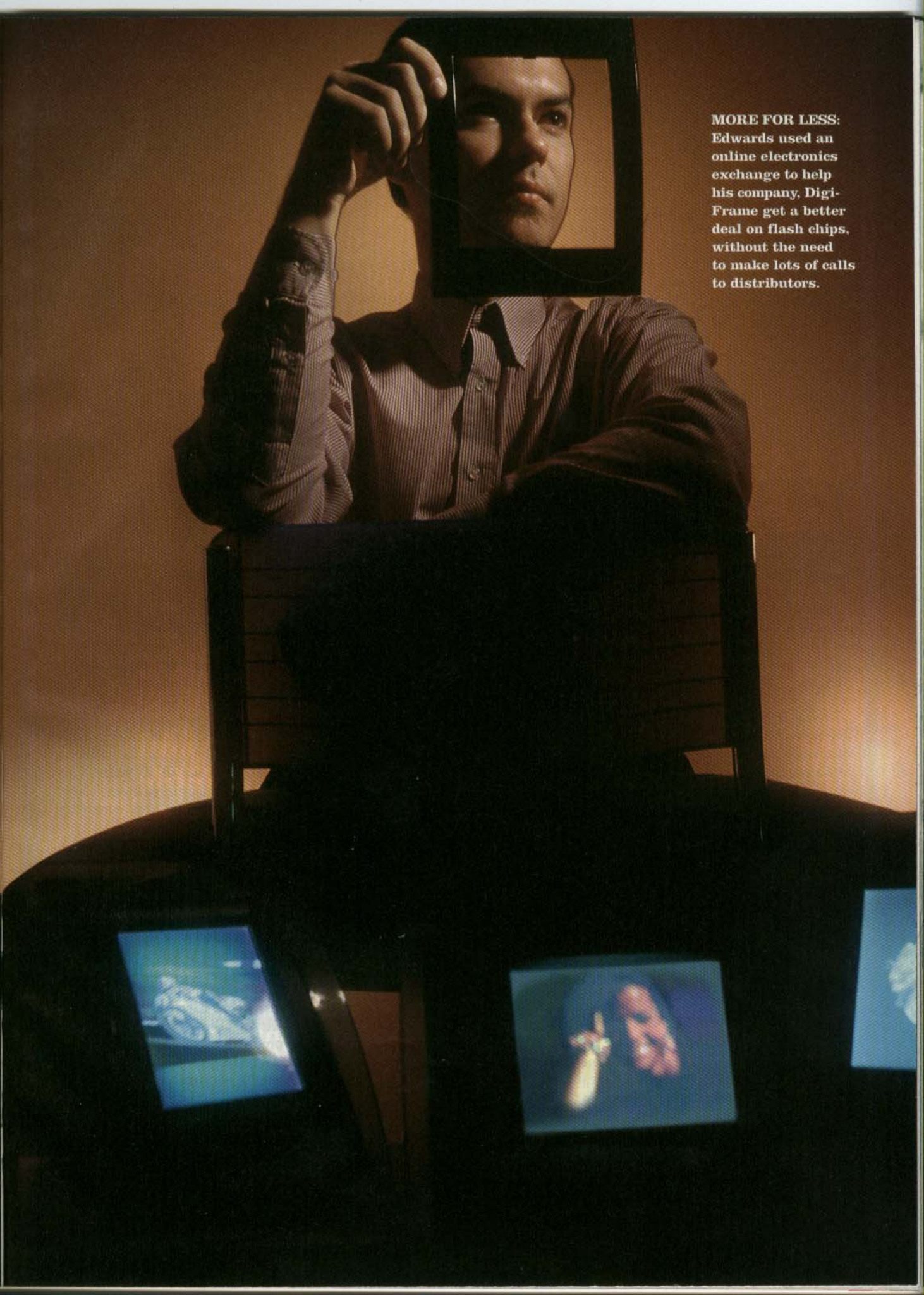
for electronics components. They've still got a long way to go.

SHOCK

been flooded with nearly 50 online marketplaces. It's a volatile, cyclical industry served by a complex web of thousands of manufacturers, suppliers, distributors, and brokers. Products must be developed quickly and can become obsolete just as fast. It's a broad market that serves computers to consumer electronics, home appliances to telecommunications, automotive, to aerospace equipment—where shifting market demand causes frequent shortages and surpluses of supply.

