

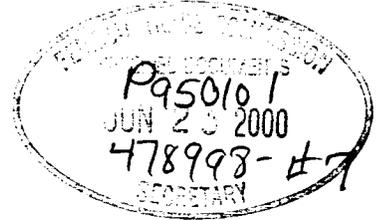
# SALOMON SMITH BARNEY

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June 20, 2000

Donald S. Clark  
Office of the Secretary  
Federal Trade Commission  
600 Pennsylvania Avenue, N.W.  
Washington, D.C. 20580



Dear Mr. Clark:

I am a Director and Senior Analyst for B2B e-commerce at Salomon Smith Barney. I have been following the B2B space since 1998 and prior to joining Salomon founded the B2B practice at Thomas Weisel Partners in San Francisco.

I have enclosed copies of my most recent piece, "B2B e\*Commerce – A Vertical and Horizontal Perspective", for your review. Please note that this piece was published at Weisel, and I am currently working on an updated paper for Salomon Smith Barney.

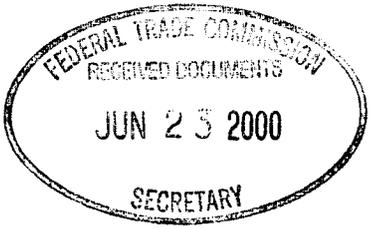
I am planning to attend the FTC's B2B electronic marketplaces workshop next week and would like to have a proactive role in those events. I have also enclosed copies of a slide presentation I have given on numerous occasions to CEOs and Directors of many Fortune 500 firms over the past several months. I would like to propose that I give this presentation or a modified version of it to the workshop attendees next week. This presentation will address several of the background issues related to B2B e-commerce that I think are relevant to your agency's decision-making process regarding the many proposed industry exchanges.

Please contact me at (415) 951-1643 or [gretchen.teagarden@ssmb.com](mailto:gretchen.teagarden@ssmb.com) to discuss this possibility further. You may also contact my colleague Wes Gilchrist, a research associate in B2B e-commerce, at (415) 951-1856 or [wes.gilchrist@ssmb.com](mailto:wes.gilchrist@ssmb.com). I look forward to meeting you in the near future.

Best regards,

A handwritten signature in black ink that reads "Gretchen Teagarden".

Gretchen Teagarden  
Director, B2B e-Commerce Equity Research  
Salomon Smith Barney



# **“365 by 2005”**

*Improving Shareholder Value With B2B E\*Commerce*

## **Business to Business E\*Commerce**

Gretchen A. Teagarden

Director, B2B E\*Commerce

U.S. Equity Research

SalomonSmithBarney

June 2000

## Outline

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- I. B2B Sector Highlights
- II. The Goal of B2B E\*Commerce
- III. Achieving the Goal of B2B E\*Commerce

## Sector Highlights

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- We estimate B2B will create \$3.7 trillion worth of New Market Capitalization (PV of after-tax cash savings to U.S. common stocks).
- New Market Capitalization will come from cash savings due to rationalization of multiple supply chains across the globe
- Cash savings come primarily from four areas on corporate income statements and balance sheets
  - S,G,A
  - Cost of Goods Sold
  - Inventory
  - Accounts Receivable
- We believe at least 90% of this new market capitalization will accrue to existing “old economy” companies.

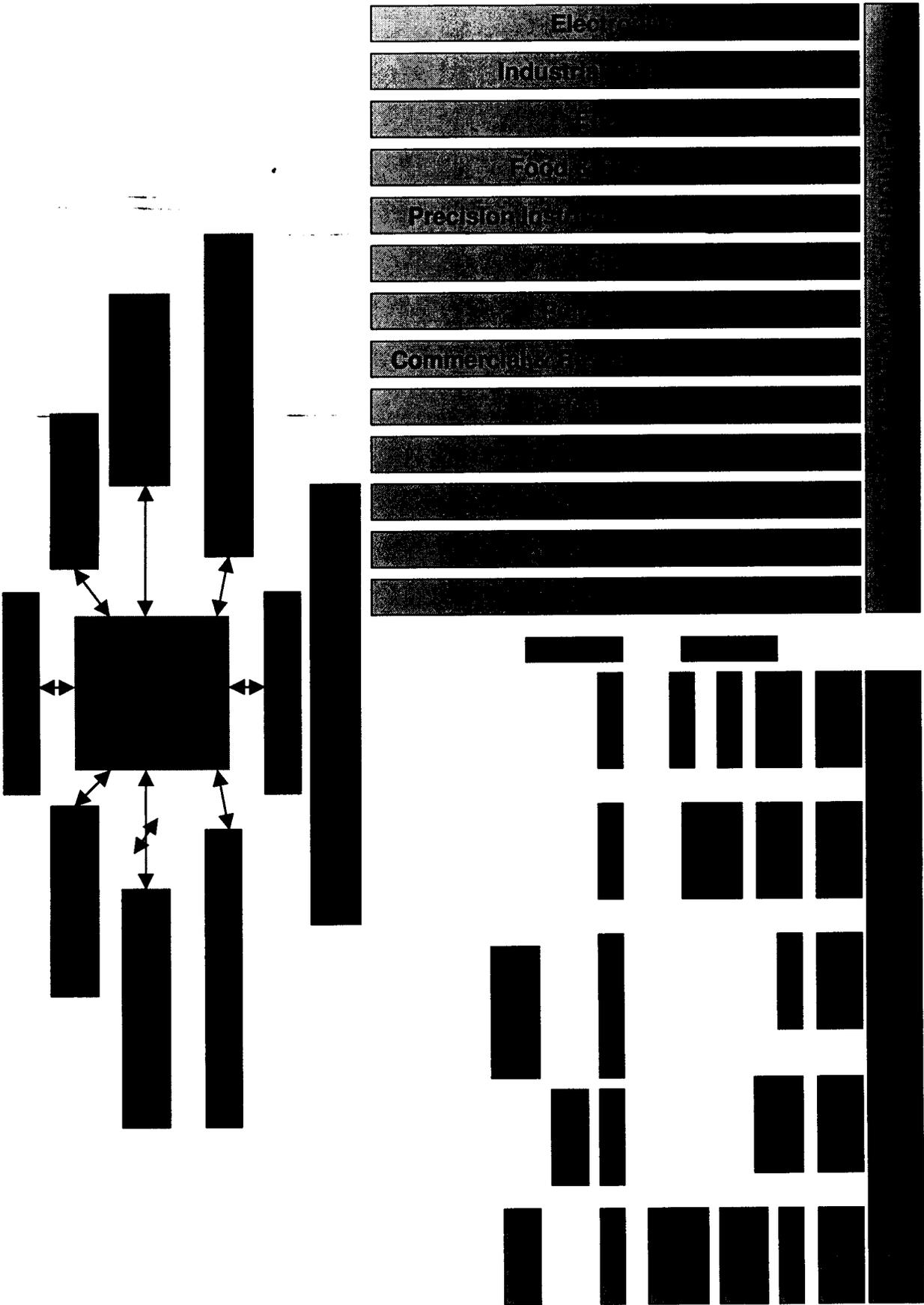
## “The Empire Strikes Back”

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- The old economy is alive and well in B2B
- Blue Chip B2B equities are announced weekly
  - Ford / DaimlerChrysler / GM
  - Compaq, Gateway and HP
  - Chevron and Texaco
  - United Technologies Corporation and Honeywell
  - Carrefour, Sears and Roebuck, Kroger, Sainsbury,

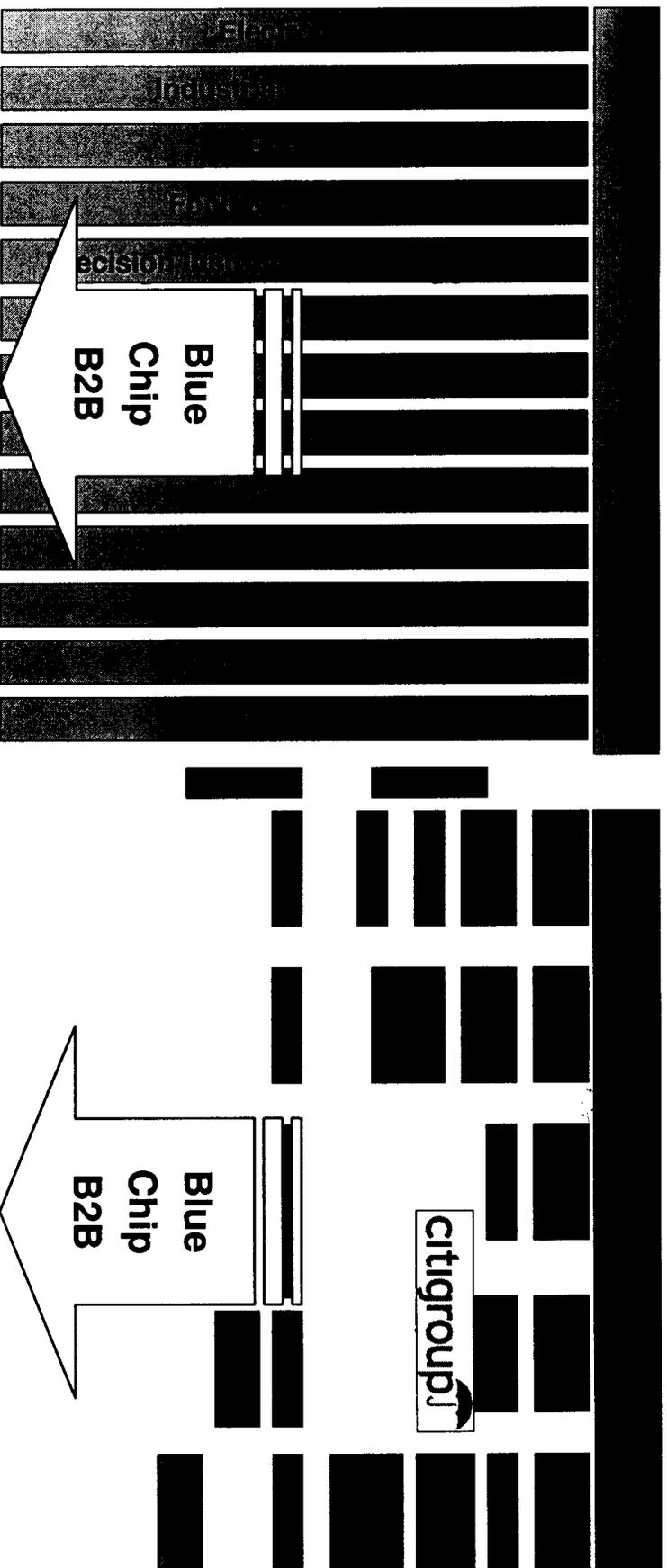
Metro

# SSB B2B Mapping Strategy



# Blue Chip B2B

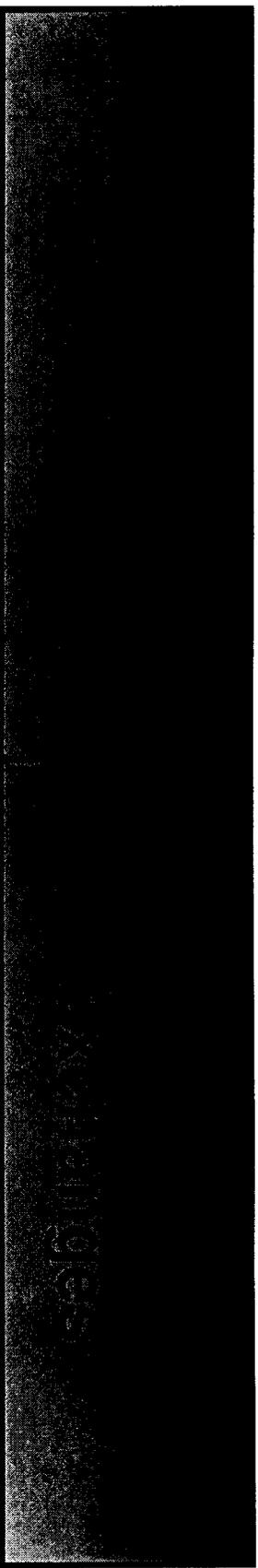
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- Funded by multiple members of the supply chain (Ehitex.com)
- Contractual agreement to commit liquidity
- Philosophy of openness to any and all potential participants
- High level of security and anonymity for sensitive data
- Management team in place

# SSB B2B Portfolio Allocation Strategy

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- Supplying the “bullets” for the exchange wars
- Explosive market demand from “dot.coms” and traditional players
- Less of a winner take all category
- Opportunity for numerous winners in multiple market segments

- High gross margins
- The “Sabre” of B2B
- Fragmented markets
- Blue Chip B2B over Dot Coms
- Contractually bound buyer liquidity
- Strong Management Teams
- Strong supplier & buyer acquisition strategy
- Digital Goods Well Suited for Exchanges

## The Goal Of B2B E\*Commerce

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- B2B e\*commerce is a major capital issue facing global corporations
- B2B capital allocation should be measured by its ability to improve shareholder value
- The driver of shareholder value creation is the ability to increase the cash flow of the enterprise
- This is the test even the Internet has to pass!

## Do You Want To Be A “Blue Chip B2B”?

---

- Ability to execute on two important fronts:
  1. Save costs for member companies - “365 by 2005”
  2. Create a sustainable business

# How B2B E\*Commerce Will Increase Cash - A Hypothetical Study of the Big Three Auto Exchange over 5 Years

---

## The Goal of B2B E\*Commerce

Improve gross margins

Reduce SG&A costs

Improve inventory turns

Eliminate equipment write-downs

## Benefits of B2B

100 bp increase in gross margin = \$16 B in pre-tax cash

130 bp decrease in S,G & A expense ratio = \$20 B in pre-tax cash

0 DSOs = \$278 B in pre-tax cash

0 inventory by 2005 = \$35 B in pre-tax cash

No equipment write downs = \$12 B in pre-tax cash

## Accomplishing the Goal

• Reverse auction for direct goods  


• Deploy indirect goods procurement module 

• Deploy configuration module  
 

• Deploy financial services module  


• Demand forecasting / SCM tools  


• Deploy auction capabilities

**DOVE BID**  
 Business Auction Marketplace  
©1997-1999

# Accomplishing The Goal - Phase I Action Items

---



Handle Static Product Data

- ◆ Provides functionality of the catalog to the supply chain

Components Parts Data

I2 (ASDV)

Configure Static Product Data

- ◆ Replaces the role of the Reseller

Configurator

PC Order

Handle Dynamic Data

- ◆ Provides users with price and availability information

Outside the Firewall

CommerceOne

Handle Many-to-Many

- ◆ Platform to allow everyone to participate

Exchange Engine

CommerceOne

**Empower Aggregate Buying**

- ◆ Allows Intranet-based buying within pre-defined business rules

Procurement Module

CommerceOne, Ariba

Interoperability

- ◆ Allows for Phase II proliferation

XML Documentation

webMethods

# Accomplishing The Goal - Phase I Action Items Continued



Product Data Management

◆ Collaborative development with Partners

Secure Data Repository for Design Info

i2

SCM-Demand Forecasting

◆ Inventory visibility collaborative planning

Demand Planning

i2, SAP

Security

◆ Partner comfort with high comfort transaction

SSL, Encryption

VeriSign (Desktop Keys)

Horizontal Commerce Services

◆ Logistics Functionality

Logistics Exchange

Descartes, i2

◆ Payment and Finance

Secure Payment Solutions

Citi e-Solutions

Managed Catalog and Open Supplier

◆ Work with all business sizes

Location of Product Info relative to Firewall

CommerceOne

## Phase II - Creating A Sustainable Business

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- Offer smaller companies purchasing co-op model (this is why blue chips get together in the first place)
- Re-sell integration technology (webMethods to smaller suppliers)
- Offer web-based supply chain management services (be the ASP!)
- Offer horizontal commerce services to smaller members (ERP - type functionality to the world!) - ASP model
  - HR Services
  - Finance Services
  - Logistic Services

## Exchange Revenue Sources

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- Value-creation based revenue
  - Assuming a certain portion of the value created by the exchange is paid to the newco, the exchange itself exhibits substantial growth in its initial years...
  - ...Until the goals of B2B ecommerce are achieved (e.g. once inventory reaches zero, the ability to create value by continuing to decrease inventory goes away)
- Value-added services revenue
  - In order to maintain growth in later years, the exchange must create other sources of revenue

# Hypothetical Exchange Revenue Model

## Combined Impact of B2B eCommerce Goals

Total Cash Flow Impact to Participants Growth

|  | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> |
|--|-------------|-------------|-------------|-------------|-------------|
| Total Cash Flow Impact to Participants | \$20,036    | \$52,536    | \$71,906    | \$96,049    | \$120,003   |
| Growth                                 | ---         | 162%        | 37%         | 34%         | 25%         |

## B2B Exchange Revenue Model

% of Cash Flow to Exchange Value-Creation Revenue Growth

|                            | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| % of Cash Flow to Exchange | 5%          | 5%          | 5%          | 5%          | 5%          |
| Value-Creation Revenue     | \$1,002     | \$2,627     | \$3,595     | \$4,802     | \$6,000     |
| Growth                     | ---         | 162%        | 37%         | 34%         | 25%         |

## Combined Impact of B2B eCommerce Goals

Total Cash Flow Impact to Participants Growth

|  | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> |
|--|-------------|-------------|-------------|-------------|-------------|
| Total Cash Flow Impact to Participants | \$24,986    | \$25,868    | \$26,778    | \$27,716    | \$28,683    |
| Growth                                 | -79%        | 4%          | 4%          | 4%          | 3%          |

## B2B Exchange Revenue Model

% of Cash Flow to Exchange Value-Creation Revenue Growth

|                            | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| % of Cash Flow to Exchange | 5%          | 5%          | 5%          | 5%          | 5%          |
| Value-Creation Revenue     | \$1,249     | \$1,293     | \$1,339     | \$1,386     | \$1,434     |
| Growth                     | -79%        | 4%          | 4%          | 4%          | 3%          |

“Year Six Phenomenon”

# The Solution

## Combined Impact of B2B eCommerce Goals

|   | <u>2006</u>      | <u>2007</u>    | <u>2008</u>    | <u>2009</u>    | <u>2010</u>    |
|---|------------------|----------------|----------------|----------------|----------------|
| Total Cash Flow Impact to Participants Growth | \$24,986<br>-79% | \$25,868<br>4% | \$26,778<br>4% | \$27,716<br>4% | \$28,683<br>3% |

