Silicon Valley
WORLD INTERNET CENTER

Catching the
eCommerce Wave

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Introduction

Anthropologists claim civilization began in earnest when our hunter-gatherer ancestors bonded together and began to trade with eachother to gain goods and knowledge which couldn't be acquired from one's own tribe. From here it was just a quick jump to forming agrarian societies, villages and marketplaces—all outgrowths of mankind's propensity to try and make things easier.

The advent of today's online marketplaces is really not so different in purpose from those of our ancestors. In fact, it could be argued that online trading hubs, vertical portals, procurement sites, infomediaries, vortexes—and whatever else they are being called—are simply a perpetuation of mankind's seemingly unending quest to make things faster and easier.

What are online marketplaces? In the most simple terms, they are the bringing together of buyers and sellers of product through an Internet environment. Beyond that things get quite a bit more complicated—which explains why there are so many terms being bandied about to try and describe this burgeoning eCommerce space.

In these Proceedings we explore four primary types of online marketplaces as defined in a recent Silicon Valley World Internet Center Think Tank Session on Internet Procurement (see Figure 1). These are:
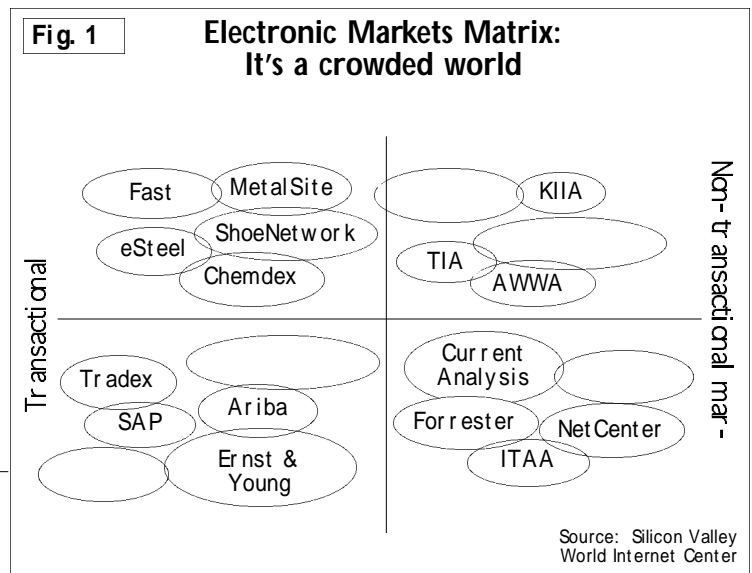(1) Vertical-Transactional Marketplaces,
(2) Vertical-Non-Transactional Marketplaces,
(3) Horizontal-Transactional Marketplaces, and
(4) Horizontal-Non-Transactional Marketplaces.

The paper will further discuss the market dynamics and business models of each Market Type as well as provide short case examples of each marketplace.

History: Business-to-business (B2B) Online Markets

Online markets and their enabling technologies have been around for quite some time, at least in Internet time. The first online markets began appearing in 1995 and tended to gravitate towards marketplaces for technical goods. Also many of these early marketplaces did not have the capability of online transactions. However they did bring together buyers and sellers and shared product, price and availability information.

An early example of an online market was Industry.Net. Industry.Net received a lot of press in 1996 when Jim Manzi, the former head of Lotus, became the

Fig. 1 Electronic Markets Matrix: It's a crowded world

Source: Silicon Valley World Internet Center

major investor and CEO of Industry.Net. For a number of reasons, however, Industry.Net failed. Some say the company failed because it was a closed market (one had to pay to become part of the marketplace), or that simply the underlying technology was weak or that it was simply ahead of its time. Whatever the reason, Industry.Net filed for Chapter 11 in early 1997.[1]

Other early marketplaces like FastParts, made the member-only concept work. Today it is a successful member-only electronic marketplace created to make it easier for OEMs, contract assemblers, component manufactur-

ers, and franchised distributors to buy and sell new electronic components quickly and cost-effectively.

Yet others took a different approach. For instance, Marshall Industries, a mid-tier distributor of electronic components, created a marketplace of its competitors' inventory. In other words, if an engineer came to Marshall's site to look for a component and it was not there, then Marshall would source it from the competition on behalf of the engineer (for a small fee, or course).

In short, there were—and still are—a myriad of business models, geographies, vertical industries all working to build online marketplaces. The difference between

create marketplaces.

There are of course the traditional EDI implementations which have been used to conduct business electronic commerce for decades. However, EDI's penetration into industry remains small. In fact, it has been estimated that EDI is used by only 100,000 businesses worldwide since its inception[2] (see Figure 2). And EDI is not used to create marketplaces—it is utilized to connect suppliers with buyers directly, usually for goods of a strategic nature and usually tied into extremely sophisticated (and expensive and complicated) business systems.
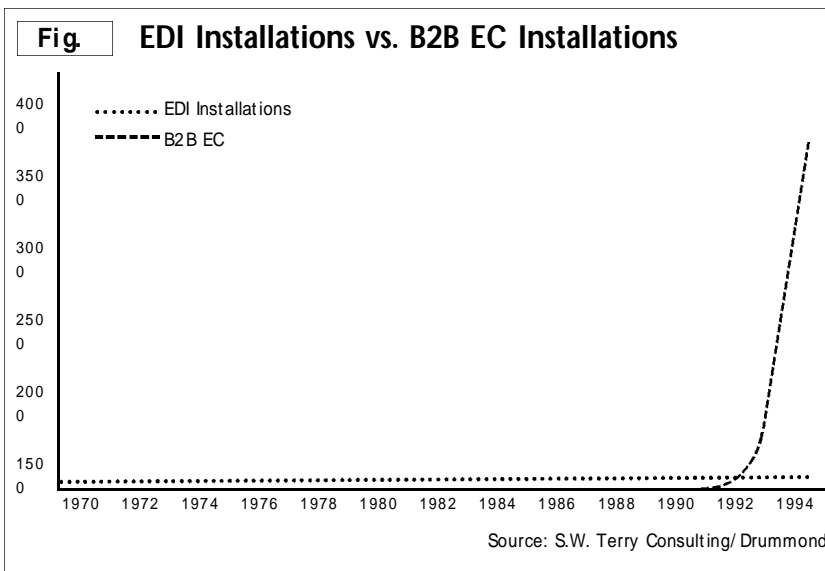
Characterizations: Online Marketplaces