That makes it an ideal laboratory to look at the different online marketplace business models that are emerging. The potential is there: Forrester Research predicts that by 2004, the high-tech industry will sell \$593 billion of goods via the Internet, with nearly three-quarters of that funneled through high-tech E-marketplaces. Those kinds of numbers mean it's more than just startups like Digi-Frame that are taking notice. Some of the world's largest high-tech companies, including Compaq, Hewlett-Packard, and IBM, are using and building online marketplaces, as are major distributors and brokers. The virtual land grab has created one of the most crowded and competitive online marketplace

Chris Wade



MORE FOR LESS:
Edwards used an
online electronics
exchange to help
his company, Digi-
Frame get a better
deal on flash chips,
without the need
to make lots of calls
to distributors.

arenas. How it shakes out will not only reshape the electronics industry, but also offer a clue as to what marketplace business strategies will work in other industries.

Infomercial And Matchmaker

One vision for E-marketplaces is equal parts infomercial, Webzine, and digital matchmaker. Called ChipCenter, it was founded by distributors that recognized they didn't do a good job serving small companies like Digi-Frame. Commission-based systems tend to reward salespeople for closing large deals and taking care of large accounts. To better serve the smaller end of the market, two major electronics distributors, Arrow Electronics Inc. and Avnet Inc., last year formed ChipCenter as an online resource for electronics engineers, focusing on original editorial content and information about products available through participating distributors.

ChipCenter doesn't hide its affiliation with distributors. In addition to technical information about products they offer, it provides links to their inventory and refers all purchase inquiries directly to distributors. The site doesn't offer auctions, requests for quotations, or other negotiation tools that might pit distributors against each other in an open, price-crunching situation. "For the franchise distributors, we serve as a center of demand creation," says Ron Mabry, chief marketing officer at ChipCenter. "Small users may grow up to be larger customers."

ChipCenter has added distribution partners since its launch, including Nu Horizons Electronics, Pioneer-Standard Electronics, and TTI Inc., as well as investments from software provider Aspect Development Inc., and technology publishing company CMP Media Inc. (publisher of *InformationWeek*). With more emphasis on lead generation and less on commerce services, ChipCenter depends on advertising it sells to electronic component manufacturers, as well as a commission on the sales referred to distributors.

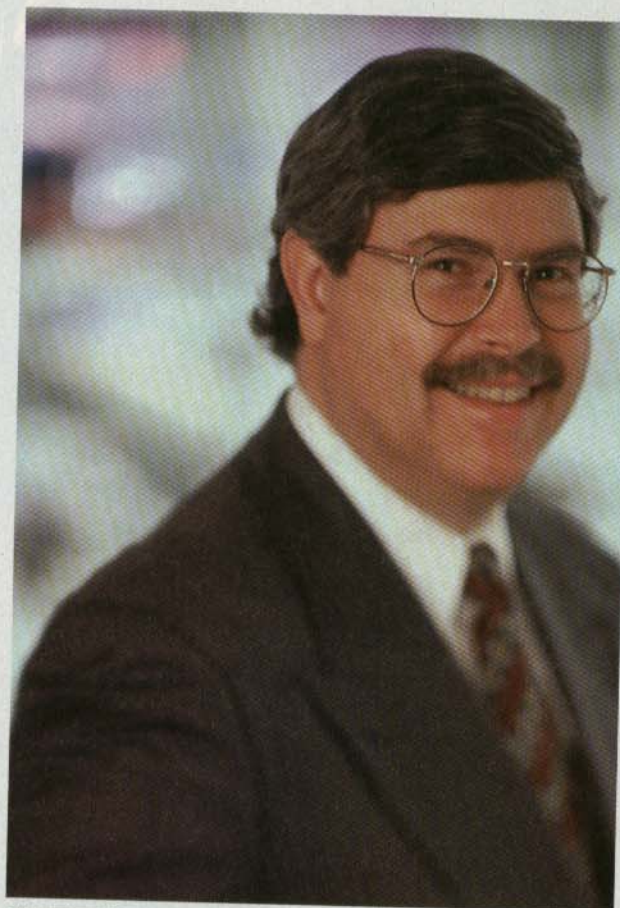
Hank Wallace, an independent consultant and designer of embedded microprocessors, is a typical ChipCenter customer. He uses it to find information about parts, how much they cost, and which distributors have them in stock. For a small operator such as Wallace, ChipCenter can slice weeks off the time it takes him to design new components for his clientele of communications equipment manufacturers. For distributors, it may offer a way to affordably cater to a neglected market segment.