## B2B Exchange Revenue Model

| % of Cash Flow to Exchange    | 5%              | 5%            | 5%            | 5%            | 5%            |
|-------------------------------|-----------------|---------------|---------------|---------------|---------------|
| Value-Creation Revenue Growth | \$1,249<br>-79% | \$1,293<br>4% | \$1,339<br>4% | \$1,386<br>4% | \$1,434<br>3% |
| Target Growth (after 2005)    | 15%             | 15%           | 15%           | 15%           | 15%           |
| Value-Added Services Revenue  | \$5,651         | \$6,642       | \$7,787       | \$9,109       | \$10,634      |
| Total Revenue                 | \$6,900         | \$7,935       | \$9,125       | \$10,494      | \$12,068      |

# of Exchange Suppliers

30,000

| <u>Value-added Services Revenue/Supplier (actual \$)</u> | <u>\$188,362</u> | <u>\$221,393</u> | <u>\$259,553</u> | <u>\$303,617</u> | <u>\$354,477</u> |
|--|------------------|------------------|------------------|------------------|------------------|
|--|------------------|------------------|------------------|------------------|------------------|

**“365 by 2005”**

Gretchen A. Teagarden  
Director, B2B E\*Commerce  
U.S. Equity Research  
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June 2000

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## **B2B E\*COMMERCE**

# **A VERTICAL AND HORIZONTAL PERSPECTIVE**

A White Paper on the  
B2B e\*Commerce Industry

Gretchen Teagarden  
Daniele Donahoe  
Chris Noser

January 18, 2000

# B2B E\*COMMERCE

## A VERTICAL AND HORIZONTAL PERSPECTIVE

A White Paper on the B2B e\*Commerce Industry

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January 18, 2000



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## **B2B E\*COMMERCE**

### **A VERTICAL AND HORIZONTAL PERSPECTIVE**

#### **Executive Summary**

- **We estimate the B2B sector could potentially generate between \$1 to \$2 trillion dollars worth of new market capitalization.** We derive this number by assuming that the adoption of the Internet can deliver a 19% reduction in the aggregate SG&A expenses of all U.S. common stocks in ten years. In light of the fact that the aggregate market capitalization for all U.S. common stocks is \$24 trillion, the \$1-\$2 trillion number seems reasonable.
- **Where will all of this new market capitalization come from?** We think it will come from four areas. First, certain B2B companies are using the Internet to create a new market that prior to the Internet was untapped (the eBay of B2B). Second, certain B2B companies are disintermediating traditional players (the e\*trades of B2B) with a new lower cost Internet model, thus encroaching on the revenue base (and respective market capitalization) of traditional players in each of the different B2B market segments. Third, increased operating margins that traditional bricks and mortar businesses could reap by "webifying" their business. For example, a traditional distributor webifies its model in such a way where its inventory turns increase thus creating enhanced cash flow. Finally, B2B e\*commerce has created a new market for new technology applications to enable the three aforementioned types of companies to do business with other businesses over the Internet.
- **We believe the B2B companies that will generate accelerating long term cash flow and, thus, superior returns for investors should meet at least one of the following criteria.** First, they should create a new market that was not possible prior to the Internet. Second, they should disintermediate an inefficient traditional member of the existing supply chain. Finally, they should supply technology applications that facilitate B2B transactions for both new "dot coms" and traditional businesses.

*(Executive Summary continued on page 2)*

- 
- We have identified thirteen attributes that we look for from prospective B2B e\*commerce investments. Those key attributes are summarized below.
    1. **Large Addressable Market.** The first attribute highlights the importance of a large addressable market. We believe the B2B company should target a segment of its operating environment that will provide ample opportunity for the company to grow. In order to accurately gauge the true addressable market, the B2B company must understand its respective channel. Upon a clear understanding of the channel, the B2B company can begin to size its addressable market in regards to the real value added service that it can bring to the table.
    2. **Technological Savvy.** The next attribute addresses the need for technological savvy in the B2B company's respective market. Thought must be give regarding the technical sophistication of the intended end user. If the target market is nascent to e\*commerce in general, then adoption may require more time and effort by the new B2B company.
    3. **High Value to Shipping Cost Ratio.** Another important attribute is that the underlying product needs to have a high Value to Shipping Cost ratio. It makes logistical sense for the B2B "dot com" to focus on products that are expensive relative to their weight. This ratio ensures that physical distance will not inhibit the end user from realizing the value generated by conducting business via the Internet. In other words, if buyers and sellers are in geographically disparate locations, the costs to transport the underlying product should not outweigh the value of the good.
    4. **Perishable Commodities Preferred.** The next attribute also deals with the physical nature of the product itself. We believe commodities that have a shorter life span lend themselves well as subjects of B2B e\*commerce. Traditionally, these perishable products have been liquidated at a great loss to the seller. The Internet enables the seller to capture a greater portion of their value by providing information regarding their existence to a much larger audience.
    5. **No Behavioral Change.** It is very important that the solution provided by the B2B company not require a significant behavioral change on the part of the customer. We believe adoption of the B2B solution should be as friction free as possible, allowing the targeted end user to rapidly integrate the new business methods into daily life. This involves identifying the shortcomings of the traditional business practice and solving those shortcomings in the least intrusive manner possible.

*(Executive Summary continued on page 3)*

- 
6. **Channel Domain Expertise.** In order for the B2B company to effectively provide a useful solution to the end-user, it is vital that the management team have channel domain expertise. As the B2B solution is undergoing development, the management team should have a clear understanding of the subtleties involved in adequately addressing the needs of the operating channel. Domain expertise provides credibility to the company and gives leverage when establishing business partners. The importance of this straightforward concept is amplified when the B2B “dot com” operates in a vertical marketplace.
  7. **Adoption “Spark”.** We believe the successful B2B company will eventually undergo a noticeable spark at some point in its adoption cycle. This idea refers to the company exhibiting a dramatic upward trend in its revenue curve as a result of customers validating the firm’s value proposition. The spark is the event or catalyst that brings exponential revenue growth to the B2B “dot com.” It is a trigger that convinces the mass of end users that there is tangible value to engaging a solution provided via the Internet.
  8. **Quantifiable Value Proposition.** Another fundamental attribute is that a prospective customer be able to quantify the B2B company’s value proposition via an ROI analysis. In other words, the solution provided by the B2B company should demonstrate tangible results to the bottom line of its customers.
  9. **Embrace Technological Trends.** We like to see B2B companies that adhere to our “B2B Technology Best Practices.” There are certain technological trends currently taking place in the B2B space and we believe it is vital that a company observe and embrace these trends as its solution develops. These trends are typically led by a few select companies and the new B2B market entrant must utilize these existing companies when delivering its solution.
  10. **Exploit the Channel Via the Internet.** We believe the Internet is a tool to exploit an underlying weakness in the B2B company’s respective channel. The potential for this to occur is based on the company’s understanding of the channel in which it operates. Based on a thorough channel analysis, as well as rich domain expertise, we believe the weak links in the channel structure should be understood and targeted by the B2B solution.
  11. **Have a Defensible Channel Strategy.** We believe B2B companies can gain from their understanding of the channel to position themselves in a defensible posture against potential competitors. This strategy might come in the form of exclusive supplier contracts or exploiting first mover advantage. If the B2B company is able to position itself in such a manner, then the B2B company has the potential to embed itself as a permanent fixture of its respective business channel.

*(Executive Summary continued on page 4)*

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12. **Go Where the Gross Margin Is.** An additional attribute can also be extracted from a thorough channel analysis. The results of the channel analysis provides some indication of where the greatest margin potential is located. We believe the B2B company should direct its efforts at this juncture to maximize and sustain gross margin over the long term. We have found that high gross margins are positively correlated with the level of fragmentation in a particular business sector. We believe the Internet can aggregate and coordinate this high fragmentation towards the creation of a viable value proposition.
13. **Monetize the Value Proposition.** The final attribute points to the importance that at some point in the company's evolution, measures have been taken to monetize the value proposition supplied by the B2B company. This idea relates to the ultimate desirability of a transaction based revenue model. This might be difficult in the early stages of a business model, but at some point in the firm's lifecycle, the main revenue driver is ideally tied to the transaction volume of the client employing the B2B solution.
- Based on the aforementioned criteria, we believe the following market categories are well – suited for B2B e\*commerce.
    - Financial Services
    - IT Services
    - HR Services
    - Telecommunications Services
    - Corporate Travel Services
    - Media (tv, print, billboard)
    - Transportation
    - Electronic Components
    - Energy
    - Traditional Utilities
  - **Unique Business Models.** We have identified 10 unique B2B business models. We think four of those models (the e\*Distributor, the secondary e\*Trading exchanges with disintermediation, the disintermediators and the e\*Supply chains models) will be the most profitable over the long term. Our reasoning behind casting a favorable light on these four particular models is presented in Section 3. It is important to note that although we view certain business models more favorably than others, we believe it is critical that the business model match the requirements of the industry.

*(Executive Summary continued on page 5)*

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- We believe companies that supply technology applications to both Internet-based and traditional businesses are an excellent category for investment in the B2B space. As mentioned earlier, we have identified the core “B2B Technology Best Practices” that we think ultimately should be outsourced to companies that solely focus on these best practices. We believe the B2B Marketplace enablers should benefit from two main trends. First, numerous B2B marketplaces will continue to develop. Second, traditional supply-chain members will need B2B e-commerce capabilities to remain competitive.
  - We believe investors should keep an eye out for the evolving B2B standards. As interoperability is critical to the adoption of the various B2B marketplaces, advancements in XML (extensible mark-up language) and numerous industry-specific standards could dramatically affect how quickly a marketplace gains traction.
  - **We believe B2B stocks should be valued using the net present value of the projected cash flows with a discount rate that mirrors the risk to the investor and their desired rate of return.** We believe a ten year discounted cash flow analysis is critical in evaluating B2B e-commerce stocks. Since most of these equities are still in a very early stage at the time of their IPO, a clear understanding of what the business will look like when it does finally attain its stable operating margins is critical. Without looking beyond what we refer to as the “chaotic phase” of the business (which generally is still happening well beyond the IPO), we think it is impossible to get a clear picture of what the valuation should be. Many of the B2B stocks are spending a tremendous amount of cash at the time of the IPO. Without a clear target date for when the business becomes cash flow positive, we believe it is difficult to see how the investor achieves a return on the invested cash.
  - We estimate the B2B sector could potentially generate between \$1 to \$2 trillion dollars worth of new market capitalization.
  - **We recommend investors focus on the time it will take for the company’s cumulative cash flow to equal historical cumulative cash losses.** As we show in the Valuation section of this report, there is an inverse relationship between the time required for a company’s cumulative cash flow to exceed the company’s historical cumulative cash losses and net present value.
  - **Accounting Inconsistencies.** We believe investors should watch out for the Internet accounting inconsistencies. With recent Internet company valuations tied to revenue growth, the methodology for presenting revenue has come under significant scrutiny from the accounting governing bodies. One of the most important issues is whether companies are accounting for revenue on a gross or net basis. We believe this single accounting difference may have a major impact on revenue multiples and, as a result, complicate the comparison of companies in this space. It is vital to filter out this accounting difference if a comparison of two different companies is to have any relevant meaning. However, we reiterate the importance of focusing on the valuation relative to long-term cash flow instead of relative to next year’s projected revenue.

*(Executive Summary continued on page 6)*

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- We believe there are unique ways to create value for the investor in the B2B space beyond the pure play “dot com.” We have found that certain “legacy assets” can be acquired at more favorable valuations than their “dot com” counterparts. One of the greatest challenges facing the new B2B “dot coms” is the “chicken and egg” phenomenon, which is the struggle to get buyers without suppliers and vice versa. We have found that there are certain legacy assets that can be acquired to address the chicken and egg phenomenon. These legacy assets come in the form of either software companies and/or a traditional bricks and mortar catalog-based distributor.
  - B2B is different from B2C in six important ways. First, the adoption rates will be slower in B2B than in those exhibited by B2C companies. Second, the economics of the business models in B2B will be different when compared to those in B2C. Third, there are inconsistent payment platforms in the B2B market, whereas these payment platforms are consistent in the B2C market. Fourth, the need for management channel domain expertise is critical in the B2B market, whereas it is less critical in the B2C market. Fifth, the data taxonomy issues are more complex for B2B companies than they are for B2C companies. Finally, due in large part to the aforementioned factors, the overall barriers to entry are much higher in the B2B market than in the B2C market.
  - We categorize B2B e-commerce into three segments: **Vertical Marketplaces, Horizontal Marketplaces, and Marketplace Enablers.** Vertical marketplaces focus on one particular industry with all users belonging to the same supply-chain. Conversely, horizontal marketplaces provide a web-based commerce platform for products and services purchased across industries, and the end-users could be from multiple industries. Finally, the marketplace enablers provide the technology applications for both the aforementioned marketplaces and traditional marketplaces.

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## SECTION 1: WHAT WE LOOK FOR IN PROSPECTIVE B2B INVESTMENTS

We believe companies that possess certain attributes are well positioned for success in the B2B market. We organize these attributes into three major categories: channel and commodity factors, company factors and business model factors.

**Channel and Commodity Factors.** Channel and commodity factors pertain to the channel in which the company is operating and also to the commodity that will be traded. For example, Adauktion is a private company operating in the advertising channel; whereas e-STEEL is operating in the steel channel. The channel factors pertain primarily to the existing structure of the channel (i.e., fragmented vs. concentrated; or multi-tiered vs. flat). The commodity factors relate to the underlying commodity being traded. For example, we place particular emphasis on the relationship between the weight of the commodity and its value since we believe that will have an effect on the overall fulfillment economics.

**Company Factors.** The company factors relate to the management team, the value proposition, the technology platform and the overall channel strategy. For example, does the company have a strong management team with considerable industry knowledge? Company factors pertain to a specific management team's ability to clearly define its value proposition and attain industry adoption. Finally, we also look at the company's technology platform. We specifically look to see whether they have subscribed to our B2B "Technology Best Practices" as defined in the section of the same name in this report.

**Business Model Factors.** The business model factors relate to the way in which the company is monetizing its value proposition. For example, are they selling software or charging transaction fees? These factors also relate to the company's channel strategy, whether the company is disintermediating an existing player in the channel or merely migrating existing channel relationships to the web. For example, certain companies have a disintermediation channel strategy whereas other companies empower the channel.

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## **ELEMENTS IN THE PROSPECTIVE B2B INVESTMENT**

### **Channel and Commodity Factors**

- Large “Addressable Market”
  - Disintermediation Expands The Addressable Market
  - New Market Creation Expands The Addressable Market
- Technologically Savvy Channel Participants
- Favorable Relationship Between Shipping Cost and Value
- Perishable Commodities Preferred

### **Company Factors**

- No Significant Behavioral Change Required From Prospective Customers
- The Management Team Has Domain Expertise
- An Adoption “Spark” is Critical in the Early Stage of the Business
- The Value Proposition is Quantifiable to the Buyer and Seller (ROI Analysis For Prospective Customers)
- Adhere to Our B2B Technology Best Practices

### **Business Model Factors**

- Use The Internet To Exploit The Channel
  - Either Bag the Gorilla
  - Or Lower the Inefficiencies
- Have a Defensible Channel Strategy
- Go Where the Margin Is
- Know How to Monetize Their Value Proposition

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## CHANNEL AND COMMODITY FACTORS

### Large "Addressable Market"

In this section we will discuss three areas of importance regarding the sizing of the B2B market: defining the addressable market vs. the total market, the drivers of the addressable market and, finally, the creation of a new market.

The various B2B market projections that have been published vary greatly not only in terms of total dollar size but also more importantly in their methodologies. We believe it is best to size the B2B market on a case by case basis depending on the specific target market the company is going after. There are many numbers being used today to value the entire B2B market, yet we believe these estimates fail to capture the true prospects for some of the new B2B companies. We believe many of these estimates are overstated as they use the traditional gross B2B revenue as a base. We argue that the real B2B e-commerce opportunity is revenue that a company can capture by correcting the inefficiencies in the channel. The addressable market is the market potential achieved when a company uses the Internet to correct a presently flawed business process. We draw a clear distinction between the total B2B market opportunity and the addressable market that will be impacted by a B2B e-commerce company.

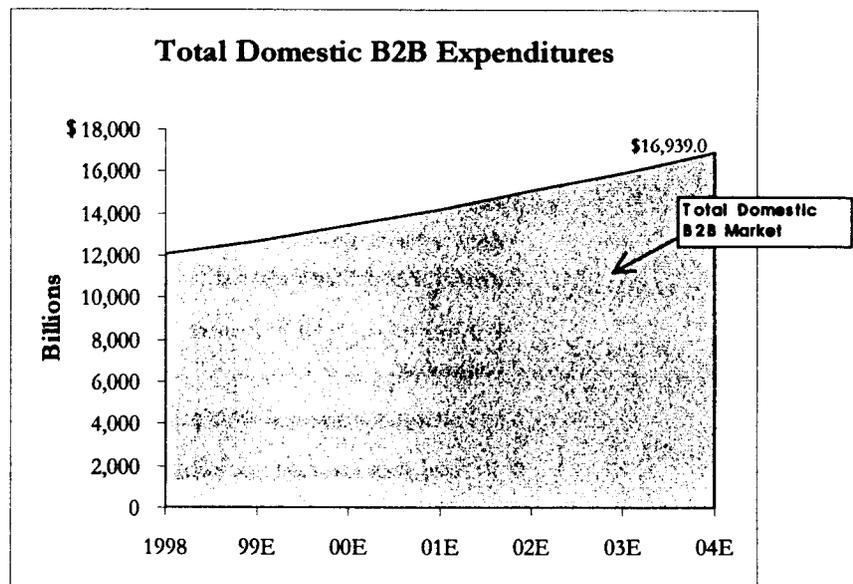
For purposes of the B2B market sizing, we have separated the market into three different categories:

1. **Total Traditional B2B Market**
2. **Total Potential Internet-Based B2B E\*Commerce Market**
3. **Total B2B "Dot Com" Addressable Market**

## 1. Total Traditional B2B Market

The total traditional B2B market is what existed prior to the Internet. The value of the market is the total dollar amount of gross transactions between businesses.