All online marketplaces share some common attributes. Online markets, whether they are of business-to-business or business-to-consumer marketplaces, bring people together who have something with others, who, in turn, want that something. If it is this simple, then why are so many people so excited today about online markets? The simplicity. The value proposition for businesses to get involved in online commerce is compelling. If you are a Buyer, participating in an online marketplace can:

Fig. **EDI Installations vs. B2B EC Installations**

.... EDI Installations

------ B2B EC

Source: S.W. Terry Consulting/Drummond

what we are seeing today and what has been going on for the last three to four years is simply that main-line businesses are beginning to accept and understand the Internet. Beyond that, and the underlying technologies are becoming more stable and easier to implement. Of course we still have some ways to go on both fronts—but a mere five years ago, who could have imagined global dynamic trading communities?

As an aside, one thing to bear in mind is that EDI is also considered electronic commerce—though not Internet commerce—and has not generally been used to

- Provide access to an expanded supplier pool
- Capture contractual supply relationship through automated processes
- Provide a record trail of purchases
- Reduce error
- Allow procurement departments to focus on strategic buying instead of pushing paper
- Reduce inventory and carrying costs
- Reduce "off-contract" buying
- Increase information flow, allowing better business decisions

3

- Gain ability to analyze purchasing patterns, providing business insight

For the Supplier, participating in a marketplace can be equally compelling:

- Gain access to an expanded buyer pool
- Open new channels of distribution
- Enhance capability to serve best customers
- Capture contractual supply relationship through automated processes
- Provide a record trail of purchases
- Reduce error
- Improve production planning capabilities
- Reduce inventory and carrying costs
- Decrease some buyers' penchant for buying on price only
- Increase information flow, to allow better business decisions
- Enhanced logistics and distribution information flow

There is some downside, particularly for suppliers. In the online marketplace, the buyer is king. If one were to do a Five-Forces analysis[3] of online markets, one would see that buyer power shifts dramatically to buyers in the online world. This is primarily due to the transparency of pricing, delivery schedules, and brand/reputation which is easier to discover online. In short, cheap and easy access to information has shifted power to the buyer in the online world.

This was not originally recognized by eCommerce companies, which is why there were so many companies focussed on supply side in the "early days" of electronic marketplaces. These developed to a recognition of increased buyer power and finally to the creation of online markets where both buyers and sellers can come together to exchange goods (see Figure 3).

Vertical-Transactional Marketplaces

Of all the marketplace models, Vertical Transactional Marketplaces (VTMs) may prove to be the most successful. This is because VTMs can address almost any geo-

Fig. 3   Evolving eCommerce Models

Source: Jon Corshen, Tradex
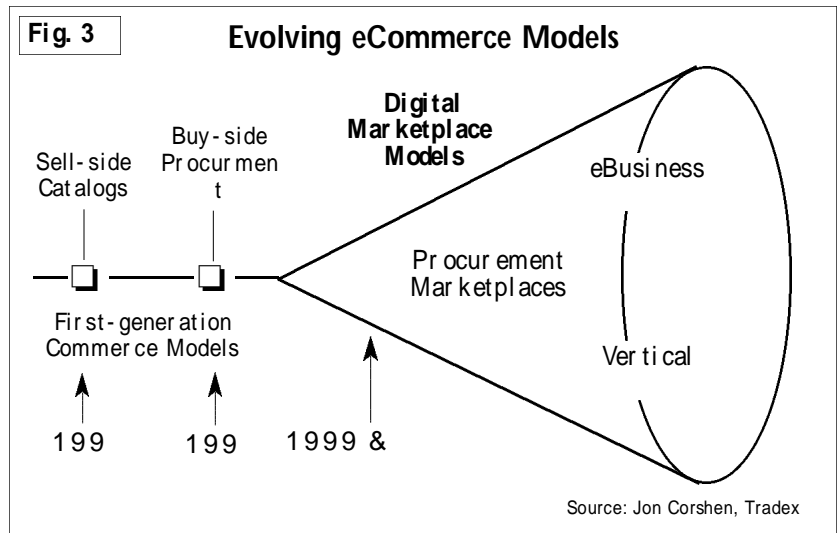
graphic or business sector segment and can be combined with near-infinite variety. This should prove to be quite enticing to entrepreneurs and established businesses alike.

Characteristics

Most Vertical Transaction Marketplaces are very domain specific. The VTM market makers need to know the market players very well. Every vertical market has its own business processes, its own language, its own history and its own way of doing business. VTM market makers should not try to change these processes; rather they need to make them more efficient and provide the participants with as much information as needed. As Jeffrey Leane, CTO and co-Founder of Chemdex put it, VTMs "let you see the entire market without any blinders on."