"This whole method of doing business is a blessing for small shops like me," says Wallace. "I talk to a salesperson once every six months, whereas I used to be on the phone every day chasing down parts."

Focus On Rare Goods

Another emerging business model addresses the bane of electronics companies: shortages and surpluses of parts. Thanks to innovation, a fast-growing market, and poor supply-chain communication, manufacturers often find supply and demand out of whack.

Consider Matco Electronics Group, a \$400 million manufacturer of electromagnetic devices used in telecommunications equipment and fuel pumps. On a given day,



SKEPTICAL: Celestica's Uhlich isn't convinced that brokers can use online exchanges to expand their role.

it can have trouble finding 10% to 20% of its supplies. "Our challenge is the allocation of components," says Dana Pittman, chief operating officer of Matco Electronics. "We've enjoyed a glut of inventory in the telecommunications industry for the last six to 10 years. This year, demand increased and manufacturers haven't kept pace. Nobody predicted the economy and consumer demand would be so strong."

The problem of allocating scarce components has given rise to a community of brokers who specialize in locating obsolete, excess, or hard-to-find parts. Two traditional brokers, PartMiner and NECX.com, see the Web changing their industry and are using a hybrid of Internet and traditional brokerage services to avoid being left behind.

The first piece of their offering is fairly predictable: databases cataloging millions of standard electronics components. PartMiner's Free Trade Zone, which opened in June, and NECX.com's Global Electronics Exchange, launched a year ago, each let users search by technical parameters, compare products, and incorporate data about the products into their designs.

To purchase, an engineer is referred to a distributor or broker who finds the part and fills the order, charging a markup on the sale. It's a traditional broker business model dressed up with a Web front end, and both companies know they need to offer more. "Our challenge today is to create online services that are faster and easier than the phone," says Kramich of NECX.com.

PartMiner executives feel their company's greatest

value—and where it will generate revenue—is locating and procuring hard-to-find supplies, a service it calls PartMiner Direct. In that sense, it's not veering from its traditional revenue model at all by moving online. "We don't attempt to provide lower prices than you would find offline," says PartMiner chief technology officer Mark Schenecker. "We fund the site by trying to get the opportunity to serve you in a shortage situation."

For example, Matco Electronics uses PartMiner Direct services to liquidate its customers' obsolete inventory or find out-of-production supplies for legacy products, but talks to PartMiner personnel in person or via telephone for 80% of its transactions; PartMiner, in turn, posts the inventory on its Web site. Matco's attachment to doing business by phone is an indication that many customers aren't willing to move their business online.

PartMiner and NECX.com have not overcome one major obstacle online: Buyers want to negotiate, not pay a listed price.

Kathy Drake, president of Harrington Signal, says PartMiner is valuable as an information source and for finding rare parts, but not for routine buying. Harrington Signal, a \$19 million contract manufacturer for the telecommunications, industrial controls, and medical-device markets, uses PartMiner to gather product information and find discontinued parts, which she says has improved her company's purchasing process by decreasing the time it takes to pull information from many sources and find suppliers. But the company buys most goods offline. "We use them to find availability, then we call suppliers directly to negotiate the price," says Drake. "PartMiner puts prices out there, and the prices are probably legitimate, depending on what level you're buying. If you can offer vendors volume purchasing, you can get into a different price bracket."

To enable some price negotiation, PartMiner recently introduced the ability to submit online request for proposals through Free Trade Zone. But it's not placing a lot of stock on the value of that service, which it offers for free while charging for the PartMiner Direct service.