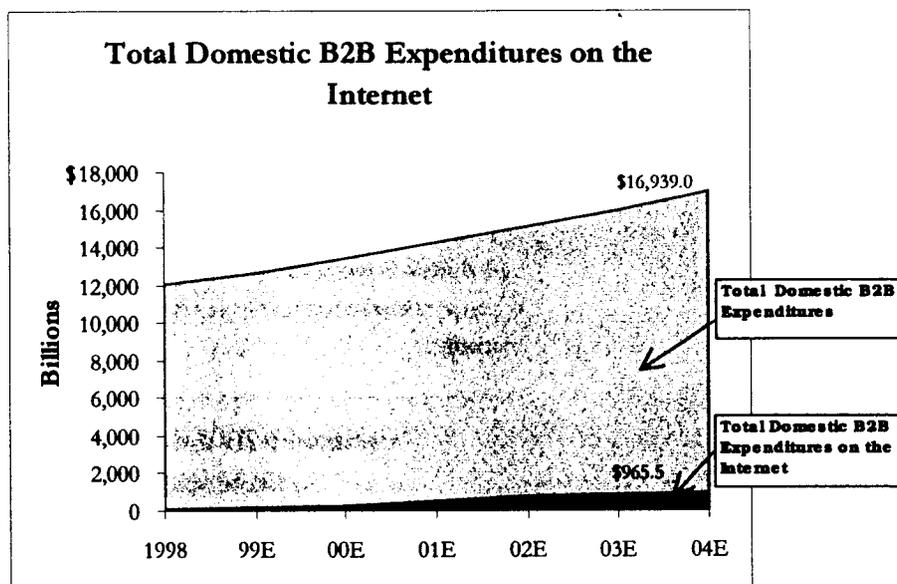
For example, when Ford buys tires in bulk from Goodyear, the total B2B market potential would be the gross dollar value of Ford's entire tire purchase. According to the Direct Marketing Association, in 1998 traditional U.S. gross B2B sales were approximately \$12 trillion and are expected to grow at a compound annual growth rate of 5.8%. The total gross dollar value of all B2B transactions is quite substantial as can be seen in the following chart. These numbers represent the sum of gross revenues received through traditional B2B transactions.



Source: Direct Marketing Association's Statistical Fact Book, 1999 & TWP B2B Internet Research

## 2. Total Potential Internet-Based e\*Commerce

The next step in extracting the true market for a B2B enterprise is to examine the portion of the traditional B2B business that will potentially migrate to e\*commerce. One way to think about this number is to consider the level of B2B transactions that occur via real world catalog ordering. We project that B2B Internet-based transactions as a percentage of total wholesale trade will mirror the same percentage B2B catalog-based sales have historically represented as a percentage of total wholesale trade. We think Internet-based B2B transactions will represent 5.2% of total wholesale trade by year 2002, given that 5.2% is what catalog-based B2B transactions actually were as a percent of total wholesale trade in 1998.



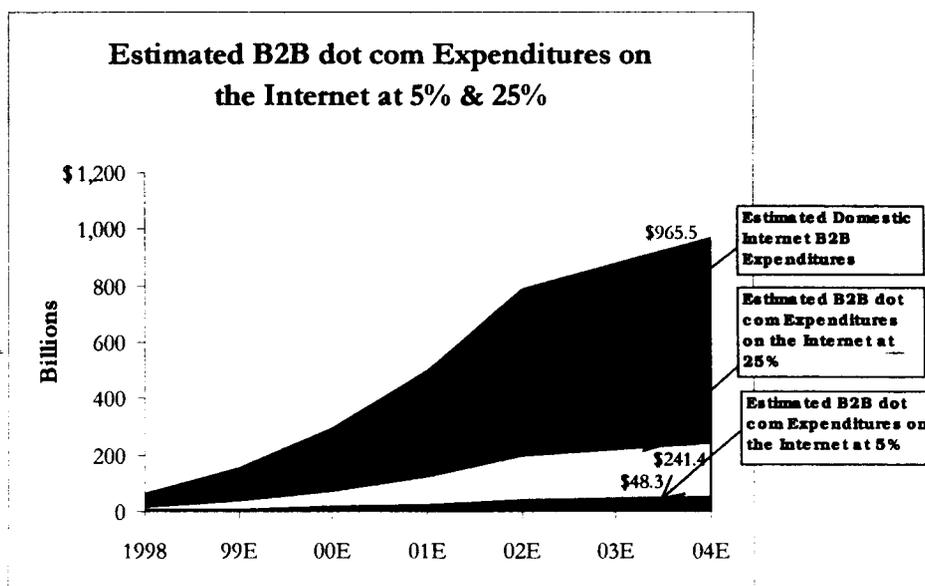
Source: Direct Marketing Association's Statistical Fact Book, 1999 & TWP B2B Internet Research

### 3. Total Addressable B2B "dot com" Market

We believe the addressable market represents the dollars that can realistically be captured by the new B2B "dot coms". These numbers represent the sum of all efficiencies that can be gained by a company switching to a new B2B market entrant. The assumptions used in the calculation of this number are as follows. First, the "dot com" is not reporting its revenue on a gross basis but on a transaction fee basis. Also, it assumes no disintermediation. Accordingly, the "dot com" is not counting the entire value of transactions that pass through its system, or product solution as revenue. It is only counting the transaction fee or commission it generates from each transaction as revenue.

These transaction fees can be thought of as the efficiencies reaped by the company engaging the dot com. The company is willing to pay this fee for the service provided by the dot com. Some efficiencies would include a reduction in a company's sales force or perhaps a decrease in the number of procurement agents.

An additional, yet more subtle, aspect of the addressable market is the opportunity cost of doing business the old way. For example, the time it takes a salesperson to get the appropriate person on the phone, structure and execute a deal could be long and tedious. It is this foregone opportunity that can be considered an additional cost of doing business and therefore can be added to the addressable market size. The following graph assumes the new market entrants can capture anywhere from 5% to 25% of the B2B e\*Commerce market.



Source: Direct Marketing Association & TWP LLC B2B Internet Research

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The concept of the B2B addressable market can be further clarified using a real world industry example. Please see Appendix A for a case study on the addressable market of the commercial printing industry. This case study supports our thesis that the projected addressable market is only 1% of the total traditional market.

### **Drivers of the Addressable Market**

Since the addressable market is such an important component of the market sizing, we have highlighted the major drivers of the addressable market below. Again, these are the areas in which we think B2B companies can reap efficiencies for their customers. Drivers of the addressable market stem from multiple areas. The areas that we feel are of particular interest are as follows: lowering of sales cost, lowering of procurement costs and price discovery. These areas represent the major areas of impact a new B2B entrant can make.

**Lowering of Sales Costs.** One of the most obvious efficiencies stemming from a B2B player entering a particular channel is a reduction in sales costs to the seller. The Internet provides a medium by which suppliers can list their inventory in a low cost format. Also, suppliers can complete the sale without the typical paperwork that pervaded traditional business processes. Web-based sales might translate into a 20% reduction in the sales force or at least a reduction in the time required by the existing sales force to generate a new business opportunity. Other areas for head count reduction include customer service representatives. These small and incremental efficiencies will eventually add up and contribute to forming what will be the addressable market. This effect can ripple through the entire channel structure affecting the sales force head count for each player in the value chain.

**Lowering of Procurement Costs.** Procurement costs are driven by time and effort required for execution. Making an informed decision requires a vast amount of information gathering and processing before a conclusion can be reached. Historically, this has been done using the phone and fax machine or through a legacy EDI system.

With the advent of procurement solutions providers, companies can now aggregate their current supplier base as well as gain exposure to other suppliers through the provider's network. The provider's system allows a company to instantly gain access to thousands of suppliers as well as harnesses the client company's purchasing power to obtain the best deal for any particular item. The primary benefit of using a procurement solutions provider is lower procurement costs. These benefits could come in the form of a reduction in procurement staff or perhaps in savings from phone and fax processes. The exact amount by which these costs are lowered can be added to the efficiencies brought to the market by the B2B e-commerce company. These savings will contribute to the assessment of the addressable market for the industry in question.

**Price Discovery.** The Internet has the power to locate market price by encapsulating a more broad perspective of supply and demand for a certain good. Many B2B "dot coms" perform this function, which allows the buyer to reduce search costs and find new business partners with whom they can now transact. For example, Aداuction provides a more precise price discovery mechanism for both the advertising buyer and seller. The

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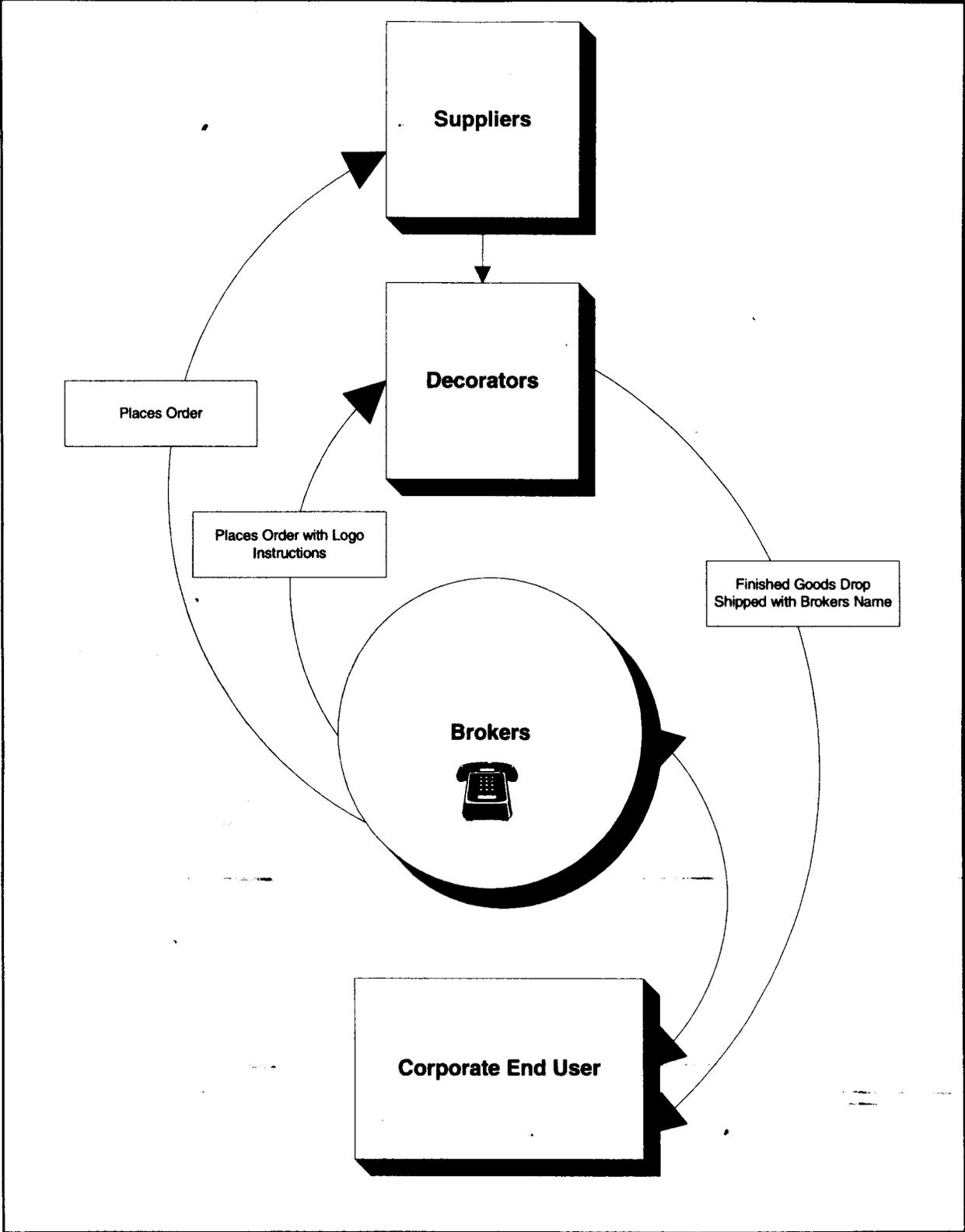
site enables the seller of a specific piece of advertising space to reach a larger market and therefore find the true price that buyers are willing to pay. For the buyer of advertising, the site allows for a broader reach in terms of finding the prevailing price for any number of advertising mediums. By coordinating the efforts of many buyers and sellers of advertising, Adauktion can extract the true market price for any number of products in the advertising media sector.

### **Disintermediation Expands the Addressable Market**

Disintermediation can be a powerful component of the addressable market. Disintermediation results from the elimination of inefficiencies in the channel. Often times, a B2B e-commerce company identifies a channel participant who contributes little value added service to the end product. The primary purpose for this entity's existence might be to simply link other channel participants who do not have the resources to locate business partners. It is often the case that brokers of any sort fulfill this function of linking buyers and sellers together. If one is trying to find the addressable market for a company that is disintermediating, the revenue reaped by the traditional broker would be an excellent starting point.

A good example of a disintermediation B2B company is Branders.com. Branders.com is in the corporate promotional products market. Corporate promotional products include anything from custom coffee mugs to golf shirts with a company logo. Branders.com noticed the highly fragmented market of custom product buyers, manufacturers, distributors and resellers that represented the promotional product fulfillment process. The following diagram demonstrates the traditional flow of a custom promotional product transaction.

**Traditional Promotional Product Flow**



Source: Branders.com & TWP B2B Internet Research

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The diagram demonstrates the degree to which the broker is entrenched into the system. The suppliers are typically small foreign manufacturers that lack the resources to personally maintain an adequate number of business relationships. The decorators (those who complete the final value added service of imprinting the logo) are equally small and fragmented, with the largest player accounting for only 4% of the market.

Branders.com links manufacturers directly with the end-user resulting in immediate disintermediation of the brokers in the channel. As brokers become dislodged from their position, this will slowly evolve into the addressable market for the new B2B "dot com" player. Again, the market for this company is not the entire promotional products market; rather it is merely the value coming from those players who are disintermediated. In 1998, \$13.2 billion of promotional products were sold through brokers. The \$13.2 billion represents Branders.com addressable market.

This point can be further clarified by providing the counter example to Branders.com. By this we mean a new B2B "dot com" that is not providing an alternative solution to the end user, but merely replacing the fax machine with the browser. For example, IMX Exchange is an intermediary between traditional mortgage brokers and lenders. Traditionally, mortgage brokers received rate quotes from mortgage lenders via fax. IMX Exchange merely posts the same data on a web site. Moving the current business process from fax and phone to the web is not enough in the long run. We like to see a greater jump from the status quo than simply moving a fax process to the web.

### **New Market Creation Expands the Addressable Market**

We like B2B companies that use the Internet to create an entirely new market. A popular example from the C2C market is eBay. eBay provides millions of individuals with a market to sell formerly unmarketable possessions. A similar scenario has developed in the B2B e-commerce market. This has primarily come in two forms. The first is a secondary exchange and the second is yield management.

**Secondary Exchange.** A secondary exchange emerges when there is a supply of goods that can no longer be put to productive use by their current owners. For example, suppose a warehouse operator has purchased a new forklift and is now exploring the opportunity to sell the old one. There are limitations to the operator accomplishing this because of costs involved in gathering information about prospective buyers as well as disseminating information to the market about the item for sale. The operator does not have the time or the inclination to seek out the highest bid possible for the forklift.

As buyers and sellers did not have a ubiquitous marketplace, significant revenue went unrealized. These idle goods constitute the "new market" opportunity. The aggregating power of the Internet creates a viable market for valuable, idle product.

Certain B2B e-commerce firms have identified the inefficiencies in the traditional relationships described above and have targeted this space as one of the many new promising opportunities provided by the web. The market for used industrial equipment is approximately \$1 trillion (Source: Liquidation.com). Roughly ten percent of this market is auctionable. One of the largest real world business surplus auction firms, Ritchey

**Idle goods constitute the "new market" opportunity.**

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Brothers, moves approximately \$1 billion worth of goods per year. This accounts for only 1% of the total auctionable equipment business. Entrepreneurs have spotted this opportunity and formed companies to allow buyers and sellers to locate each other via the Internet. Examples include: DoveBid, ZoneTrader, Liquidation.com, and TradeOut.

We would classify these companies as the creators of a new market in that buyers and sellers can now interact in a market that formerly was not completely optimized. They are not providing an enhanced version of an existing application. Prior to their existence, there simply was no completely efficient marketplace for business surplus, often placing the seller in a situation where a desperation sale is the only alternative. By aggregating all of the pertinent information, a market has truly been fashioned from nothing. There are many applications to this approach for market creation. Anywhere resources go unused simply because the cost of information gathering outweighs the value of the surplus, provides an opportunity for the web to make a market.

**Yield Management.** The second version of market creation is a variation on yield management. The logistics industry provides a convenient example of an ideal application for this idea of market creation. Every year \$31 billion worth of trucking space goes unused in the U.S. One company has identified this as a window of opportunity. The National Transportation Exchange (NTE) provides a real-time, neutral platform for member shippers to post available trucking capacity which can then be searched by those who have goods to transport.

NTE allows members to interactively match desirable rates for shipments by quoting a confirmed price for approval before it is committed by the shipper, or accepted by the carrier, in the electronic marketplace. When the delivery of the shipment is confirmed, NTE pays the carrier and invoices the shipper. The company also provides a full range of services including qualifying exchange participation and transaction settlement.

### **The Channel Participants Are Technologically Savvy**

We believe industries that are technologically savvy will likely adopt B2B e\*commerce solutions before those that are less savvy. For example, we think professionals in the telecommunications industry will likely trade on the Arbinet exchange before farmers adopt the Farms.com solution. If the target market is not on the Internet or nascent to e\*commerce and purchasing via the Internet, the marketplace will likely remain desolate.

We think the order in which certain product categories will be adopted in B2B will mirror the order of product-category adoption in the B2C space.