VTMs are:

- Defined by information flow
- Fragmented supply and fragmented demand
- High domain expertise
- Highly tailored buying / business processes
- Exhibit the quality of "perishable capacity"
- Provide buyers and sellers with solutions vs. products (which can of course include products)

In short, VTM marketmakers have to be expert in

their industry. As an example, Chemdex Corporation, a VTM specializing in the life sciences industry, claims that its bio tech research customers can source all the historical data, DNA, and other varied components necessary to build a specialized "naked mouse" for cancer research. This is in addition to making more trivial items such as beakers and test tubes available to the same researchers (and chemists) through the same interface. Chemdex is clearly a domain expert to be able to provide so much data and the ability to complete transactions for such a wide variety of life science customers.

Other VTMs may be geographic in nature. For instance, the Confcommercio, the Italian Chamber of Commerce, has been exploring how to create a marketplace around inner-city merchants. They are currently being "Walmart-ized" by large department stores which are setting up shop outside of cities. The lower cost and convenience is drawing consumers out of the traditional smaller mom-and-pop shops of the inner cities, which in turn raises the unemployment rate and lowers the tax base.

Confermica is considering creating a Chamber of Commerce-sponsored VTM which would hold inventory, manage logistics and provide other common services to the inner city stores. The stores would increase their information, be able to purchase at better prices, not tie up capital in too much inventory and generally be on a better footing to compete with the European Walmarts.

Slippery vs. Sticky

Furthermore, VTMs are not confined to the business-to-business space. Though the focus of this paper is B2B, a mention of the consumer model is warranted. In the consumer space, mall merchants are concerned with website "stickiness;" that is, increasing the time that consumers stay on a particular site. This stickiness-concern stems from a merchant's desire to:

- Build a sense of community
- Build familiarity/brand
- Increase advertising revenues

In the business-to-business space, market makers are much more interested in making a transaction as smoothly, quickly and efficiently as possible. Revenues come from either service fees or transaction fees—not from advertising, so there is no reason to hold onto the customer any longer than necessary. Also, the market makers realize and appreciate the value of business peoples' time; it is expensive and not to be wasted frivolously.

As an aside, in many non-US consumer online markets, where the cost of connectivity is high, we are seeing the development of slippery consumer models. Here it is the cost of the connectivity that is high (vs. time of business people). Online advertising places a much more muted role in these marketplaces and the site itself is designed for speed and efficiency, i.e., get the transaction done and get off line as quickly as possible. It remains to be seen whether these consumer models will persist as the price of connectivity drops.

Disintermediation

Much has been written regarding disintermediation and the supply chain. Therefore we will only touch on it here. Disintermediation is the act of cutting out low value add nodes in the supply chain through the implementation of I/P-based technologies. This effects every one of the market models we are profiling. However, it is important to bear in mind that disintermediation can happen with any company.

If a company is not adding value upstream and downstream at its node in the supply chain, it will be left out of the chain. Because of the information flow made possible by electronic commerce, it simply becomes easier to recognize and document certain kinds of value. For instance, a distributor may be marking up goods at 25% without

Supply Chain Evolution

Fig. 4

Source: Jeff Leane, Chemdex Corp.
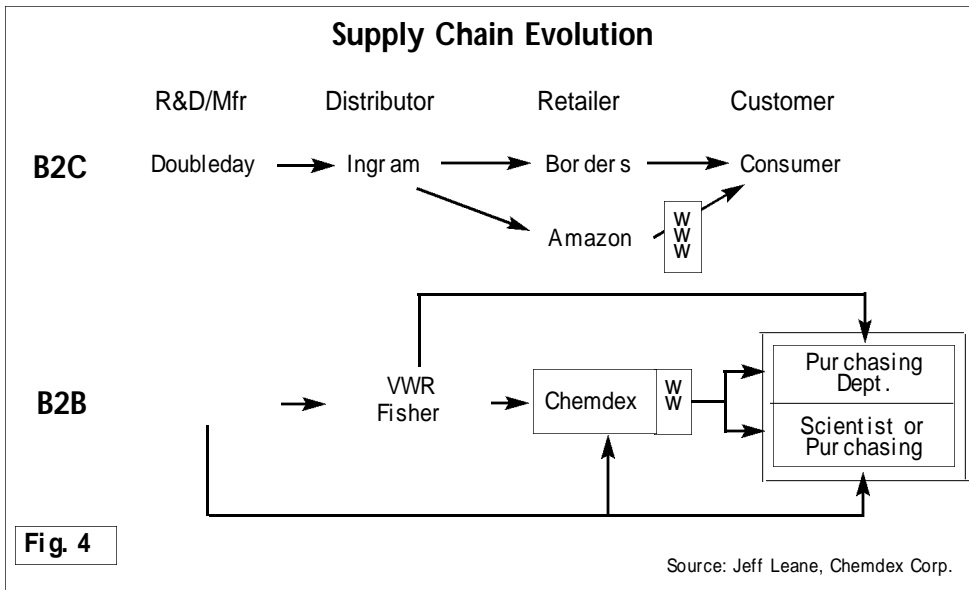
makes sense, in an effort to bring more value to the end-buyer. This means that the most common place that a VTM could disinter-mediate is at the end of the chain—a retailer for instance. However, since most VTMs are bringing together disparate and fragmented information/product streams, there is often no retailer to replace. In short, VTMs constituencies are not overly effected by disinter-mediation beyond the challenges of any business to consistently add value for its customers.

adding any real value except for sourcing. If through an online marketplace a buyer can locate that same product at a 10% margin and gain value added services such as logistics information, the original distributor may well be disintermediated (see Figure 4, below, for how the evolution of B2C and B2B have differed).

What we are seeing, however, is that many companies are finding that they need to add more value in the supply chain to maintain customers. This is only natural. Tea used to be more valuable than gold and there were entire empires built around its sourcing and delivery. Tea has not become less popular—in fact more people drink more tea today than ever did during the age of empire. What has changed is the supply chain and the ability of merchants and consumers to source the best tea at the best total cost of ownership.