NECX.com, which stands for New England Circuit Exchange, doesn't offer online negotiation or auction capabilities yet, but plans to roll those services out by the end of the year and charge fees for them. An electronics broker since 1980, NECX.com was acquired in January by VerticalNet, which owns and operates 57 business-to-business marketplaces and information

Web sites. NECX.com agreed in July to acquire American IC Exchange, an electronics broker in Aliso Viejo, Calif., to extend its presence on the West Coast.

Today, users of the Global Electronics Exchange can submit requests for quotes and sales offers to NECX.com's trading agents via the Web. The rest of the transaction, including identifying a trading partner and fulfilling an order, happens through NECX.com traders in their offices in Peabody, Mass. By year's end, NECX.com plans to expand its marketplace and



TOP PRIORITY: Matco's chief challenge is to find the right components at a time of increased consumer demand, says chief operating officer Pittman.

business model to enable direct transactions between buyers and sellers via online auctions and request for quotes, with no intervention by NECX.com trading agents. It also plans to provide complementary online services, such as shipping, international logistics, inspections, and integration with client's back-office environments.

However, some remain skeptical that brokers can use online channels to extend their role in the supply chain. Brokers, they say, deal in exceptional situations, not day-to-day inventory management or long-term supply-chain relationships. "They're in the business of helping you with surplus and excesses," says Bernie Uhlich, director of global supply-chain management and E-business at Celestica Inc., the world's third-largest

electronics contract manufacturer. "They don't offer all the capabilities required for planning, communication, auctioning, logistics, and transportation."

Enter The Giants

Celestica manufactures complex printed circuit assemblies used in computer servers, workstations, peripherals, and communications devices for electronics makers such as Cisco Systems, Hewlett-Packard, and IBM. Rather than brokers' exchanges, it's keeping a closer eye on the competing online exchanges being built by industry leaders such as Compaq, HP, and IBM, which promise a shared Internet platform that lets supply-chain partners collaborate on everything from design to forecasts to production.

"It's about creating a community of trading partners online to quickly communicate a change in direction so everyone can take their cue and respond," says Uhlich.

EHitex, an online marketplace formed by Compaq, HP, and 13 other top electronics manufacturers in the United States and Asia, is promising to deliver this kind of broad and sophisticated E-marketplace for the high-tech electronics space. A similar concept is in the works by rival online marketplace E2Open run by Acer, IBM, Hitachi, LG Electronics, Lucent Technologies, Matsushita Electric Industrial, Nortel Networks, Seagate Technology, Solectron, and Toshiba. Each went live with basic auction and quote-request capabilities last month, with plans to do much more.

Right now, however, eHitex doesn't offer much more than NECX.com and PartMiner do—allocation of inventory in shortage situations. Since going live on Aug. 1,

to major suppliers. That's where Celestica is focusing its efforts for improved collaboration and closer customer relationships. "If you want customer intimacy, would you go to Times Square?" asks Uhlich. "At the end of the day you have to establish a one-on-one relationship, and that's easier on a private exchange."

EHitex insists it's not interested in squeezing suppliers solely on price, and points to the participation of suppliers and competitors as proof. "It's not a mechanism for driving price down," says co-CEO Melbourne. "It's about efficiency. Our problem is that we have very short product life cycles. It's about speed and efficiency, not price. Ultimately, it's about inventory."

Three high-profile technology companies are staying out of the online marketplace scene for competitive reasons—Cisco Systems, Dell, and Intel. The companies consider their supply-chain business processes and technology competitive advantages and aren't about to share their secrets of success with rivals. Dell has set up a supply-chain extranet to exchange component forecasts and production schedules with 35 to 40 of its top suppliers, which provide Dell with 90% of its computer components. "We like working directly with suppliers and customers," says a Dell spokesman. "We've opted to stay out of the exchanges. It's not clear whether there's a benefit for us."

With only 250 bidders and 50 buyers registered on eHitex, Uhlich also believes the audience of users and the functional capabilities of public online marketplaces are so far too limited to warrant Celestica's participation. He sees promise in public online marketplaces but likens their development to the advent of air traffic con-

Some high-profile tech companies are staying away from exchanges for competitive reasons.

eHitex has conducted more than 20 auctions for spot buys and contract bids for its founding members.