For example, in the content category, CNET was one of the early Internet-content companies to be adopted. CNET's focus on being the leading content provider to technology consumers was a natural fit for early adoption since the majority of CNET's viewers were already connected to the Internet. Similarly, in the B2B space, we believe content providers who focus on technology-related sectors will be some of the first companies to be adopted in the B2B space. For example, pcOrder provides content and commerce services about PCs to manufacturers, distributors, and retailers of computer products. PcOrder has already come public and reported revenue of \$24.9 million for

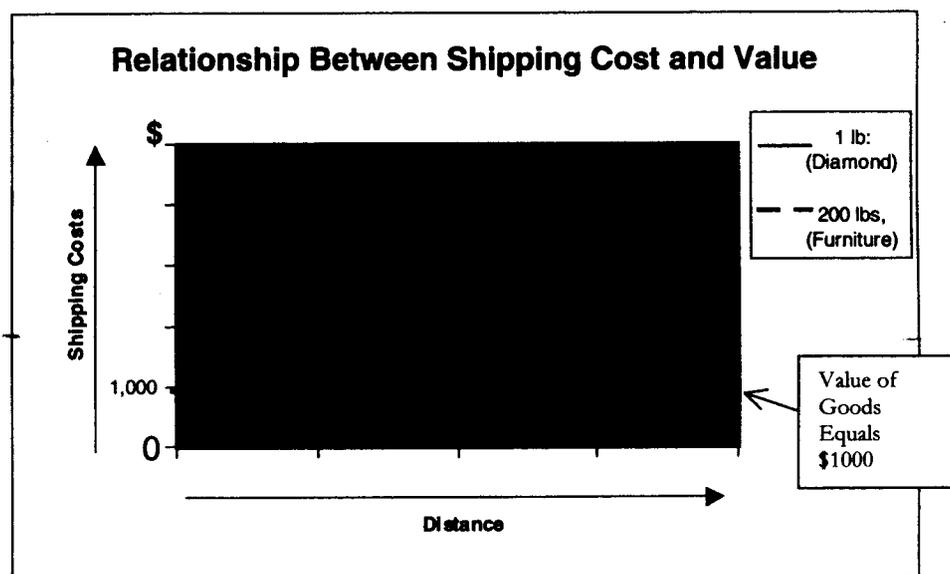
fiscal year ended December 1998. Since pcOrder's content and commerce focus is on a technology-related space, we believe it has been able to get to market with its product much sooner because its clients are more technologically savvy.

Conversely, we believe World Commerce Online, which is an online content and commerce provider to the wholesale floral industry, will have a harder time in the early stages of its business gaining adoption primarily due to the fact all the players in the wholesale floral channel are not connected to the Web yet. Although we think the prospects for an online intermediary in the floral space are large, we believe it will take longer to get all of the participants on a computer – much less on the Internet.

### The Commodity Being Traded Has a Favorable Relationship Between Shipping Cost and Value

We like businesses that have a favorable relationship between shipping cost and value. The relationship between shipping cost and value demonstrates the relationship between the logistics costs and the value of a good. It serves as a tool to quickly gauge what might be involved in executing the transaction between buyer and seller in its entirety.

Clearly, the lower the ratio between value and shipping costs, the more the investor must scrutinize the savings and efficiencies claimed to be realized through e\*commerce. This is because a ratio of less than 1x indicates that the shipping costs exceed the value of the good itself. The following graph demonstrates this conceptual idea.



Source: TWP B2B Internet Research

The above graph is an example of the dilemma presented by items that have a low relationship between shipping cost and value. The thick line at \$1000 represents the value of the two separate goods at different weights. For example, assume a package of diamonds worth \$1,000 weighs one pound. Regardless of how far the package is shipped, the shipping costs do not exceed the value of the package. Conversely, assume a \$1,000

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**The investor must consider the average savings provided to the buyer using an online exchange and weigh that against any additional transportation costs associated with delivery of the good.**

piece of furniture weighs two hundred pounds. Shipping this item would call into question the profitability associated with shipping goods further than 1,000 miles. That is, the shipping costs begin to exceed the value of the furniture itself.

Conversely, a commodity that is very bulky yet inexpensive relative to its weight, such as raw materials, provides a good example of a product yielding a low ratio between shipping cost and product value. The shipping costs associated with these types of goods can easily begin to increase exponentially as the distance between the buyer and seller increase. The investor must consider the average savings provided to the buyer using an online exchange and weigh that against any additional transportation costs associated with delivery of the good. Is there a net benefit to engaging the exchange and discovering new business partners if the logistics costs could potentially exceed the value of the good?

For example, eBay has recently announced that it has opened additional web sites designed specifically to cater to a particular geographical area. eBay now operates over 30 regional web sites designed to reduce the problems associated with shipping heavy or fragile items. We think eBay realizes that it does not make sense for someone to purchase a grand piano on the West Coast if they have to pay for shipping to the East Coast. These shipping costs will most likely far exceed any savings generated from the client using the web-based auction system. We think eBay's initiatives serve as a leading indicator for what many of the B2B companies will have to do to address product categories with a low relationship between shipping cost and value.

### **Perishable Commodities are Preferred**

**The Internet is the perfect medium for suppliers to market expiring products and receive better pricing.**

Perishable commodities are goods or services that decrease in value with the passage of time. Often these products are sold at deep discounts to quickly move the product or utilize the service. Suppliers receive depressed prices as they are unable to quickly display product and availability to an aggregated base of buyers. The Internet is the perfect medium for suppliers to market expiring product and receive better pricing. These goods or services can be physical or digital.

Physical perishable products include flowers, plants, beverages, fruit, meat or seafood. A company called World Commerce Online has created a product called Floraplex to quickly move plants and flowers through the multi-tiered and lengthy distribution channel.

Digital goods and services are susceptible to expiration versus spoilage in the case of physical goods. Companies such as Aduaction, Arbinet and NTE have designed marketplace solutions for the efficient placement of advertising space, excess minutes and truck capacity, respectively. The value of the above products and services decreases as time passes. This attribute increases the speed at which that good or service must be sold.

The Internet's ability to introduce new buyers to new sellers is particularly important when dealing with perishable commodities. The Internet can facilitate the sale of product that historically would have gone unused. For example, Arbinet developed an exchange for unused telecommunications minutes. When long distance carriers expanded capacity to handle peak business hours to address increased demand, a glut of unused capacity on evenings and weekends resulted. With the company's trading system, it can efficiently

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place much of this unused capacity in the hands of international businesses looking for cost savings on long distance.

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## **COMPANY FACTORS**

### **No Significant Behavioral Change Required From Prospective Customers**

**Contextual Commerce.** The concept of contextual commerce is to thoroughly understand the needs of the customer before designing an e\*commerce solution so that the end product will have value, meaning and relevance to its targeted client. In order to do this, one must consider the day to day activities of the person most likely to be engaging the B2B marketplace. The user must not feel that new and more complex tasks are being placed on them, rather the solution must be viewed as simply a tool that will aid the completion of their current tasks. It is an understanding for the current methodology employed by the supply chain that will give a B2B company an advantage over the competition.

### **How Is Business Currently Being Done?**

We believe the best way for the B2B company to determine how to assist a client is by watching the potential user during a typical workday. Understanding a day in the life of someone who is being targeted by the system will make designing for the appropriate conditions much more effective. Determining how they spend the majority of their time, what sorts of tasks cause bottlenecks in the workflow are items that need to be understood prior to launching a service. The critical path in anyone's day provides an opportunity for the e\*commerce company to provide a solution that will save time and money.

For example, a single person operating in any department has the ability to order a pen. Perhaps this is done through an assistant who will fill out a requisition form and then submit it to the purchasing department. The designer of a procurement system would be wise to take note of who typically orders pens, how often and in what quantity. An appropriate system in this scenario would allow the assistant to access a catalog via a web browser and order the pen electronically. It is important to note that this system does not change the workflow of the organization and leaves everyone empowered as they were prior to the change. The purchasing capabilities have been left decentralized as they were before. The only change is that now the person ordering the pen can do so from their desktop browser instead of in a paper format. Of course, the system would have certain features that flag out of the ordinary purchases so that maverick purchasing will not take place. The idea is to empower the user with the same functionality as they had before the system implementation while at the same time curbing the potential for abuse or costly mistakes due to human error. This type of system allows the user to concentrate on the critical elements of their work and simply provides a user-friendly method of making certain mundane tasks less burdensome.

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e\*Commerce solutions that require substantial training and changes to peoples' ingrained daily workflow will face a longer adoption cycle or possibly will be entirely rejected. The system must be non-obtrusive and possess the ability to be easily integrated into the day to day responsibilities of the user.

Ariba provides an example of a company that addresses the "contextual commerce" of the user. The Ariba network allows for decentralized purchasing which was the way most companies operate in terms of procuring Horizontal-type supplies. The user is given a new way of ordering office supplies and other MRO items in an easy to understand, low impact format that requires minimal behavioral change.

## **The Management Team Has Domain Expertise**

### **The Importance of the Management Team**

We believe that one of the most important components of a successful business model is a strong management team that has domain expertise in the channel in which they operate.

Domain expertise is especially important when the company is attempting to establish itself in a vertical position. By this we mean that vertical markets are often populated by people with a highly focused knowledge base. Navigating through such a space requires management's ability to speak the language of that channel so that complex ideas can be rapidly communicated and understood.

Additionally, B2B companies need to be able to sell at a high level in the channel. Since adoption from the entire supply chain is so critical, the B2B company's CEO must be able to open doors at the CEO level of the different traditional companies in their vertical market.

### **An Adoption "Spark" is Critical in the Early Stage of the Business**

The spark is the initial event that attracts the first customer. Often times, the trading exchange models get stuck in the "chicken and egg" phenomenon. The spark is the thing that stops the chicken and egg phenomenon and allows the business to propel through the initial period of adoption. The cause of the spark is the component of the company's value proposition that is the most important to the end customer.

An example of how one B2B e\*commerce company found its spark can be drawn from Adaction. Adaction has pinpointed certain shortcomings in the way advertising media is bought and sold. The company realized how highly fragmented this market was, which resulted in great inefficiencies in the distribution of available media resources. It was the lack of information by all players involved that prohibited market efficiency. By implementing a bidding process for a number of advertising mediums, Adaction has enabled buyers and sellers of media to aggregate in one virtual location and conduct their buying and selling in a more informed and efficient environment.

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The spark that caused this company to draw market attention can arguably be distilled down to one event. One of the first experiments conducted by the firm was the auctioning off of an ideally located, premium quality billboard. Of particular note is that this board was owned by a small, lesser known company that probably felt limited in its exposure to the media buying universe. After drawing great interest from a wide variety of media buyers, the billboard was auctioned off at a 35% greater rate than its previous contract value. This could only have been accomplished by Adauktion's ability to disseminate information regarding the existence and availability of the product as well as enabling all interested parties to actively bid for the board.

It is this type of incident that can generate a buzz around Adauktion and accelerate the adoption cycle of the product offered. At the end of the day, the seller is attracted by the superior price and ease of execution provided by the Adauktion platform. In this case, the spark was information regarding price discovery for the seller of the billboard.

### **The Value Proposition Is Quantifiable to the Buyer and Seller**

**Bundling numerous value-added services should not be misconstrued as a value proposition.**

We define the value proposition as what notably improves the current business process within an industry. Examples of real value propositions in the B2B space include cost savings, time reduction, beneficial labor displacement, process simplification and improved execution.

In determining the validity of a company's value proposition, we concentrate on two main themes. First, what is the unmet need or problem in the channel? Second, how does the company's value proposition address that unmet need and/or solve the problem in the channel? There should be a clear link between the industry problem and the value proposition offered by the company addressing that problem.

Investors should separate the core value proposition from the value-added services surrounding the actual value proposition. For example, the value proposition offered by Adauktion is the material cost savings created by the auction-format while risk mitigation and advanced searching technologies represent value-added services. Bundling numerous value-added services should not be misconstrued as a value proposition. Although value-added services complement the value proposition and may improve customer retention, they are not sufficient to attract and maintain a fully transactional critical mass of buyers and sellers.

| Company               | Channel | Problem in Channel  | Value Proposition to Address Problem   | Value Added Services   |
|-----------------------|---------|---|--|--|
| Adauktion             | Media   | <ul style="list-style-type: none"> <li>Exclusion Of Small Media Buyers To Prime Media Space</li> <li>Lack Of Market Liquidity</li> <li>Inequitable Pricing</li> <li>Long-Term Exclusionary Contracts</li> </ul> | <ul style="list-style-type: none"> <li>Incremental Revenue To Seller</li> <li>Market Liquidity</li> <li>Equitable Pricing</li> <li>Increased Breadth To Buyer</li> </ul>   | <ul style="list-style-type: none"> <li>Advanced Searching Technology</li> <li>Report/Invoice</li> <li>Inventory Request</li> <li>Tracking</li> <li>Dynamic Pricing</li> <li>Risk Mitigation</li> </ul> |
| Arbinet               | Telecom | <ul style="list-style-type: none"> <li>Perishable Excess Capacity Wasted</li> <li>Lack Of Price And Buyer Discovery</li> <li>One On One Negotiated Buying</li> </ul>  | <ul style="list-style-type: none"> <li>Incremental Revenue</li> <li>Allowing Buyers To Access Best Rates And Routing Options Without Having To Negotiate And Contract Each Carrier</li> <li>Significant Cost And Time Savings</li> </ul> | <ul style="list-style-type: none"> <li>Process Automation</li> <li>Authentication</li> <li>Authorization</li> <li>Least Cost Routing</li> <li>Placement</li> <li>Settlement</li> </ul>                 |
| World Commerce Online | Floral  | <ul style="list-style-type: none"> <li>Lack Of Financing For Grower</li> </ul>  | <ul style="list-style-type: none"> <li>Digital Financial Link</li> </ul>   | <ul style="list-style-type: none"> <li>Transparent Inventory Tracking</li> </ul>   |

Source: TWP B2B Internet Research

The Internet creates a communications medium, which will allow for the automation of all paper-based procedures eventually. For this reason, we do not feel that automating an existing paper-based process creates enough of a value proposition to justify a new channel participant. We believe eventually, existing channel members will be compelled to migrate current supply-chain procurement processes to the web to remain competitive. For this reason, automating a labor intensive or paper-based process is more of a value-added service than a core value proposition.

### Value to Both Sides of the Purchasing Equation

The company must provide a value proposition to the buyer as well as the seller. A successful marketplace has to achieve critical mass in order to drive enough transaction volume to become profitable. In order to achieve critical mass, the company must compel both the buy-side and the sell-side to join the marketplace.

- The Buyer's Value Proposition- The two most prominent value propositions cited by purchasing officials using the Internet are cost and time. Buy-side value occurs in the form of headcount reduction, product cost reduction, and lower cost of processing.
- The Supplier's Value Proposition- In our opinion, what drives suppliers to participate in a B2B marketplace is the exposure to an assembled target market that they were formerly unable to reach. This should result in increased revenue. In

addition to the increased revenue, the customer acquisition cost falls as sales and marketing expenditures are lowered.

**“Most user organizations surveyed by Aberdeen Group were able to realize more than a 300% return on investment (ROI) in Internet Procurement automation within the first year of deployment.”**

*Aberdeen Group*

### **An ROI Analysis**

It is one thing to identify the value proposition, but can the solution really produce tangible ROI? Any reduction in the cost of procurement flows immediately to the bottom line; however, does the annual incremental increase in cash outweigh the initial multi-million dollar investment? Also, we have to consider that any decrease in purchasing costs or increase in supplier revenue is somewhat offset by the transaction fee taken by the marketplace. In order to quantify the ultimate value of using an Internet marketplace, we identified the key drivers that should be part of a customer ROI analysis.

### **Buy-Side ROI Drivers**

The following is a list of what we believe are the most significant drivers to achieving positive buy-side ROI.

- **Reduction in Cost of Product.** By controlling maverick, or “off-contract” purchasing, B2B marketplaces can facilitate actual product cost savings by enabling corporations to track the company-wide purchases.
- **Headcount Reduction.** The most tangible form of buy-side cost reduction is headcount reduction. If a company can reduce its procurement department headcount by 10 people at a savings of \$50,000 per person, the result is \$500,000 to the bottom line.
- **Reduction in Inventory Costs.** With real-time, dynamic pricing and XML compliant data, companies can use a B2B e-commerce marketplace to significantly reduce purchase and fulfillment cycles resulting in potentially a 25%-50% drop in inventory costs according to Aberdeen Group.

### **Supply-Side ROI Drivers**

The following is a list of what we believe are the most significant drivers to achieving positive supply-side ROI.

- **Reduction in Customer Management Costs.** The real-time nature of marketplaces allows for more efficient customer management through simultaneous information updates and lower customer service requirements.
- **Fewer Mistakes.** As human data re-entry and order processing is eliminated by the marketplace, so are the number of errors. Order input errors are extremely costly and result in increased returns and fulfillment costs. These costs can be eliminated by minimizing the human interaction and automating the process electronically.
- **Revenue Enhancements.** In our opinion, this is one of the most attractive value propositions for the suppliers. For example, the potential for access to Commerce

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One's buying community motivates suppliers to pay anywhere from \$0.25-\$2.00 per transaction contingent upon volume. Increased revenue can result from increased access to new clients and increased penetration of existing clients. The cost associated with this increased revenue is the transaction fee associated with the order. Not only are there transaction fees associated with the incremental orders, but transaction fees also apply to the existing businesses. Please see Appendix B for a case study showing how Eastman Chemical's implementation of Commerce One's solution generated a 126% ROI within ten months of implementation.

### **B2B Companies Adhere to Our "B2B Technology Best Practices"**

In order for a B2B e-commerce company to accommodate a critical mass of buyers and sellers, we believe the company must have a functional and scalable technology platform. Below is a summary overview of the core best practices that we think B2B companies should adhere to when designing their platform. Please refer to the section titled "B2B Technology Best Practices" for a more detailed overview of the best practices discussed herein.

1. **Ability to handle unstructured data.** – We believe companies must be able to facilitate data that does not have predictable patterns or consistent attributes.
2. **Ability to handle static product data.** This type of data is usually product data that can be attained from traditional catalog companies; however, the difficulty lies in normalizing the disparate data formats from multiple suppliers and distributors.
3. **Ability to handle dynamic product data.** The most common form of dynamic data is price and inventory availability. Optimally, companies will accurately represent price and inventory changes from suppliers in real time.
4. **Strong commerce engine.** The e-commerce layer of the back-end architecture should be able to handle the following core applications: dependable price and availability data, invoicing, purchase order submission, approval submission, payment cycle calculation, financing functionality, logistics functionality and insurance functionality
5. **Clearly defined and coded business rules.** –we believe a B2B company should provide the virtual counterpart to the normal approval process and business rules present in the traditional procurement process. For example, if non-exempt employees are not authorized to make purchases in excess of \$1,000, then the business rules would be written to reflect that dynamic.
6. **Open architecture.** Suppliers and buyers often times will have completely different pre-existing systems in place thus making back-end real time connectivity difficult. It is critical that a B2B company offer customers a solution that will connect with current enterprise infrastructure investments.

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7. **Parametric Search Capability.** -In B2B it is critical that business buyers have the ability to search by multiple attributes. Parametric search functionality allows users to conduct searches for products based on multiple metrics.
  8. **Ability to handle managed catalog and open supplier architectures.** B2B companies should have the dual capability to handle managed catalog (behind the firewall) and open supplier architecture (outside the firewall) environments as customers could demand either or both.