Though some middlemen will certainly be disinter-mediated through online markets, others will find a new role, adding value in new ways. This is called "reinterme-diation." An example may be logistics services or insurance and risk management services.

For VTMs, the strategy has typically been to partner with the existing supply chain constituency where it

Examples

There are many examples of VTMs today. Some of the most well-known are:

Company	Vertical Domain	URL
Chemdex	Life Sciences	www.chemdex.com
Shoe Network	Footwear	www.shoe.net
e-Steel	Specialty Steel	www.esteel.com
Metal Site	Secondary Steel Inventory	www.metal-site.com
FastParts	Electronic Components	www.fastparts.com

These companies have all been able to take advantage of the fragmented, information rich, flow poor industries to create online marketplaces. In a recent Think Tank session at the Silicon Valley World Internet Center, participants identified a number of other potential industries which might benefit from the creation of VTMs.

• Film/Movie Equipment
• Human Resources
• Construction
• Secondary Inventory

- Energy
- Commercial Real Estate

Revenue Models

All the companies identified above are privately held and did not wish their specific revenue models to be shared with the public. Therefore some generalizations are in order. There are basically three ways for a VTM to make money. These are:

1) *Charge a Participation Fee.* These fees range from a few hundred to a few thousand dollars annually, depending on the services provided. It has been said that participation fees are counter-intuitive to VTMs, as they exist to provide as much information flow to buyers as possible. Putting up a participation fee is an additional barrier to entry (on top of lack of familiarity with VTMs, cost of implementation, cultural changes, etc.). Therefore, unless there is some strategic reason to remain exclusive, AND the VTM is adding value to justify the participation fee, this revenue approach will likely fail.

2) *Charge a Transaction Fee.* This is the most common revenue generation method. Marketmakers charge either (a) a small percentage of the value of the transaction or (b) a fixed transaction processing fee or (c) a combination of the two. This seems to be the most popular with both market makers and buyers as the total cost of a purchase can be easily calculated and buyers are only charged for what they purchase. Things like information searches are considered value-added services and do not usually generate charges to the user.

3) *Charge Suppliers Only to Participate.* This is a variation of charging all participants to play. Charging suppliers to give them access to an expanded buyer pool has not been implemented on any wide scale yet as the off-line world is still strong and VTM market makers are only now building their marketplaces. In other words, today marketmakers need suppliers to seed their markets—without suppliers, buyers will not come. Therefore, the cost of getting suppliers and their electronic catalogs into the marketplaces is falling to the marketmakers.

It is generally believed, however, that once a critical mass of buyers is in a VTM, then sellers will have a compelling reason to pay to get at this market.
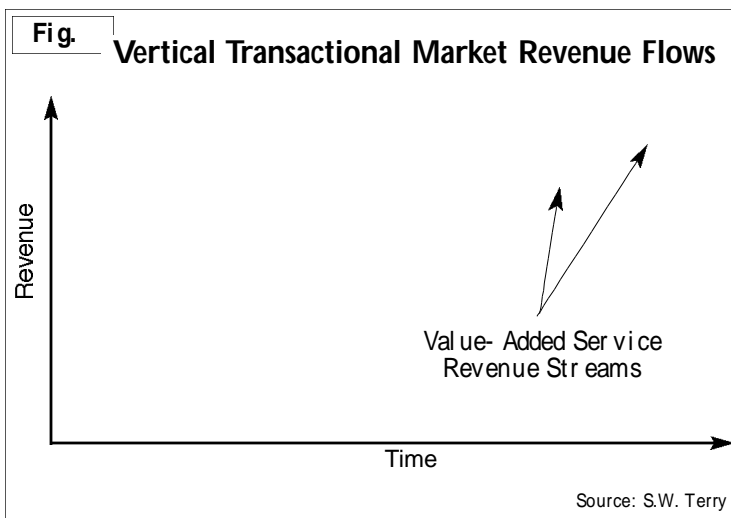
4) *Charge for Value-Added Services.* This revenue source has also not been exploited. However, as the marketplaces mature, there will be opportunities to provide more services to buyers and sellers alike, thereby creating new sources of revenues. Examples may be inventory management, logistics outsourcing, or risk management.

Future Challenges

The success of the VTMs mentioned here—and those yet to be created—will depend on such factors as market acceptance, reduction in implementation cost, high information flow and increased efficiencies. Assuming that VTMs will be successful, how might they develop?

As indicated above, the addition of new value-added services will become a high priority as revenue growth begins to taper off over time (see Figure 5).

As most of these marketplaces are characterized by

Fig. **Vertical Transactional Market Revenue Flows**

Value-Added Service Revenue Streams

Revenue

Time

Source: S.W. Terry

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fragmented, information poor supply chains, perhaps a logical place to look for the growth of VTMs is through commercial business consortia and industry groups. These groups have a familiarity with the players, know the business processes and culture and could serve as a launching pad for a VTM. On the other hand, if these organizations do not get into this business, there is the very real risk that existing VTMs may get into theirs as the VTMs build their value-added services portfolios.

One of the more interesting things about VTMs is that most of them currently do not hold inventory. This allows them to mitigate inventory holding costs and the associated risk. Perhaps as these markets mature, VTMs will take more inventory and more risk—or perhaps "meta-VTMs" will be formed solely for this purpose and provide services, including risk management, to the VTMs themselves.

Whatever the case, VTMs are here to stay. And those that are there first and have learned and "webified" the domain ontology will have a strong competitive advantage over any group wishing to enter that domain in the future. Here, more than in the other quadrants, domain expertise and first mover advantage are key success factors.

Vertical-Non-Transactional Marketplaces

Today the number of Vertical Non-Transactional Marketplaces (VNTMs) is growing, but is still not as rich as transactional marketplaces—and may never be.