But even that service can be a life-saver, as Hewlett-Packard recently learned. HP was going to run out of flat-panel displays, putting it at risk of having to shut down its production line. The original supplier couldn't produce more, so HP posted an anonymous request on the eHitex site and located the needed parts within four hours—from a competitor that had a surplus of flat-panel displays. "These people live by their pagers and avoiding down lines," says eHitex co-CEO Keith Melbourne, who formerly worked at HP.

Yet Celestica hasn't jumped onboard eHitex, E2Open, or any other online marketplaces. Celestica is leery of cooperating with competitors and pushing its products toward commodity pricing. Its two largest competitors—Solectron and SCI Systems—are participating in E2Open or eHitex. Celestica is focused instead on participating in private marketplaces operated by its largest customers to coordinate market forecasts, production cycles, inventory levels, design collaboration, and logistics in a closed, private environment.

Uhlich says the open exchanges make every company seem like equals, since they're open to any qualified user. Closed trading communities—such as one run by Dell, for instance, for its supply-chain partners—are open only

to major suppliers. That's where Celestica is focusing its efforts for improved collaboration and closer customer relationships. "You can't put these things in place overnight," says Uhlich. "We still need standards, consistent rules, and more participants to effectively create a marketplace."

EHitex is working to broaden its services. It's testing online logistics services to consolidate overseas shipments to cut costs and increase frequency of international shipping. It expects that service sometime in November. It's also working on adding financial services such as letters of credit, and product inspection services via the site, but has yet to name any partners in those areas. EHitex plans to eventually offer hosted supply-chain management, collaborative forecast, and product design collaboration applications for the private use of its members and their direct trading partners. Those services are expected in January or February.

EHitex hasn't selected its software platform yet, which puts it slightly behind E2Open, which is running on software from Ariba Inc. and i2 Technologies Inc. But plenty of work lies ahead for the exchange. E2Open is already live with a parts database and some auction capability, and plans to offer supply-chain collaboration projects this fall. Those projects include a component cat-

alog and applications that allow sharing of capacity scheduling information. EHitex is also planning to expand further into Asia, including Japan, Korea, Taiwan, and Singapore in the next 90 days—important additions, given the global nature of the electronics business.

However, exchange executives understand the challenge of translating their offerings into several languages. "When you get to the level of a procurement department of a Japanese equipment company, there isn't a whole lot of English going on," says Paul Sterne, CFO of E2Open and a former IBM executive.

E2Open and eHitex could help overcome the technical, cultural, organizational, and competitive challenges by rallying enough industry players to join their crusade. By stomping out some of the supply-chain glitches that plague the electronics industry today, it could mean brokers and other companies that thrive on supply-chain excesses and surpluses lose their relevance. Or, it could create opportunity for those brokers, if the industry consortium are not seen as independent or effective.

The buzz factor for business-to-business E-commerce



MONEY MAKER: PartMiner's biggest revenue generator will be in finding hard-to-find parts, says Schenecker.

Buyers aren't likely to do much more than simple parts procurement on these exchanges for the next six months, predicts Forrester Research analyst Navi Radjou. He says supply-chain planning and optimization capability won't be ready via trading exchanges until the first half of 2002, and that the ability to truly collaborate with trading partners on product designs via public marketplaces won't happen until the end of that year.

"It's about building trust," says Radjou. "For your average, conservative manufacturer, you need to test the water. First they'll trade parts and components. Plus, nobody knows how the software will operate in a many-to-many environment. There will be a long trial period before they're ready for prime time."

has tempered, and the industry is testing which sites can really solve problems.

"Earlier this year, people were asking us, 'Why aren't you part of an online marketplace?' Sanity has come back into the picture," says Uhlich of Celestica. "People are asking, 'What is my business problem, and how can these tools help me solve them, and bring value to my customers?'"

Forrester Research predicts that within three years, there will be less than nine E-marketplaces serving the electronics industry, instead of the 50 today. The survivors will be those that have answers for Uhlich's questions. —WITH ADDITIONAL REPORTING BY CHRIS MURPHY

More on exchanges: informationweek.com/804/rbexchanges.htm