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## **BUSINESS MODEL FACTORS**

### **Use the Internet to Exploit the Channel**

**Who is the “gorilla” in the channel and where are the inefficiencies?**

We believe a detailed analysis of the relevant operating channel is important in terms of understanding a company’s potential for success. This is because a channel study often leads to ideas about where the inefficiencies lie in the channel structure. Locating these inefficiencies is important because this is most likely where the Internet is able to provide the most value. Often the channel is very convoluted and difficult to dissect due to high fragmentation among the players in each link of the value chain. The examination of the pertinent channel is designed to uncover two things: (1) who has the power in the channel and (2) where the inefficiencies are in the channel? In other words, who is the dominant player (“gorilla”) and where are the inefficiencies in the channel? We think if the channel has a huge gorilla with significant market share, then it is important to “bag the gorilla” as part of the channel strategy. Please see Appendix C for a case study that shows how Commerce One is using the “bag the gorilla” strategy to solve one of the more difficult problems in B2B: supplier adoption.

### **Lower the Inefficiencies**

In addition to looking for where the power lies in the channel, we also look for the inefficiencies. Our case study of the steel industry has revealed two potential areas that might serve as a target for a “dot com”. These two areas are steel factory capacity and information pertaining to excess steel. Please see Appendix D for the Steel Industry Channel Analysis case study highlighting the underlying inefficiencies in the value chain.

### **Have a Defensible Channel Strategy**

The following discussion incorporates two of the attributes that we believe are required for a successful B2B company: the defensible channel strategy and the importance of gross margin as it relates to that channel strategy. In the following case study concerning the life science products industry, we show that by establishing exclusive supplier contracts, as a channel strategy, creates a formidable barrier to entry. We will also show how the higher the fragmentation of the channel, the higher the gross margins will likely be over the long term.

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We believe it is very important to clearly identify a company's channel strategy so that the long-term prospects of the firm can be reasonably assessed. This process begins with examining the respective channel, void of the new "dot com" entrant. Once a sense of the existing operating environment is established, it becomes easier to understand the approach taken by the new firm. This methodology allows one to determine whether a company has established a defensible channel strategy, which we feel is vital to any company's survival.

It is also very important for a new "dot com" entrant to target a segment of the market that will provide the gross margins necessary for a sustainable future. In the B2B universe however, the available margins are not always easy to identify, making it extremely difficult to correctly position a company for long-term success.

Appendix E examines two companies that are each taking distinct approaches to securing a position in the life sciences product market: Chemdex and SciQuest. Chemdex and SciQuest are both operating in the same channel but these two companies have positioned themselves in different ways both in terms of their channel strategy as well as identification of favorable gross margins. Each company is intending to fulfill the same fundamental function, which is to make purchasing life sciences products equipment easier and less costly. Chemdex has chosen to focus its partnership efforts on distributors while SciQuest has directed its attention toward establishing direct relationships with certain suppliers. The case study in Appendix E shows how differing strategies can have a material impact on gross margins. We also show how the direct relationship between high supplier per unit sales and marketing costs and the resulting gross margin that the B2B exchange can achieve.

### **Go Where the Margin Is**

It is vital that a business identify a market with favorable gross margins or have a value proposition that allows them to continually expand their gross margins. We also like businesses that have high long-term profit potential. We think most B2B e-commerce companies will have similar operating expense characteristics in terms of sales and marketing expense, general and administrative expenses and research and development expenses. Accordingly, we think it is important to focus on the gross margins of these businesses.

In trying to determine the exact margin of a company, several factors apply. First, there is the accounting issue of whether the company books gross revenue or net. If the company books gross revenue, such as RoweCom, Inc., the gross margin is a critical metric. When a company books revenue net of cost of good, then gross margins composition is not as critical.

We highlight the importance of understanding the relevant accounting issues associated with these new B2B models. Often times, the company is forced to account for revenue on a gross basis because the accountants treat their business more like a distribution company than an Internet company. For example, the EITF (Emerging Issues Task Force) uses the following criteria to determine whether a company must book revenue at gross or at net.

| Gross Revenue                     | Net Revenue                          |
|-----------------------------------|--------------------------------------|
| Take title to the good            | Do not take title to the good        |
| Accountable for returns           | Not accountable for returns          |
| Bears financial risk upon default | Bears no financial risk upon default |
| Sets the price                    | Does not control the price           |

Source: TWP B2B Internet Research

For a more detailed discussion of the recent accounting issues as they relate to revenue recognition for B2B companies see our discussion of Internet Accounting in the section "Internet Accounting Overview."

### **Know How To Monetize The Value Proposition**

One of the underlying strategies of any B2B e\*commerce company is to eventually take a piece of every transaction that is executed through its system. The evolution of this process might begin with the e\*commerce company establishing itself as the dominant provider of a community and content web site pertaining to a certain topic or industry. Or, the company might also attempt to sell software that enables a specific business process to take place in a more friction free environment. Both of these approaches are potential methods used by companies to attack the market.

As the value provided to the end user becomes more apparent, the B2B player can begin to monetize this value in the form of a transaction-based revenue model. Some companies have completed this business model evolution, while others are continuing to search for the best way to monetize their value proposition and their value-added services to the client. What follows are three examples of companies monetizing their value proposition.

#### **— Software is Free but Charge for the Transaction —**

Chemdex was one of the first companies to bring the life sciences industry to the web. Laboratory scientists and procurement agents, from a variety of disciplines, logged on to escape the exhausting process of purchasing lab supplies and equipment. The life sciences sector is highly fragmented and populated with a vast number of scientists and technicians. The amount of product information needed to serve even a fraction of the participants can fill volumes of product guides and catalogs. For even one single experiment, locating the correct product could take an hour or two out of the researcher's busy schedule. This was the window of opportunity, which first led to the birth of Chemdex.

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Chemdex presents its value proposition through the consolidation of an incredible amount of product data pertaining to life science industry and offering that information to qualified users via the web. The company has listed over 240,000 products on their website originating from more than 120 suppliers. By aggregating, then webifying, this ocean of information, the company positioned itself as one of the few gateways to the emerging online procurement solutions for the life sciences industry. These are elements to the value chain that address the needs of the enterprise, the researcher and the supplier. The enterprise can automate a large majority of its supply needs freeing up more time to be spent on its core pursuits. The value presented to the researcher is the ability to order specific supplies in a quick and dependable manner. Finally, the value to the supplier is exposure to an increased buyer market while allowing for exclusive relationships to continue as before.

An enterprise will need to develop an in-depth relationship with Chemdex when it decides to place its procurement process in the hands of the e-marketplace. The system requires on-site configuration and customization by a team of Chemdex consultants. Proprietary software must be installed before the entire value proposition can be realized by the enterprise. In the case of Chemdex, its primary value proposition is the procurement package they provide to buyers yet they monetize that value proposition in the form of a transaction fee for the sale of products at their online marketplace.

As the Chemdex method of purchasing lab supplies becomes engrained into the everyday business of the end user, we believe Chemdex will be in a better position to take a transaction fee from each party's business dealings. This will only take place if the users of the Chemdex solution believe that value added is greater than the transaction fee. The company will have moved from an online aggregator to a software provider in the short course of a few years. This could be a tactic for gaining a steady foothold in the life sciences space that could be leveraged to establish a transaction fee model in the future.

#### **First Software, Then Transaction Fees**

Another example of a company that has an evolving monetization strategy is Impresse.com. Impresse provides B2B corporate printing solutions. The solution allows users to manage the entire print process from origination to execution via a web browser. The company initially focused on selling software that provided the user with certain value-added services. The software aids in the integration and automation of various segments of the printing value chain. Once this process can be executed through the web, assuming there is sufficient critical mass in terms of adoption, the company can begin to focus on generating revenue on a transaction based revenue model. In the case of Impresse they provide two value propositions: the sale of procurement software and the ability to effect a transaction on its web site. Impresse is still trying to determine the best way to monetize its two-fold value proposition: license fees or transaction fees? We think ultimately the market will decide.

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### **First Transaction Fees, Then Software**

The contrasting example to Impresse's movement towards a transaction based revenue model is the National Transportation Exchange or NTE. NTE provides an exchange for excess trucking capacity that would otherwise go unused in the United States. Initially, the company was focused on taking a transaction fee for the surplus capacity that was sold over its network. It seems, however, that the company is now focused on providing its clients with the software that enables participation in the Exchange. This process takes time on an individual level and becomes even more time consuming in terms of reaching critical mass for the entire company. This is perhaps the reason that the company has had to change the focus of its revenue model from transaction-based to software sales. Until the number of users actually engaging the solution begins to gain traction, the applicability of transaction revenue becomes increasingly diminished.

These three examples, Chemdex, Impresse and NTE all help to demonstrate the progression that typically accompanies a B2B e-commerce company on the road to a transaction-based revenue model. Numerous B2B e-commerce marketplaces have found the only way they can amass buyers is initially through the sale of software. Once this is accomplished, reaching critical mass becomes much easier because the buy-side is in place, which, in turn, helps with supplier adoption.

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## **SECTION 2: B2B TECHNOLOGY BEST PRACTICES**

In this section, we will lay out what we believe to be the technology best practices for B2B companies. This discussion will be highly interrelated to our discussion of the B2B enablers as many of these best practices are being facilitated by the technology enablers for Internet – based B2B transactions.

We believe there are eight key ingredients necessary for a successful B2B technology architecture. They are as follows:

1. Ability To Handle Unstructured Data
2. Ability To Handle Static Product Data
3. Ability To Handle Dynamic Product Data
4. Strong Commerce Engine
5. Clearly Defined and Coded Business Rules
6. Open Architecture
7. Parametric Search Capability
8. Ability To Handle Managed Catalog And Open Supplier Architectures

Later in this section we show a diagram of how these best practices are interrelated in the electronics industry.

### **1. Ability to Handle Unstructured Data**

Unstructured data are any type of data that do not fall into a certain predictable pattern. For example, industry news and job postings are both examples of unstructured data. Often times an e\*commerce company will partner with someone who specializes in these types of data instead of doing it themselves. Verticalnet and CMP Media are examples of companies that provide unstructured data.

### **2. Ability to Handle Static Data**

Static data are any kind of data that do not change frequently. For example, product description data are fairly static in that they do not change on a day to day basis. Most of the data components that we will highlight relate to data about products and / or inventory. Different types of static data include the picture of the product, the description of the product, the weight of the product, etc. Often times, B2B companies will partner with a traditional product catalog company to gain access to this type of data

The greatest challenge of dealing with static data is less about getting the data and more about getting it taxonomized in a consistent format. For example, certain B2B companies have had to hire Ph.D's with the requisite domain expertise whose sole function is to aggregate supplier catalogs from disparate suppliers into one searchable format.

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There are three main technological complexities in dealing with structured data. First, the data must be put into digital form so that it can then be converted into either HTML or XML file formats so that it can be made available from a website. Second, suppliers often have their data in different formats. For example, one supplier may have its data resident in a mainframe whereas another supplier may have its data either in written form or in an Excel spreadsheet. Often times, B2B companies have to physically enter all of this data into one common file as they are unable to electronically merge the data from its original sources. Companies such as Requisite Technology enable this process to be done more efficiently. Third, the attributes describing the data must be separated so that they can then be used for searching. For example, if a buyer wants to search for a blue widget made by an ISO qualified suppliers for under \$20, the data will need to be structured and separated in such a way that the price, supplier, color, and product description can be searched for, based on those multiple metrics.

### **3. Ability to Handle Dynamic Data**

Dynamic data are any type of data that change constantly. For example, the price of the product and or the quantity of the product are both attributes that can change instantaneously. The challenges associated with dealing with dynamic data relate primarily to back-end architectural issues. For example, if one supplier has its price list embedded in a mainframe, it can be difficult to continually send price updates to a trading exchange when the data is inside the mainframe.

We believe the best way to deal with dynamic data is to have the database structured in such a way where the dynamic data can be separated from the static data. This format makes the database easier to manipulate for updates and price changes. Most of the time, suppliers have all of their data merged into one file, which poses a problem for real time pricing environments. One effective means for dealing with dynamic data is through the use of artificial intelligence. For example, a company called Isadra (which was recently acquired by VerticalNet) has technology that continually asks suppliers ... "has the price changed?"... "has the quantity changed?" Accordingly, there is no need for a costly and time consuming batch update at the end of each business period (this is the process that most companies have resorted to without a more flexible solution).

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#### **4. Strong Commerce Engine**

The e\*commerce layer of the back-end architecture must be able to handle the following core applications: dependable price and availability data, invoicing, purchase order submission, approval submission, payment cycle calculation, financing functionality, logistics functionality and insurance functionality.

Companies such as Ariba, Commerce One, Tradex (being acquired by Ariba) and Moai help enable this functionality as part of their core service offering. Generally speaking, the commerce engine should be able to automate in a web – based environment all of the processes that were traditionally handled by a traditional purchasing department.

#### **5. Clearly Defined and Coded Business Rules**

The codification of the business rules relates to the creation of the common standards and procedures to which the B2B Internet Commerce system should adhere. For example, if non-exempt employees are not authorized to make purchases in excess of \$1,000, then the business rules would be written to reflect that dynamic. Accordingly, if a non-exempt employee logged on to the system, they would not be able to execute transactions greater than \$1,000. The business rules also specify qualified suppliers. Accordingly, if a purchasing agent tries to make a purchase from a non-approved supplier, then the e\*commerce system would flag that transaction and prevent it from closing. Correct business rule codification is important because it is this process that prevents maverick purchasing.

#### **6. Open Architecture**

Since B2B transactions are inherently also transactions between two enterprises, the issue of openness and interoperability is of paramount importance. Suppliers and buyers will often have completely different pre-existing systems in place thus making back-end real time connectivity difficult. For example, the buyer may have a SAP back-end and the supplier may have PeopleSoft. Additionally, smaller suppliers may not have a pre-existing software system in place thus heightening the complexity of end-to-end transactions.

We see two primary technological challenges to creating open web-based architectures. The first challenge is getting all of the transaction data into XML format. Once the data is in XML format (or some other consistent standard used by the industry in question), then there are standard descriptions for different types of items that can be leveraged. However, this raises the second technological challenge which is that not all pre-existing back-end systems are equipped to handle XML transactions. B2B Webmethods specializes in integrating legacy back-end systems to the web and equipping them to handle XML-based transactions. See Section IX for a more detailed overview of certain protocols and standards that have been promulgated in the B2B space.

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## **7. Parametric Search Capability**

Parametric search capability is the capability to conduct multiple metric searches for products. For example, suppose a buyer wants to search for a piece of cable that can handle a certain amount of heat transfer, that can also be used with kitchen appliances, that is made by one of three choice suppliers, and that is less than \$50 per foot. This is an example of a multiple metric search, herein referred to as a parametric search. We believe parametric searching is critical in the B2B space as the underlying products that are being moved on B2B sites are more complex and have several attributes. Additionally, in certain cases the buyer views the product as mission critical and does not have flexibility in terms of what they need from the product. This is particularly true in manufacturing environments where buyers are trying to uphold certain quality assurance standards for their end products.

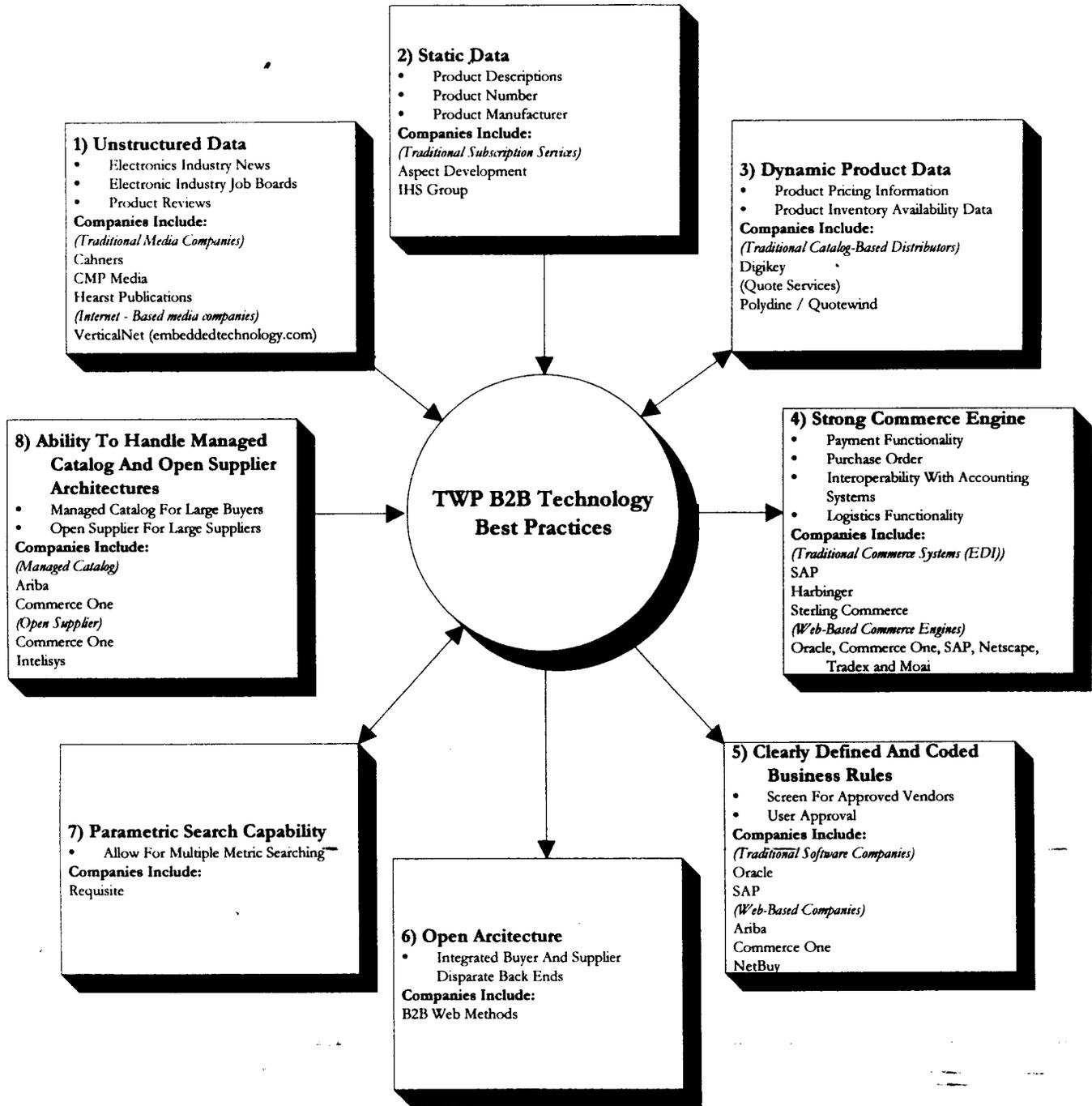
## **8. Ability to Handle Managed Catalog and Open Supplier Architectures**

A managed catalog architecture is an environment where the buyer maintains control of the catalog behind its own firewall. Industry participants refer to this type of solution as “behind the firewall.” Managed catalog environments are typically used when the buyer is very large and has enough influence over its supplier base to mandate them to contribute their product data to the buyer’s internally managed catalog. The problem with managed catalog environments is that the supplier is unable to update its prices in real time. Ariba’s solution today is more of a managed catalog type solution designed for large corporate buyers.