Characteristics

As with Vertical Transactional Marketplaces, VNTMs are very domain specific and the marketmakers are considered to be experts in their domain. Also, the VNTM can be a site where industry players can come together to exchange ideas, develop new business plans, or pass along leads.

However, the VNTM is typically not a critically strategic component of a business process. In other words, though domain-specific business information may be aggregated in a VNTM—and valuable in its own right—the information is difficult, if not impossible, to transact upon. Information can be gathered to make a better business decision, but that is not a replicable business process as is buying direct goods, for instance.

With these characteristics in mind, VNTMs tend to be non-profit organizations or advertising/sponsorship supported. Evidence suggests that as non-profit industry associations, user groups, consortia and publishers have embraced the web they probably make up the majority of VNTMs today.

The one caveat to all this is that in a sense, VNTMs are not marketplaces at all, but rather domain-specific aggregation sites (sometimes called Portals). They have the capacity to become marketplaces, but today are not true marketplaces in that goods or services are not traded between the buyers and sellers attracted to the VNTM. VNTMs are characterized by:

• Aggregated information (content)
• High domain expertise
• Domain-specific business language and rules
• Proclivity to provide leads and early information for constituents
• Tend to be non-profit or publishing organizations in support of industry

Examples

Company	Vertical Domain	URL
VerticalNet	Varied	www.vertical.net
KIIA	Kangaroo Industry	www.kangaroo-industry.asn.au
TIA	Travel Industry	www.tia.org
CommerceNet	Electronic Commerce	www.commerce.net
Amer. Water Wrks	Water Treatment	www.awwa-mo.org
Red Herring	Tech Business	www.redherring.com

Many of these organizations existed long before the

World Wide Web. However, with the advent of Internet-based activities, their operational costs have sunk as their scope of operations have grown. In other cases, clever entrepreneurs have recognized a business need for aggregated content and formed vertical content aggregation sites. Other VNTMs which may fit into this marketspace[4] are:

- City Guides
- Legal Services
- Educational Services (e.g., on-line tutoring)

Revenue Models

The reason that VNTMs may never grow past their current point of penetration is simply that their revenue model is weak. Most VNTMs exist through one of two revenue models:

- *Subscription*: This can be thought of as having a retainer with your industry; it will provide you with limited information, but if you need to do any heavy lifting it would probably be best to go through traditional industry channels (i.e., consultancies, systems integrators, marketing firms, etc.). This is because by their very nature, VNTMs typically only provide broad-based information—not company-specific "strategic" information.

- *Advertising*: As with many portals, advertising revenues can generate good cash flow for a VNTM. This can be a good source of revenue, depending on the size of the community being supported by the VNTM. If the VNTM is relatively small it may not attract enough attention to warrant substantial advertising investment. Furthermore, many non-profits in this space believe that advertising would compromise their "objectivity" and non-aligned position in their industry vertical.

A supplementary revenue stream could be provided through vertical market consulting. Again, non-profits tend to shy away from company-specific consulting as it can cause conflicts of interest with other members of the vertical constituency.

For-profit VNTMs exist (witness VerticalNet), but are relatively rare. However, going forward, there may be strategic and tax advantages for a non-profit industry association to move into either the for-profit space or the transactional space—or both. They may actually be able to provide more value to their constituencies as for-profits than as non-profits as they will be able to aggregate more industry experience through hands-on work.

Future Challenges

Vertical Non-Transactional Marketplaces (VNTMs) are the "baby siblings" of Vertical Transactional Marketplaces. They have not quite grown up enough to leave the nest and commit to transactional revenues. That being said, there are quite a few very successful VNTMs. These include many of the organizations mentioned above.

However, it is the prediction of this author that VNTMs will eventually grow to become transactional. Those that do not will become "less and less vertical" moving towards a horizontal space. In short, this quadrant does not have a compelling future except for non-profits (and even this is questionable).

This is due primarily to two reasons:
1) Reliance on the subscription revenue model, which is limited in its upside potential. Also, one of the primary reasons people have come together in the past in the off-line version of a VNTM (i.e., consortia, industry associations, et al.) has been to network and get information.
2) The advent of the World Wide Web itself, which has made the creation of "virtual" user groups increasingly cheap and easy. Thousands of such user or interest groups have sprung up on the web over the past four years, offering chat, papers, business contacts and buzz—and many of them do not charge subscription fees.
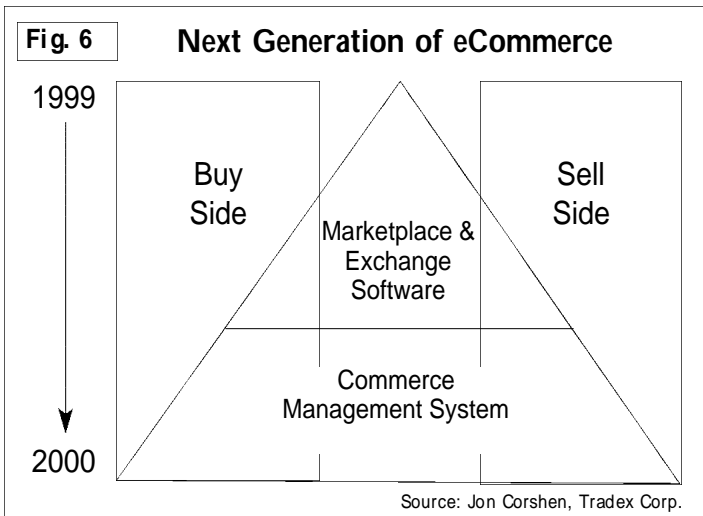
On the other hand, if a VNTM can attract millions of users, the higher traditional user fees may be able to be

replaced by a "higher volume, lower margins" model.