An Open Supplier architecture is an environment where the product catalog is maintained outside the buyer’s firewall. Either the Internet company hosts the catalog or the catalog is resident at the supplier. If a buyer’s suppliers are unwilling to contribute their product data in real time to a buyer, (as they would have to do in a Managed Catalog environment) then the Open Supplier architecture is preferred. Intelisys Electronic Commerce is a private company that provides a system for Open Supplier environments.

Since many of the above mentioned applications are relatively new, we have prepared the following diagram that shows how all of the different areas of a “best practices” back-end architecture are interrelated in the electronics industry.

## TWP B2B Technology Best Practices



Source: TWP B2B Internet Research

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## STANDARDS OVERVIEW

Interoperability is key in B2B e-commerce, therefore a standard for data exchange and transaction execution is critical. If an industry is in turmoil over technology standards or there is a high level of fragmented proprietary infrastructure, the ability of a new player to introduce and get acceptance of a new standard is difficult. Standards are critical in determining the adoption rate of B2B e-commerce over the Internet. Multiple standards are being developed, but most of them are variations of Open Buying on the Internet (OBI) and Extensible Mark-up Language (XML). We believe it is important for investors to be cognizant of the trends in terms of standards deployment because it can be an early indicator of what the winning solution will be and thus the winning company.

XML is the overarching technology solution for sharing contextual data internally as well as externally; however, there are numerous variations of the technology. Various committees are forming vertical-specific derivatives of XML to address the specific needs of certain industries. For example, a committee led by PricewaterhouseCoopers and J.P. Morgan created the Fpml (financial products markup language) to enable Internet-based integration of information in the financial services industry. With the proliferation of electronic trading, the ability to share confirmation and portfolio specification data real-time is growing. With wide spread adoption of this standard, we believe financial institutions will be able to improve efficiencies through trading accuracy and improved execution.

Another vertical-specific standard initiative example, is Acord's XML initiative in the insurance industry. ACORD has served the insurance industry since 1970 in the development of industry-wide standards to facilitate shared data between insurance carriers, brokers and agencies. The company boasts the participation of more than 1,000 insurance carriers and groups, 25,000 agencies, the major providers of industry software and services, and the CPCU Society. Recently the company embraced XML technology to address the demand for XML functionality by its constituency.

### “The XML Revolution – “Middleware for the Extended Enterprise”

As HTML revolutionized the way businesses display, send and receive information, XML (Extensible Mark-up Language) transformed how businesses can transmit, assemble and integrate data.

For years, electronic transactions existed through the use of EDI (Electronic Data Interchange); however, smaller players and fragmented industries were excluded due to the complexity and cost of the EDI systems. Furthermore, all of the players had to implement identical or common systems (such is the case with EDI) versus simply establishing a standard syntax with XML.

Accordingly, XML was created to address the restrictions of HTML. Being unable to accommodate large quantities of data, assimilate information, or customize data presentation, HTML did not provide sufficient interoperability. HTML represents data

**HTML represents data  
while XML describes data.**

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while XML describes data. With XML, disparate systems can communicate, coordinate and integrate information more efficiently. The flexible or "extensible" nature of XML facilitates multi-tier communication, linking members of the supply chain and producing fluid channel communications. XML reduces supply-chain inefficiencies by allowing system communication and the automatic integration of data versus timely data re-entry characteristic of HTML.

For example, hospitals share certain patient data with various institutions. The HTML solution would entail logging on to multiple websites, entering an authorization code, viewing and printing the data, then re-keying the data into the company's unique operating system. With XML the hospital mimics the above procedure without manually entering the data; the information can be dropped into the database despite incongruent systems using agreed upon XML data tags.

We believe the acceptance of XML will accelerate B2B transactions over the Internet. As information dissemination becomes more efficient within certain verticals through the proliferation of industry-specific XML syntax standardization, members of the supply chain will find Internet business solutions are not only easier but also mandatory for survival. Basically, XML improves the efficiency of conducting business over the Internet, thus requiring those members of the supply chain to either follow suit or fall behind.

### **Open Buying on the Internet (OBI)**

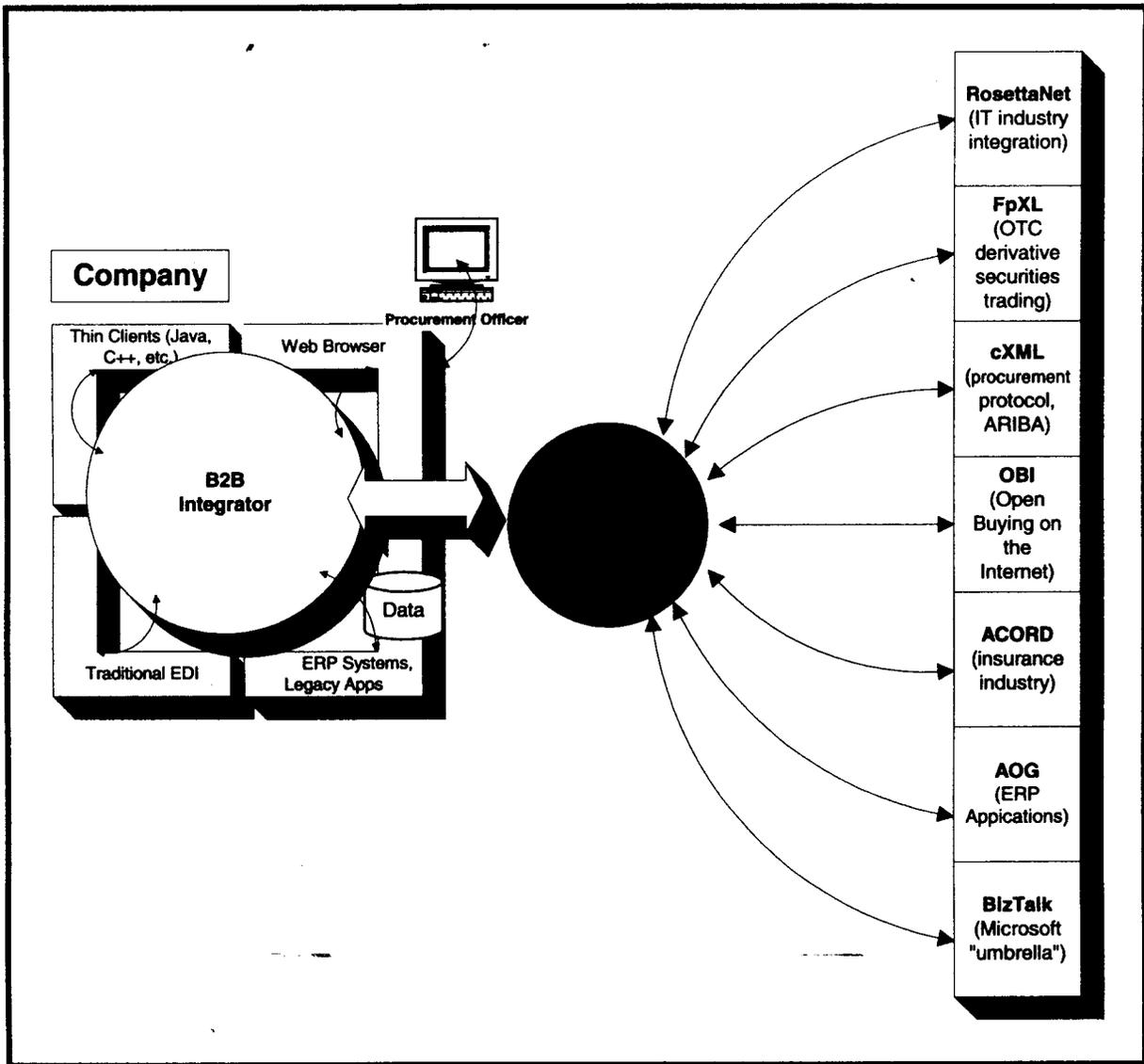
Unlike XML, OBI is not a specific technology but a freely adoptable construct that opens trading networks by enabling buyers and suppliers to interact and trade. The standard was created to address the common objectives of various members of the supply chain seeking to improve purchasing efficiencies by using the Internet. The Internet Purchasing Roundtable (now known as the OBI Consortium), is trying to standardize procurement. The Internet Purchasing Roundtable was underwritten by American Express and facilitated by Supply Works. The OBI Consortium is an ongoing effort, supported by numerous businesses, to improve the interoperability and efficiency of supply-chain efforts over the Internet. The assembly defined common techniques and infrastructure to facilitate transactions over the Internet without depreciating the value added by suppliers or alienating established trading methods.

The standard originated to provide an interoperable purchasing order solution for high-volume, low-cost transactions of MRO (Maintenance repair and operations) and other "indirect" purchases that comprise roughly 80% of business transactions. OBI eliminates the inefficiencies inherent in mundane purchasing by assigning a digital certificate to each server and requisitioner. By using the digital certificate to identify the purchasing organization and requisitioner, suppliers can tailor product offerings and services with dynamic catalogs.

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OBI does for "indirect" purchases what EDI did for "direct" purchases. Through the joining of numerous trading partners, the OBI standard enables the Internet to provide the same capabilities EDI produced but at a lower cost. We believe OBI has merely exposed the efficiencies available by using the Internet, and "direct" purchases are likely to follow suit (especially for smaller players in fragmented industries or those laden with EDI and private electronic infrastructure). In essence, this standard exemplifies the cost efficiencies and relative ease of conducting business over the Internet. As more suppliers and buyers become OBI compliant, we believe B2B Internet transactions will become common as those who fail to adopt the policy will suffer the cost ramifications of dedicated connections.

The following diagram exhibits the complex integration required to conduct e\*commerce. We also identify the multiple industry standards in the marketplace today trying to facilitate inter-enterprise communication.



Source: Webmethods & TWP B2B Internet Research

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Below is an overview of some of the more prominent B2B standards currently being promulgated by various authorities

BizTalk -- Microsoft's derivative of XML formed to capitalize on the growing need for an e-commerce standard. In an attempt to become competitive with Sun Microsystems and IBM, Microsoft created this "umbrella" technology designed to transcend all industries and provide a common standard for B2B. The BizTalk initiative was unveiled in March 1999—almost a year after the adoption of XML by the World Wide Web Consortium (W3C). Although Microsoft joined the party late, strategic alliances with companies such as MasterCard and Clarus Corporation have helped BizTalk gain traction.

RosettaNet -- An effort to create a common interface for electronic commerce and communication in the IT industry. Individuals from larger companies in the IT community sit as board members. Members include individuals from Arrow Electronics, Federal Express, IBM, Netscape, Porder and UPS.

FpML -- The collaboration of PricewaterhouseCoopers and JP Morgan resulted in the standard for OTC financial derivative securities trading. FpML is a natural extension from the demand for electronic trading.

CXML -- Ariba developed a derivative of XML to complement its procurement solution and marketplace.

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### **SECTION 3: SUMMARY OF THE B2B BUSINESS MODELS**

This section outlines the different B2B e\*commerce business models. We encourage investors to look at the channel dynamics before determining the appropriate business model. Certain business models may work better for certain channel structures. The average age of a B2B e\*commerce company is approximately 2 years. Consequently, most companies are taking their first crack at developing the business model suitable for their target market. Some companies start out with a lead generation model with hopes of transitioning to an e\*trading exchange model. We suspect most companies will revise or completely re-engineer their business model multiple times before the correct solution is in place. The following is a list of what we believe to be the most prominent business models in the B2B space today.

- **Primary e\*Trading Exchanges**
- **Secondary e\*Trading Exchanges**
- **e\*Supply Chains**
- **e\*Distributors**
- **e\*Resellers**
- **Disintermediators**
- **e\*Co-ops**
- **Lead Generation Sites**
- **e\*Market Makers**
- **Traditional-Player**

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After analyzing each of the prominent B2B e\*commerce business models, we developed a matrix ranking the long-term profitability of each of the aforementioned models. This matrix should serve as background before our detailed discussion of each of these models.

### **Business Model Long-Term Profitability Ranking**

#### **LOW**

- e\*Resellers
- Primary e\*Trading Exchanges without Disintermediation

#### **MEDIUM**

- Primary e\*Trading Exchanges with Disintermediation
- e\*Co-ops
- e\*Market Makers
- Lead Generation
- Secondary e\*Trading Exchanges without Disintermediation
- Traditional Players

#### **HIGH**

- e\*Distributors
- Secondary e\*Trading Exchanges with Disintermediation
- Disintermediators
- e\*Supply Chains

As shown above, we believe e\*distributors, secondary e\*trading exchanges, disintermediators and e\*supply chains will yield the greatest long-term profitability. We believe the success of these business models is subject to the particular operating environment to which they are applied. There are numerous variables that affect the outcome of a particular business plan. However, in general, we believe a model that is centered around digital commodities will likely find long term profitability when compared to a business model dealing with physical goods. We believe digital commodities will provide a firm with long term profitability because, typically, these sorts of goods yield greater gross margins. Companies that deal in commodities of a digital nature have virtually zero fulfillment costs, which place them at a great advantage over companies involved with physical goods. The low fulfillment economics associated with digital goods provide one of the broadest generalities that we apply to B2B e\*commerce models.

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Despite the underlying generality of digital vs. physical goods, there are other reasons why we expect a company operating with one of our top four ranked business models to achieve greater long-run profitability when compared to the others. We will address these additional reasons in the context of their respective business model.

**e\*Distributors are creating a distribution system where one did not previously exist.**

We favor **e\*Distributors** as a business model because they are creating a distribution system where one did not previously exist. With the advent of the Internet, it now makes sense for a distributor to exist within certain supply chains. An e\*distributor model will typically exist where there is a large amount of fragmentation between buyers and sellers. It is this fragmentation that affords the e\*distributor model relatively greater gross margins because the participants on both the buy- and sell-side of the e\*commerce solution are limited in their ability to leverage costs as far as a larger player could. For example, the sales and marketing costs as a percentage of revenue would be greater on a per unit basis for the small seller. That is, the small seller can spread its sales and marketing costs across fewer units void of an Internet presence. This predicament makes an e\*distributor more attractive to the small fragmented seller because it is willing to pay a premium in order to reach a larger audience. This premium results in a wider gross margin for the e\*distributor than could have existed for a real world distributor in the same channel. The same concept applies to the buy-side as well. A large pool of small fragmented buyers must pay a larger percentage of revenue for its operating costs on a per unit basis. The small buyer is willing to pay a premium to engage the e\*distributor so that it might find a greater number of business partners. This premium will, thus, translate into a large sustainable gross margin for the new e\*distributor.

**The secondary e\*trading exchange allows for a market to exist where one formerly was not feasible.**

**The secondary e\*trading exchange** shows a high degree of promise because it enhances revenue to the seller where, formerly, this opportunity simply did not exist. Prior to the secondary e\*trading solution, the seller had no hope of recovering costs through the sale of a particular item. The secondary e\*trading exchange allows for a market to exist where one formerly was not feasible. The margins for a secondary e\*trading exchange are higher than other business models because the goods passing through these operations are finding more efficient price discovery due to the better matching of buyer and seller. Also, these products are often unused assets, which tend to be perishable in nature, such as trucking capacity of telecommunications bandwidth. The limited life span of these goods will motivate the seller to bring the products to the secondary e\* trading exchange in hopes of unloading them in a rapid manner. We believe this sense of urgency will bring greater gross margins to the exchange as volume begins to ramp up.

The advantage of a **disintermediator model** is rather straightforward. This business model will effectively take, as well as expand, the existing margin enjoyed by the former channel member. A company that links a manufacturer to the end user will always find a greater gross margin than a company that links a manufacturer to a distributor. Perhaps a real world distributor will find itself disintermediated. The new e\*commerce market entrant will take the former distributor's margin as well as expand upon it by bringing the efficiencies of the Internet to the respective channel.

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An **e\*supply chain** generates its large gross margin by first aggregating a vast amount of product data that can be easily utilized by a great number of end users. As this process begins to reach critical mass, a large repository of business rules and operating procedures develop based on the large aggregation of data; the e\*supply chain can then sell that solution back to the operators of the vertical channel to which the data pertains. At this point, it is simply a matter of updating the solution and continuing to tailor it based on the changing needs of the vertical channel.

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### **PRIMARY E\*TRADING EXCHANGES**

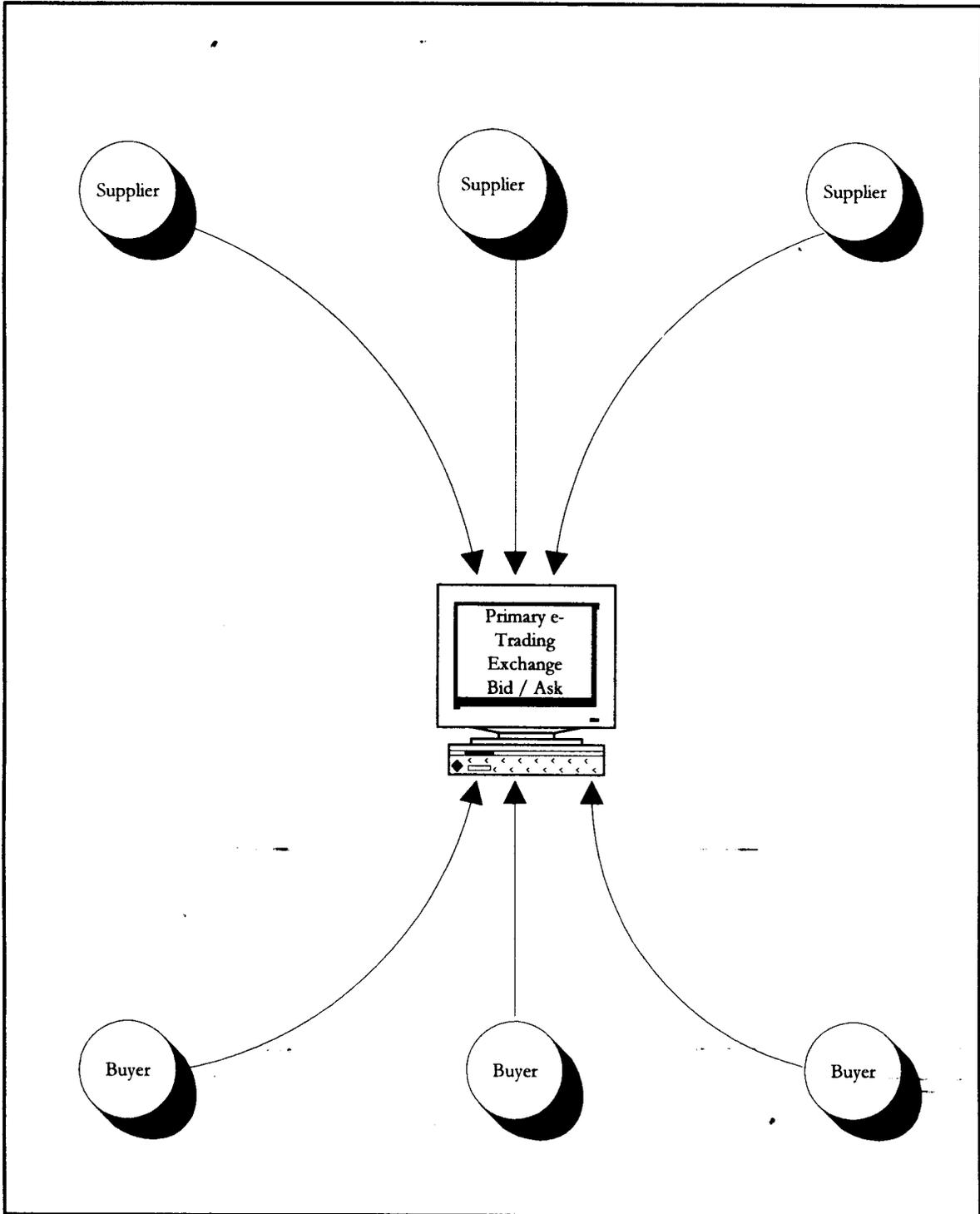
e\*trading exchanges bring together buyers and sellers on the Internet in a real-time trading environment. We believe a large number of e\*trading-exchange-marketplaces will likely enter the public market over the next couple of years. e\*Trading exchanges are transaction fee-based systems where a B2B company inserts itself between fragmented buyers and sellers to create a marketplace.

**Fragmentation.** We believe fragmentation on the buy-side and the sell-side is critical for a successful e\*trading exchange. In addition to fragmentation, the channel must have sufficient inefficiencies to warrant an aggregated exchange. We believe using the e\*trading exchange should lower selling costs to sellers and procurement costs to buyers. If a channel has a brick-and-mortar trading component (e.g., *PaperExchange* creates an exchange for wholesale traders of the pulp and paper industry), the trading-exchange company often times will attain its initial inventory base from the existing trading and/or broker community.

There are two different types of companies in the trading-exchange space: primary trading exchanges and secondary trading exchanges.

**Primary trading exchanges** facilitate exchanges for goods that have never been used before. For example, the exchange consists of new products versus pre-owned or used product. The diagram on the following page illustrates the primary e\*trading exchange model followed by a detailed overview of the model's attributes.

Primary e-Trading Exchange



Source: TWP B2B Internet Research

## Overview of Primary e\*Trading Exchanges

| Value To Buyer   | Value To Seller  | Long-Term Profit Potential*  | Commodity Type   | Companies   |
|--|--|--|--|---|
| <ul style="list-style-type: none"> <li>• Price Discovery</li> <li>• Lower Product Cost</li> <li>• Lower Process Costs</li> <li>• Real-time Price and Status Information</li> <li>• Reduced Risk to Volatility</li> </ul> | <ul style="list-style-type: none"> <li>• Price Discovery</li> <li>• Access to New Customers</li> <li>• Global Reach</li> <li>• Lower Customer Acquisition Costs</li> <li>• Reduction in Cost of Processing an Order</li> </ul> | <ul style="list-style-type: none"> <li>• With Disintermediation -- Medium</li> <li>• Without Disintermediation -- Low</li> </ul> | <ul style="list-style-type: none"> <li>• Perishable</li> <li>• Lack of Efficient Market</li> <li>• Volatile</li> <li>• Commodities That Can Be Described With Two Variables</li> </ul> | <ul style="list-style-type: none"> <li>• PaperExchange</li> <li>• e-Steel</li> <li>• Arbinet</li> <li>• National Transportation Exchange</li> </ul> |

\* Assumes same channel and same commodity  
Source: TWP B2B Internet Research

### Investor Considerations

In order for an e\*trading exchange to be successful there must be a strong demand for a central marketplace. The Primary e\*Trading exchange model complements a highly fragmented industry. Suppliers must be willing to list inventory. Often the dominant member of the channel will want to control the marketplace. For example, GM has introduced its own trading exchange for the procurement of parts and MRO goods versus allowing a neutral marketplace to facilitate trade. If there is a particularly large buyer in a supply-chain, they will likely predicate the procurement directives.

For an e\*trading exchange to work, there must be consistent representation of product price, description and availability. Given the numerous catalogs, web sites and bar codes, determining a single comprehensive product list can be extremely difficult. If a company is not currently in possession of a universal list of industry taxonomy, investors can rest assured it is not an easily accomplished task and will take time.

Due to the weight placed on industry relationships in B2B trade, a blessing from the relevant industry trade association can be beneficial in achieving adoption. A favorable opinion on exchange neutrality could get buyers comfortable with transacting on the marketplace.

A profitable e\*Trading exchange has to deliver visible cost savings to the buyer and the seller. In other words, the trading exchange must provide a cost reduction significant enough to be an incentive for the supplier to post inventory and the buyer to search the marketplace for that inventory.

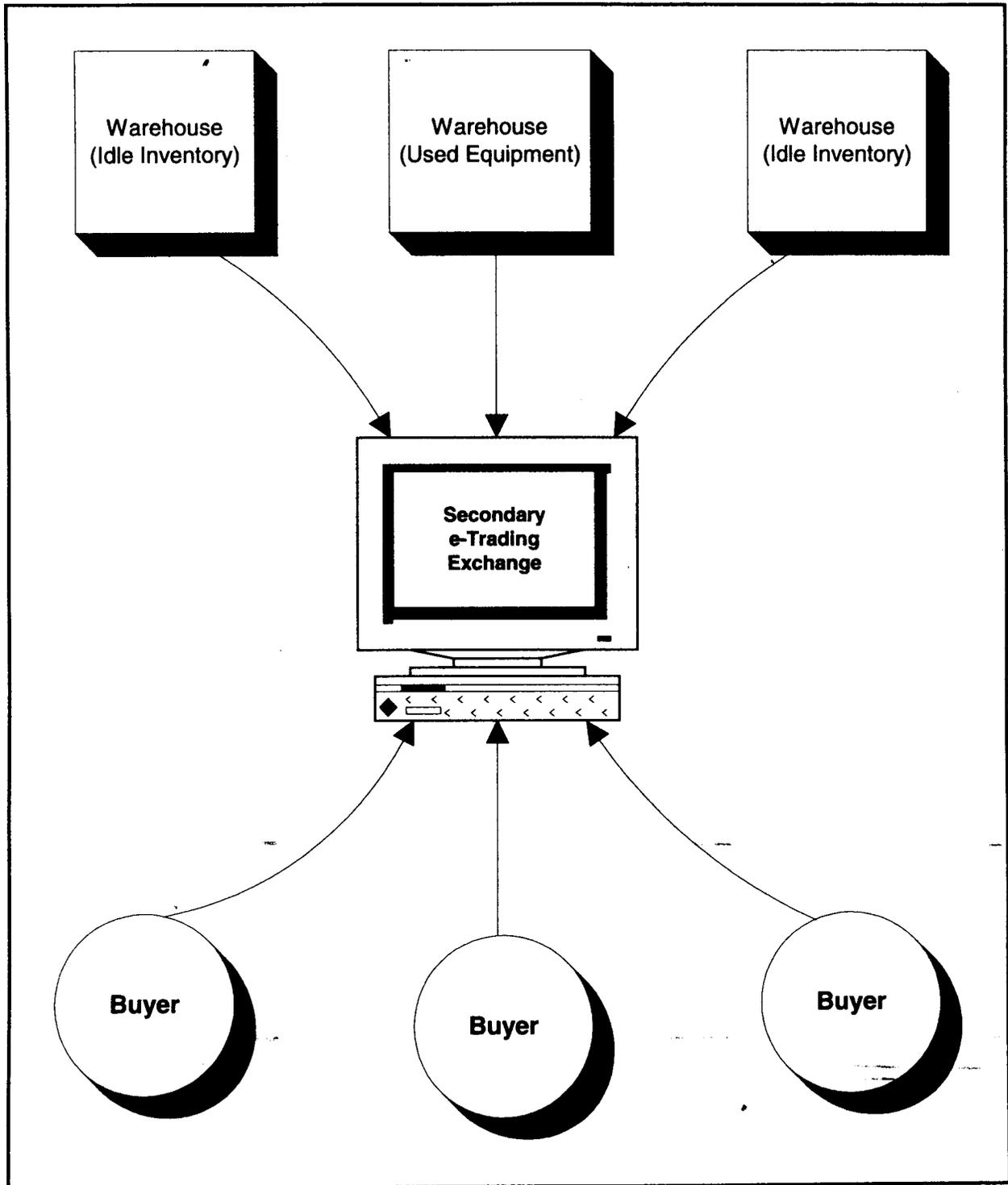
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## SECONDARY E\*TRADING EXCHANGES

Secondary e\*trading exchanges facilitate trade for either surplus inventory or used product. Usually there is an urgency to move the stagnant product to quickly free-up capacity and space for new product. These exchanges are viewed favorably as they create a market where one either did not exist or was not fully optimized. The majority of manufacturers have been forced to accept low prices to move stale inventory. With the advent of the Internet, suppliers can display excess inventory to a larger captive market of buyers.

For example, Liquidation.com provides buyers with access to anything from computer peripherals to sporting goods. The company does not take title of any inventory and earns revenue from transaction fees. The company has no costs associated with warehousing or financing inventory. The exchange simply introduces buyers and sellers while taking a flat commission fee based on the value of the underlying product. The model is representative of eBay in the C2C market. The diagram on the following page illustrates the secondary e\*trading exchange model followed by a detailed overview of the model's attributes.

## Secondary e-Trading Exchange



Source: Thomas Weisel Partners B2B Internet Research

## Overview of Secondary e\*Trading Exchanges

| Value To Buyer  | Value To Seller  | Long-Term Profit Potential  | Commodity Type   | Companies  |
|---|--|---|--|--|
| <ul style="list-style-type: none"> <li>• Depressed Product Prices</li> <li>• Product Discovery</li> </ul> | <ul style="list-style-type: none"> <li>• Medium For Excess Product Liquidation</li> <li>• Anonymity</li> </ul> | <ul style="list-style-type: none"> <li>• With Disintermediation -- High</li> <li>• Without Disintermediation -- Medium</li> </ul> | <ul style="list-style-type: none"> <li>• Perishable</li> <li>• Not Mission Critical</li> <li>• Volatile Demand</li> <li>• Sporadic Purchase</li> </ul> | <ul style="list-style-type: none"> <li>• TradeOut</li> <li>• Liquidation.com</li> <li>• Freemarkets</li> <li>• ZoneTrader</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

A major concern in analyzing a secondary e\*trading exchange is whether buyers view the clearing of excess supply as product dumping. This problem can be resolved by keeping the identity of the seller anonymous. Certain industries are highly relationship-oriented and may be unreceptive to an anonymous exchange thus making it hard for a secondary exchange to gain traction. On the other hand, the rate of adoption may be more favorable due to the fact that the exchange is creating a new market and the purchase is not mission critical. Thus buyers may feel more comfortable consummating the transaction over the Internet.

Due to the nature of the commodity it may be difficult to police false product data (i.e., true asset life). As the product may be used or aged, it can be hard to verify the true attributes of the product. This is especially true in an anonymous marketplace where supplier accountability is significantly reduced. The lack of product authenticity may make purchasers reluctant to purchase high dollar equipment or product on the marketplace without proof of supplier or a guarantee facilitated by the secondary e\*trading exchange.

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## E\*SUPPLY CHAINS

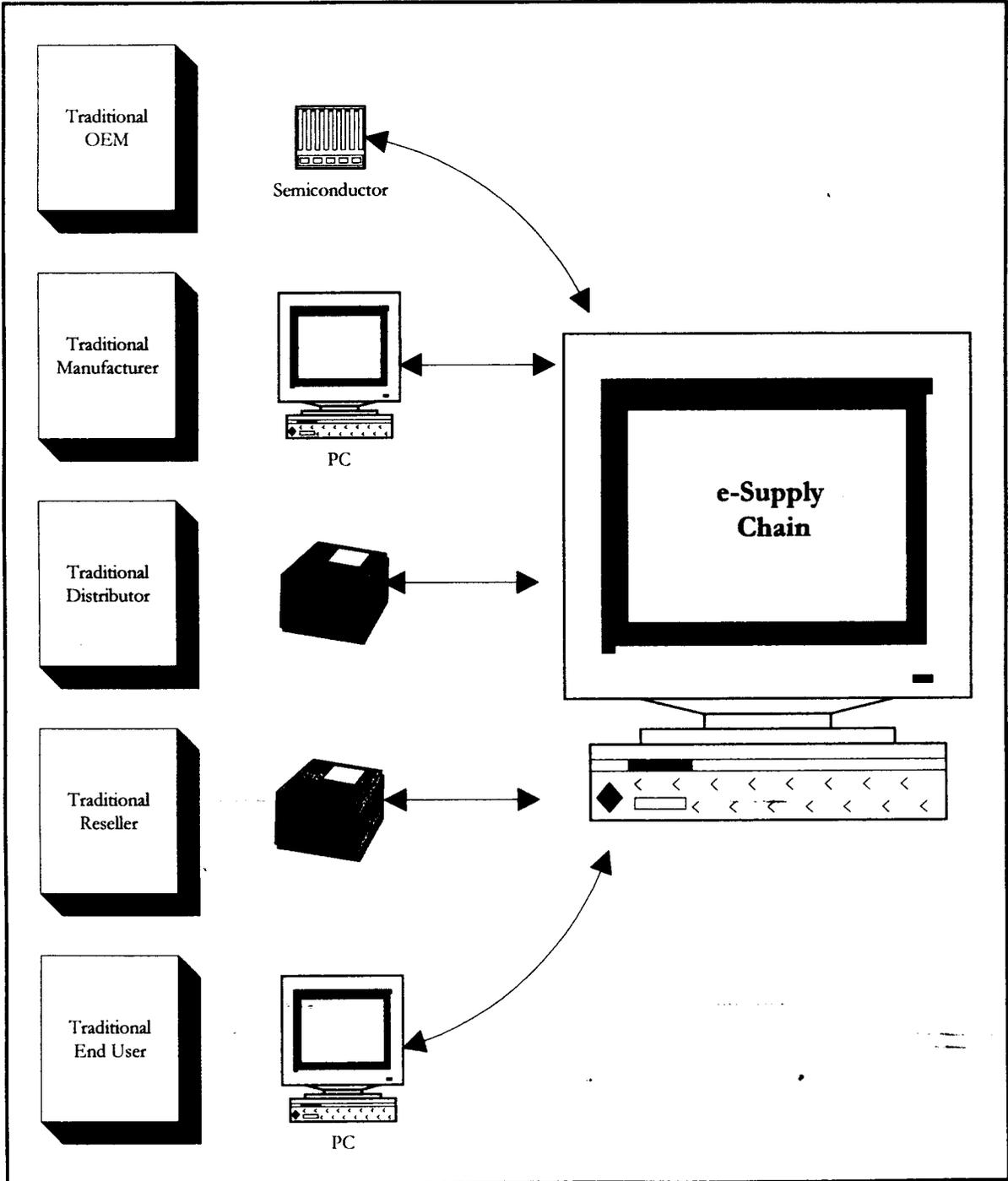
e\*Supply Chains create adaptable online platforms allowing entire industries to do business within an online community. Through a single interface, these communities connect the stepping stones of a supply chain (manufacturers, suppliers, importers and exporters, wholesalers, distributors, retailers) to their respective trading partners. By creating secure shared databases and integrating online commerce technologies, e\*supply chains can move pricing, product, and promotional information through a supply chain accurately, economically and efficiently. For example, pcOrder links each member of the personal computer channel from OEM (original equipment manufacturer) to retailer. Through shared information, pcOrder enables channel members to more quickly configure product and track product.

e\*Supply chains improve workflow simply by providing correct, current and consistent information. Typical inefficiencies include delivery delays, out-of-stocks and inaccurate forecasting. These inefficiencies can result in unnecessarily higher distribution costs.

Efficient e\*supply chains do not insert themselves into a layer of the supply chain. Instead, they form relationships with all channel members. e\*Supply chains help lower costs and increase inventory for all channel participants. In contrast to EDI (which often times is cost-prohibitive for smaller trading partners), integrated online communities will form as a neutral marketplace improvement.

The e\*supply chain model combines software and transaction fees. These models complement channels with multiple product data points and multiple tiers. For example, in the case of pcOrder.com, the PC channel has thousands of skus each with specific contextual information, in terms of interoperability. The e\*supply chain aggregates all of this product data in one central repository. Participants in the channel pay to access this database and leverage it to lower their overall sales costs. The diagram on the following page illustrates the e\*supply chain model followed by a detailed overview of the model's attributes.

**e-Supply Chain**



Source: TWP B2B Internet Research

## Overview of e\*Supply Chain

| Value To Buyer   | Value To Seller  | Long-Term Profit Potential                                      | Commodity Type  | Companies  |
|--|--|---|---|--|
| <ul style="list-style-type: none"> <li>• Open platform for automating procurement</li> <li>• Reduces time spent searching for product</li> <li>• Lower transaction costs</li> <li>• Extracts the product description, price and availability data in one simple to use format</li> </ul> | <ul style="list-style-type: none"> <li>• Simplifies maintenance of inventory and price book</li> <li>• Increases services to customers including online purchase histories, electronic confirmations and order tracking</li> <li>• Open platform for manufacturers to list product data</li> <li>• Increased customer reach</li> </ul> | <ul style="list-style-type: none"> <li>• <b>HIGH</b></li> </ul> | <ul style="list-style-type: none"> <li>• Considered purchases</li> <li>• Repeat purchases</li> <li>• Numerous suppliers</li> <li>• Complex product description data</li> <li>• Configurable products (e.g., PCs)</li> </ul> | <ul style="list-style-type: none"> <li>• PC Order</li> <li>• World Commerce Online</li> <li>• ViaLink</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

There must be significant inefficiencies or a large amount of excess margin in the channel to justify the company's entrance. Because an e\*supply chain is essentially integrating them into the entire distribution process, there must be inefficiencies at every level of the channel. Also, the e\*supply chains must create enough cost savings to justify its existence. As most supply-chains have gone through considerable margin compression in the last decade, channel participants are reluctant to part with even a basis point of profit unless there will be material cost savings or revenue enhancements.