If the VNTM is to exist in a web world, it must be able to offer more domain expertise than the sum of its constituency. In other words, the VNTM must trade in specialized, valuable information and be able to create a community that attracts tens of thousands of users willing to pay for this "concentrated" information. Otherwise, the VNTM model will eventually migrate to another quadrant or to obscurity itself.

Horizontal-Transactional Marketplaces

Horizontal Transactional Marketplaces are sometimes called Portals, Commerce Service Platforms or Vortexes.

Fig. 6 — **Next Generation of eCommerce**

1999

Buy Side

Marketplace & Exchange Software

Sell Side

Commerce Management System

2000

Source: Jon Corshen, Tradex Corp.

For purposes of this paper, we shall use the unwieldy, yet more accurate, Horizontal-Transactional Marketplace (HTM). "Horizontal" because they are dealing primarily in indirect, non-strategic goods and services—good and services that are used by all verticals and individual businesses (see Figure 6). HTMs are evolving into perhaps the truest form of marketplace—and equally have the greatest potential in terms of effecting the way business is done.

Characteristics

Most Horizontal Transactional Marketplaces got their start as procurement applications. It was recognized in 1996-1997 that the marketplace for electronic procurement was virtually untouched. It was determined through various studies commissioned by hopeful start-ups and industry consortia that the cost of processing a Purchase Order for an indirect good could be upwards of $150, irregardless of line items.

Furthermore it was estimated that up to 35% of a company's costs could be attributed directly to indirect goods. This led to the epiphany that if one were able to use Internet-based electronic commerce to automate and ease the cost and process of procuring indirect goods, that a lot of money could be saved—which would fall directly to a company's bottom line.

In fact, it is now estimated that companies committing to an internal procurement solution can recoup their cost in as little as one year. Cost reductions of as much as 5%-15% in product costs, 70% decreases in process costs, and 50-70% reductions in overall cycle time have been reported by companies implementing these solutions. Clearly this is a compelling business and one which has garnered much attention in the last 18 months.[5]

However, many of the leading procurement vendors have determined that simply providing an procurement application focussed on Maintenance, Repair and Operations (MRO) is limited. Therefore in the last 6-8 months, many of them have been "expanding" their scope to build entire procurement marketplaces. Eventually it is expected that these procurement marketplaces themselves will expand to include other services such as human resources, logistics, bill payment and other "horizontal" business services. However, before this can happen, the HTMs must prove to their constituencies that they can do more than simply provide a hosted procurement application (which itself is not simple at all).

Standards

One of the means that industry is trying to deal with the complexities of the marketplace is through standards initiatives. The eCommerce industry consortium, CommerceNet, put forward a proposal to the U.S. government almost two years ago to develop "interoperable technology standards." This proposal was accepted and from that the first major E-commerce related work with XML was done. The result of this was a Common Business Library (CBL), which is managed by CommerceNet and open to all industry. However, CommerceNet has moved more slowly than industry would like,[6] which has led to independent efforts by industry leaders like Ariba, CommerceOne and Microsoft.

Jon Corshen, Vice President of Product Marketing for Tradex, believes that it may still be too early for industry wide standards in the procurement/MRO/HTM space. "The standards today are not really standards. The constituency using the standards is not large enough yet for any of these [proposed standards] to be real standards. I think that standards will be driven by the needs of the verticals, not the horizontals."

Whatever the outcome, the complexity of ontologies, catalog aggregation, business semantics, etc., etc. demand the use of some sort of protocol. Many believe that XML (extensible markup language) may provide a solution. Without going into much detail here, XML is a meta-language that allows one set of data to talk to another set. In a very simplified example, if one set of data, say from a product catalog, wanted to speak with a procurement application, data in XML could be used to "help teach" the application how to communicate with it.

Data: I would like to transact with you.

App: What language to do you speak.

Data: CBL, I will teach it to you.

App: Ah, now I understand, you wish to know about price.

The power of meta-data and XML's potential to provide

high levels of interoperability between everything from legacy systems to catalogs has the industry excited. However there are dangers. If everyone goes out and develops their own versions (if XML is a language, think of them as dialects), then much efficiency and interoperability will be lost.

Currently a number of solutions are being proposed:

Company	XML-based Solution
Ariba	cXML
CommerceOne	CommerceConnector
CommerceNet	CBL
Microsoft	BizTalk

There are also a number of related protocols being proposed. These include OBI, RosettaNet, OFX, and OTP, among others. Many of the solutions out there are already "OBI compliant" (or another protocol compliant). In short, this is getting to be a very crowded and confused marketspace. It remains to be seen whether industry consortia such as CommerceNet or the W3C will be able to help develop industry-wide standards or if industry itself will solve the problem. Whatever happens, we should all be aware of the danger in wasted potential of developing "stove-pipe standards" which only work within very limited trading communities. Finally, as Skip Folds of Ariba points out, "When evaluating whether to utilize an eProcurement solution, one has to be aware of the total cost of ownership—not just price." In the consumer marketplace buyers pay close attention to price. Though this is true in the business-to-business world as well, other factors must be taken into consideration, including availability, logistics, customer support, the cost of procurement itself, and a raft of other factors. Price is not necessarily the most important factor in determining Total Cost of Ownership.

In summary, HTMs are characterized by:

- Current focus on MRO (indirect) goods
- Bringing together buyers and sellers in a dynamic trad-

ing environment

- Providing increased efficiency and cost savings in procurement processes
- Aggregation of supplier content
- Strong understanding of business rules and processes
- Adoption of flexible business processes so that users will not "go around" system
- Walk-up user interfaces for all users (i.e., browser interface)
- Enterprise integration
- Allowing comprehensive information access to records, cycle time, returns, etc., for marketplace customers
- Providing analysis of industry purchasing patterns
- Purported high levels of interoperability with legacy systems
- Future high levels of interoperability with "outside" vendors
- Plans to expand from MRO to other horizontal products and services.

Examples

As industry has realized the value which HTMs can provide to industry, dozens of companies sprung up to meet the challenge. Many of these have been around for as long as the World Wide Web, others are relatively new. They all purport to provide the best solution and to provide the greatest value in terms of total cost of ownership. They may all be right.

Company	Procurement App?	URL
Ariba	Yes	www.ariba.com
Tradex	Yes	www.tradex.com
CommerceOne	Yes	www.commerceone.com
SAP	Yes/No (announced)	www.sap.com
Wall Street Jnl	No	www.wsj.com
Ernst & Young	No	ernie.ey.com

As one can see, many of the companies which today purport to be digital marketplaces, got their start either through the "buy-side" procurement application business or through the ERP business. This has naturally evolved into the formation of dynamic trading communities for various horizontal goods and services.

Revenue Models

There are currently two major revenue models being used by HTMs, each supported by a supplementary stream from Systems Integration (i.e., installation and normalization). These are revenues from licensing and transactions. Advertising may become a viable source of revenue in the future, but given HTMs' issues with "sticky vs. slippery" sites, we do not believe that "traditional" web advertising models will be utilized.

- *Licensing:* Up until relatively recently, most—but not all—HTMs sold their services as MRO Procurement Solutions. In other words, they were selling applications as opposed to services. This meant that the primary revenue stream was from application sales. Licensing revenues ranged from a few hundred thousand to a few million dollars, depending on the size of the installation, number of expected users, etc.

- *Transaction:* The more interesting, and difficult revenue model is based on transaction sharing. This means that if a product is sold through the HTM, the HTM will take either a flat fee or a percentage of the transaction. There are various ways to handle this.

1) Percentage of Transaction. When the buyer makes a purchase, he pays the HTM a percentage of the transaction. This model was at first avoided by HTMs as buyers were uncomfortable with the "upside potential" of their payments. However, as the E-procurement business model has shown itself to work, buyers are increasingly willing to pay a percentage transaction fee given that they save so much over traditional procurement methods.

2) Flat Transaction Fee: Like the percentage transaction,

this was also not readily accepted by buyers. However, now with the growing popularity of E-procurement, buyers would rather pay a flat fee than a percentage fee as it is easier to calculate expected costs.

3) Supplier-negotiated Discounts: The buyer pays only the price he sees. The supplier pays the HTM either a percentage of a flat fee for each transaction (this is usually a percentage). This arrangement exists even if the buyer has established contract pricing with the seller. HTMs (and sellers) believe it is their best interests to make it as easy for buyers to buy as possible—and this includes not having them directly pay a transaction fee.

As eProcurement marketplaces gather more transaction data, they will be in a much better position to create a combination of pricing methods to best capture consumer utility. For now, however, it seems to be either one or the other.

Future Challenges

Horizontal Transactional Marketplaces will continue to grow and move toward a services model to support and bind Vertical Transaction Marketplaces. In other words, the future of HTMs looks good. What will be interesting are the dynamics of the industry itself. There are many players today and more are poised to enter. The winners will be those who are able to aggregate buyers and sellers most efficiently.

Another related challenge for HTMs will be how they will differentiate themselves going forward. Marketing will certainly play an important role, but so will value added services, such as human resources, financial services, logistics, etc.

Finally, interoperability (1) with legacy systems, (2) between suppliers, and (3) with "rival" procurement applications—and even marketplaces—will mark the winners from the losers in this fast-paced, brutally efficient business.

Horizontal Non-Transactional Marketplaces

Horizontal Non-Transactional Marketplaces (HNTMs) could very well be the future of a very large percentage of Internet commerce. In fact, it could be argued that the World Wide Web itself is nothing more than a Horizontal Non-Transactional Marketplace for information, opinions and ideas. At least that is how it started out. Since those heady days in 1995-1996, Internet-based electronic commerce has diverged into B2B, B2C and Community Development.

In the context of B2B eCommerce, HNTMs are numerous. However, as buyers and sellers become more sophisticated and familiar with E-commerce, and marketplaces begin to differentiate, HNTMs will become less numerous to business-to-business electronic commerce.

Characteristics

There is a fine distinction between Horizontal Non-Transactional Marketplaces and Vertical Non-Transactional Marketplaces, depending on how narrowly one defines a vertical marketplace. Most HNTMs revolve around content and community; so do VNTMs. The main differences lie in the breadth and cross-industry usability of the content and community services provided by HNTMs.

HNTMs tend to try to bring B2B communities together through the aggregation of content, information, opinions, business ideas and enhancing productivity. Research companies, on-line news organizations, business consortia and associations can all be considered HNTMs—even though some of them are staking out "storefront" property to enhance their revenue streams (i.e., portions of their Portals are being dedicated to transactions).

HNTMs are characterized by:

• Aggregation of business content
• Infomediary for constituency (clueing people into what

is going on)

- Enabling Productivity
- Creating sense of community among constituency
- Focusing on Productivity and Knowledge Transfer

Examples

The most successful HNTMs seem to come from the traditional media / research world. However with the advent of the Web and the relative ease of content aggregation, many new companies have thrown their hats in the ring. Sometimes it seems that any net Infomediary which can claim authority without taking responsibility for its recommendations is calling itself an HNTM (or portal, in the vernacular).

Company	Horizontal Domain	URL
Current Analysis	Technology R&A	
www.currentanalysis.com		NetCenter Info
Aggregator	www.netcenter.com	
Forrester Research		Technology R&A
www.forrester.com		
ITAA		Technology Assn
www.itaa.org		
Sales.com	Sales Support	www.sales.com
WSJ.com	Financial Reporting	www.wsj.com

To highlight the similarities between Non-Transactional and Transactional Horizontals, we have intentionally included CommerceNet as an example in both. One could consider electronic commerce to be a vertical business opportunity in comparison to the Information Technology Association of American (ITAA), which has a much broader technology scope than does CommerceNet. However, if one considers electronic commerce to be a more generalized business format which includes everything from payment systems to technology standards to reports on the state of IP-based business communities in Finland, then one could call it horizontal.

Revenue Models

There are quite a few revenue models exhibited by HNTMs. This is probably due to the diversity of companies found in this market quadrant. However, for "pure" HNTMs, subscription fees are the most common.

- *Subscription Fees:* Many HNTMs provide vast categories of information in exchange for a flat subscription fee. Of course the more categories of information one wishes to avail himself of, the higher the fees become. Nonetheless, some HNTMs have been able to "enhance" these subscription fees by selling "micro" versions for those companies or individuals who wish access only to a select piece of information or report. This can be considered transactional revenue, thus once again blurring the lines between HNTMs and the other quadrants.

- *Advertising:* Many HNTMs use that old eCommerce revenue stand-by—advertising. As transactional efficiency (slippery) is less important with HNTMs, many have adopted advertising as a viable means to generate revenue.

As the HNTMs continue to diversify and fragment, other revenue models will come to the fore. We are already seeing a number of them as HNTMs differentiate their portals into transactional and non-transactional components. Here are two which appear to be driving the fragmentation (or at least reclassification) of the HNTMs. These are:

- *Unit Charge:* This is when a company charges for only a single piece of information. Though many HNTMs would prefer to charge higher subscription fees, as sources for information have increased, many HNTMs have begun to sell their content piecemeal. For instance one can subscribe to the *Economist* online (www.economist.com) and have full access to their wonderful archives. If, however, one is doing research and only needs a handful of articles, oftentimes it is simply easier and less expensive to pay for the individual articles.

• *Proprietary Research and Analysis:* Many R&A firms will enhance their revenues through company-specific work. This is an excellent means of building wider domain expertise and enhancing one's brand value in the marketplace. Again, this should be considered more transactional than non-transactional.

Future Challenges

Horizontal Non-transactional Marketplaces will grow to be true "infomediaries." By aggregating information and process, these marketplaces will be able to charge business-and consumer-users for the right to access information, enable productivity and possibly low-level services (these are services which a consumer might not be willing to pay for individually, but would purchase as part of a larger "subscription package.)

CONCLUSION

Electronic marketplaces are here to stay. Their sheer number and diversity will ensure that. Furthermore, the obvious benefits of building global electronic commerce marketplaces is surely compelling. It is the growth of such marketplaces, in combination with the continued penetration of technology and the democratization of financial markets which will do the most to spur globalization and the ultimate success of capitalism.

Though electronic marketplaces will surely continue to grow, there are still a number of points of caution to bear in mind for those businesses which intend either to establish their own marketplaces or to become the constituents of one.

1) Disintermediation is here to stay. It is simply a fact of life that some constituents in a supply chain will become unnecessary while others suddenly find themselves in great demand. One must become involved in building these marketplaces in order to help ensure that you aren't the one getting cut out. Even if one appears to be in the cat bird's seat today, the speed at which this economy works and the suddenness of its changes can catch those who are not paying full attention at unawares.

2) How will suppliers differentiate in the future? As power has shifted to buyers, suppliers are becoming increasingly uncomfortable with the developments of online marketplaces. The marketplaces themselves will have to help suppliers figure out a way that will help them maintain differentiation and build brand without undermining the new-found power of the marketplace itself. Markets still need the overt participation of suppliers to work (and maybe they always will).

3) How will international business and inter-market trading work? There are barriers beyond technology and language, barriers which extend into public policy and law. Until these issues are reasonably resolved, true global electronic commerce will not be possible. The best that one could hope for is that the Trading Marketplaces take responsibility for establishing rules and punishments for their own community. If this occurs, it will be enlightening to see how nation-states react to this veiled threat to their sovereignty.

Finally, one of the most important "evolutions" in online marketplaces will be the development of the dynamics across the quadrants described here. Of most significance will be the interactions between Transactional Horizontal and Transaction Vertical Marketplaces. This is where the money is and where future business processes will be developed. We certainly live in exciting times.

Footnotes

1. Industry.Net has recently been reincarnated as an online marketplace for engineering parts, specifications and data.

2. This is not to say that EDI is dead; in fact many Internet B2B protocols have emulated the successful and well-established structures and semantics of EDI. EDI will certainly continue to be viable for the right application and will equally certainly be joined by IP-based applications designed to augment and extend these legacy systems.

3. Porter's Five Forces Analysis looks at how buyer power, supplier power, competition, substitutes and the threat of new entrants can shape a company's business prospects. A summary of the Five Forces model, excerpted from the Harvard Business Review, is located at (www.iir1.uwaterloo.ca/MOTW96/readings96/Porter79.html). Porter's book, *Competitive Advantage: Creating and Sustaining Superior Performance* (Free Press, 1985) contains a full discussion of competitive theory.

4. Actually, there are City Guides (http://national.sidewalk.msn.com/), Legal Services (http://www.nolo.com), and many other VNTMs on the Net today—but they tend to focus on B2C. NetCenter might be an exception, as its scope lies in both the B2B and the B2C spaces).

5. Figures quoted in this section were culled from Ariba and CommerceOne marketing documentation.

6. This seems to be the curse of the non-profit in the Internet age; early identification and addressing of a major industry issue, but to not have the resources to provide industry with a timely solution.