Although adoption is harder, once an e\*supply chain imbeds itself in the channel its presence is hard to dislodge. A high barrier to entry is created by the company's access to industry data at every level of the supply-chain. This data is valuable to all channel members and can be leveraged by re-marketing it back to the channel.

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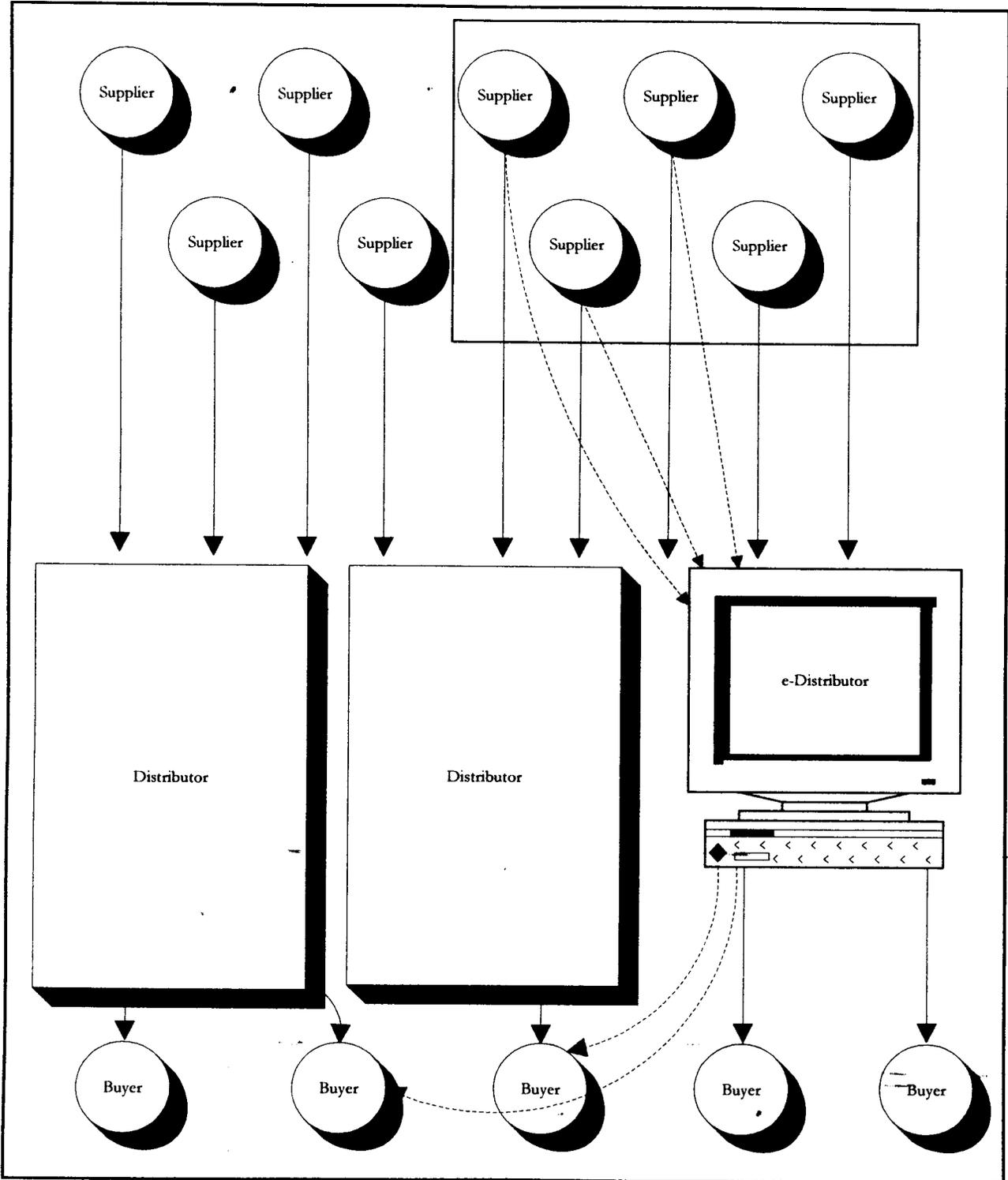
## **E\*DISTRIBUTORS**

e\*Distributor models are typically transaction fee-based models with some attributes of a software-licensing model. e\*Distributors aggregate product directly from suppliers and sell that product to corporate buyers over the web. The successful e\*distributor will either disintermediate the traditional distributor or it will create web-based distribution where distribution previously did not exist.

For example, RoweCom is an e\*distributor that disintermediates the traditional distributor in their channel. RoweCom has aggregated over 240,000 titles from over 20,000 publishers and then electronically distributes those titles to corporate buyers. Employees of companies using RoweCom's service can buy magazines and trade journals from their desktop. In turn, RoweCom charges a transaction fee to process the transaction and fulfill the order. The e\*distributor model works best within channels that have large buyers and fragmented suppliers. By going directly to the supplier and the end user, RoweCom disintermediates the traditional intermediary in its channel.

Another example of an e\*distributor capitalizing on a fragmented supplier base is SciQuest. By using the ubiquitous platform provided by the Internet, SciQuest has aggregated numerous suppliers to provide buyers in the life sciences industry with a centralized catalog. Accordingly, Sciquest has created a new distribution channel where prior to the web it did not exist. This represents a new market as there was no distribution function in the channel prior to the entrance of SciQuest. The diagram on the following page illustrates the e\*distributor model followed by a detailed overview of the model's attributes.

e-Distributors



Source: IWP B2B Internet Research

## Overview of e\*Distributor

| Value To Buyer  | Value To Seller   | Long-Term Profit Potential                                      | Commodity Type  | Companies  |
|---|---|---|---|--|
| <ul style="list-style-type: none"> <li>• Control over purchasing</li> <li>• Prevents maverick buying</li> <li>• Cost control</li> <li>• Management reporting tools</li> </ul> | <ul style="list-style-type: none"> <li>• Low Cost Distribution Channel</li> </ul> | <ul style="list-style-type: none"> <li>• <b>HIGH</b></li> </ul> | <ul style="list-style-type: none"> <li>• Product with Multiple Suppliers</li> </ul> | <ul style="list-style-type: none"> <li>• RoweCom</li> <li>• Fat Brain</li> <li>• Sciquest</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

A successful e\*Distributor will use the Internet to provide distribution to a market that prior to the web did not have a traditional distributor. If a company can get exclusives with suppliers, these relationships aid in securing a strong competitive advantage. Additionally, strategic partnerships with procurement package vendors and or ERP vendors create low cost access to an aggregated customer base. This type of agreement also ensures that customers are not deterred from adoption due to any lack of system interoperability. It is critical that e\*distributors easily integrate into buyer and supplier back-ends.

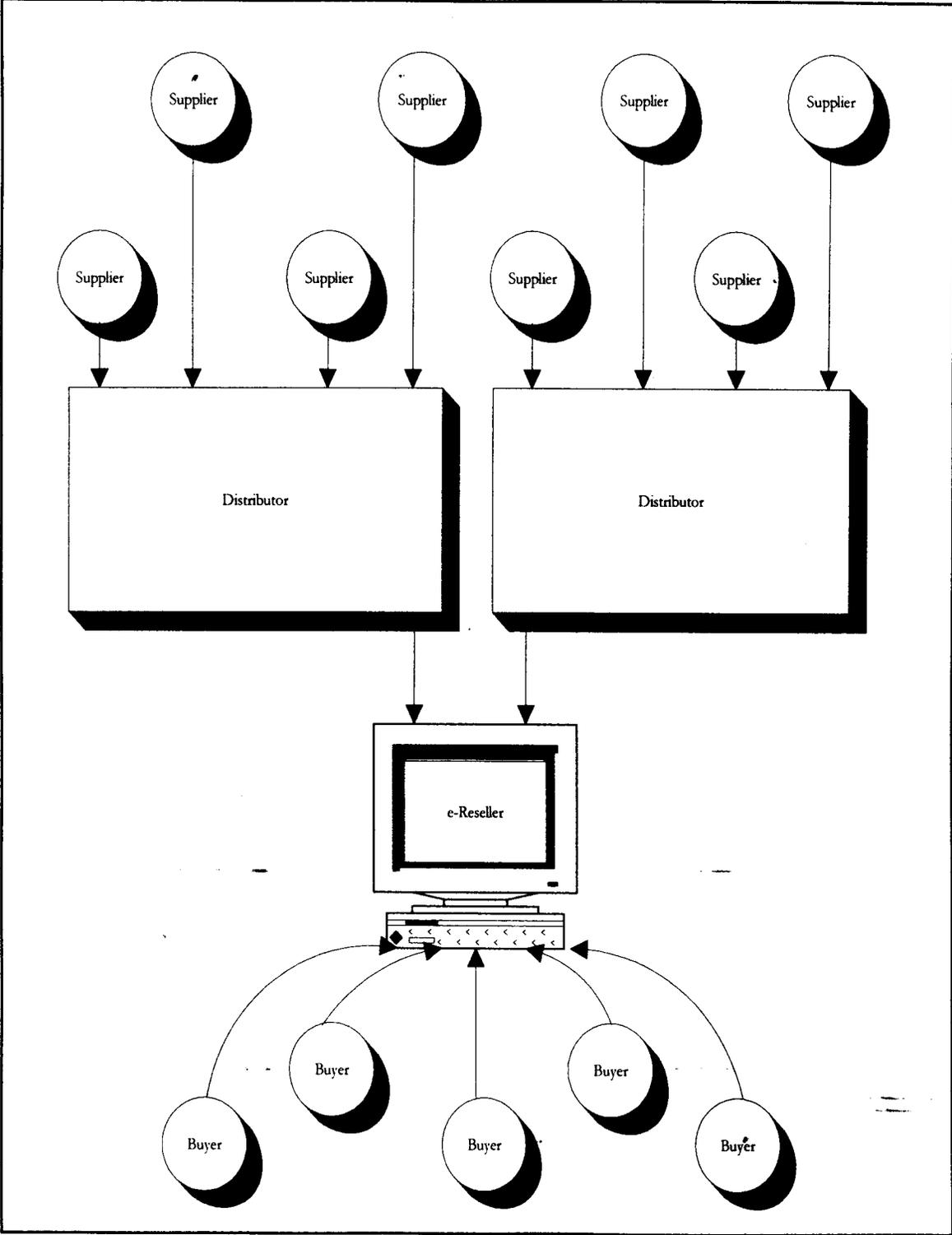
Channel domain expertise is critical to the success of an e\*distributor. Company executives must bring key industry relationships to the table in order to spawn adoption. Furthermore, a keen understanding of the workings of the channel is necessary to developing an appropriate business model.

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## **E\*RESELLER MODEL**

The e\*reseller model is often referred to as the catalog model. We think e\*reseller is a more descriptive term as e\*resellers are essentially aggregating distributor catalogs and making them available on the web. For example, Chemdex is an e\*reseller in the life sciences industry. Chemdex aggregates VWR's (VWR is a distributor) catalog and makes it available on the web. The diagram on the following page illustrates the e\*reseller model followed by a detailed overview of the model's attributes.

e-Resellers



Source: TWP B2B Internet Research

## Overview of e\*Reseller Model

| Value To Buyer   | Value To Seller   | Long-Term Profit Potential                              | Commodity Type   | Companies   |
|--|---|---|--|---|
| <ul style="list-style-type: none"> <li>• Control Over Purchasing</li> <li>• Aggregated Suppliers</li> <li>• Price Comparisons</li> </ul> | <ul style="list-style-type: none"> <li>• Access to New Customers</li> <li>• Single Pricing, Data and Availability Update</li> </ul> | <ul style="list-style-type: none"> <li>• LOW</li> </ul> | <ul style="list-style-type: none"> <li>• Products With Multiple attributes</li> <li>• Fragmented Suppliers</li> <li>• Large Number of Product Types</li> </ul> | <ul style="list-style-type: none"> <li>• Chemdex</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

The investor should be aware of exclusive arrangements between the distributor and the e\*reseller. This may lead to slower adoption due to smaller product offering. Also, the lack of distributor neutrality could discourage the end user from engaging the site because the bias of the e\*reseller could lead to quality questions by the end user. e\*Resellers serve as a conduit for the goods flowing through them. Typically, they partner with distributors, which means that they are forced to accept lower margins than if they were to by-pass the distributor and go directly to the manufacturer. If the company does not go directly to the manufacturer eventually, we believe long-term profitability is significantly dampened.

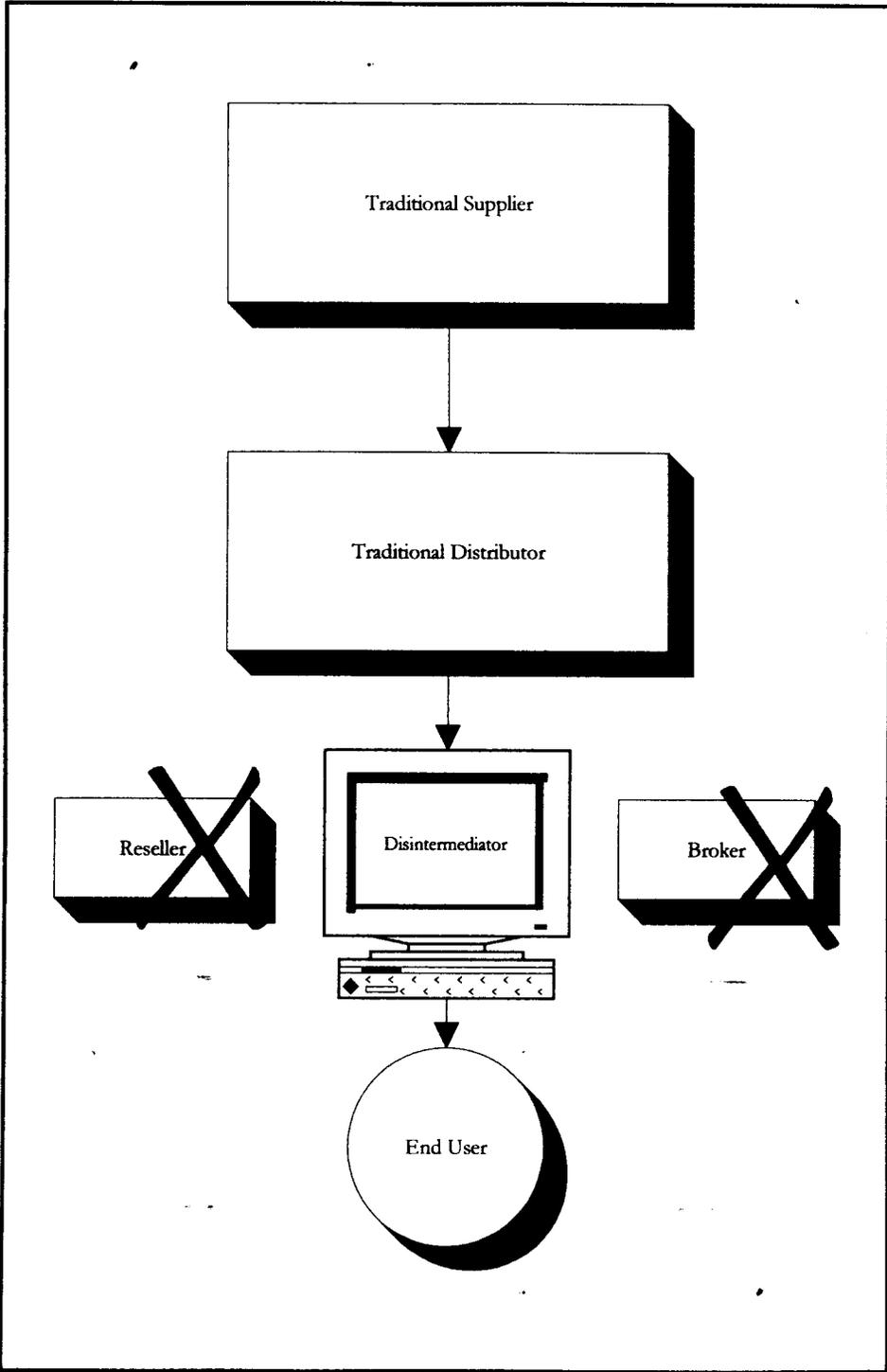
It is also important to understand the method of revenue recognition. Most of these companies account for revenue on a gross basis and the e\*reseller's cost basis as cost of goods sold on the income statement. This is somewhat misleading as the e\*reseller does not take physical possession of the product.

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## DISINTERMEDIATORS

The disintermediator model works best in multi-tiered channels yet where certain members in the supply chain add little value. A channel is ripe for disintermediation when an entire layer of a supply-chain adds little value but takes a large portion of the total possible margin. This is especially true in channels where the commodity in question is price-sensitive. The diagram on the following page illustrates the disintermediator model followed by a detailed overview of the model's attributes.

Disintermediator



Source: TWP B2B Internet Research

## Overview of Disintermediator

| Value To Buyer  | Value To Seller  | Long-Term Profit Potential                               | Commodity Type  | Companies  |
|---|--|--|---|--|
| <ul style="list-style-type: none"> <li>• Better prices than from traditional intermediary</li> <li>• Real-time information</li> </ul> | <ul style="list-style-type: none"> <li>• Possible revenue enhancement to manufacturer</li> </ul> | <ul style="list-style-type: none"> <li>• HIGH</li> </ul> | <ul style="list-style-type: none"> <li>• Any channel where a member is over compensated and has little value add</li> <li>• Current process could be completely replaced by a virtual provider</li> </ul> | <ul style="list-style-type: none"> <li>• Branders</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

The disintermediation model produces the most immediate and obvious cost savings of all the models we highlight. The reduction in expenses can be so compelling that it sparks adoption eliminating the "chicken and the egg" prophecy of other models. The channel must have a player that adds little value and takes a large premium. There are few channels ready for immediate disintermediation; however, we believe each B2B company should have the long-term objective of eliminating a current channel member to gain additional margin. On occasion, B2B e-commerce companies form partnerships with the distributors or brokers they ultimately intend to disintermediate.

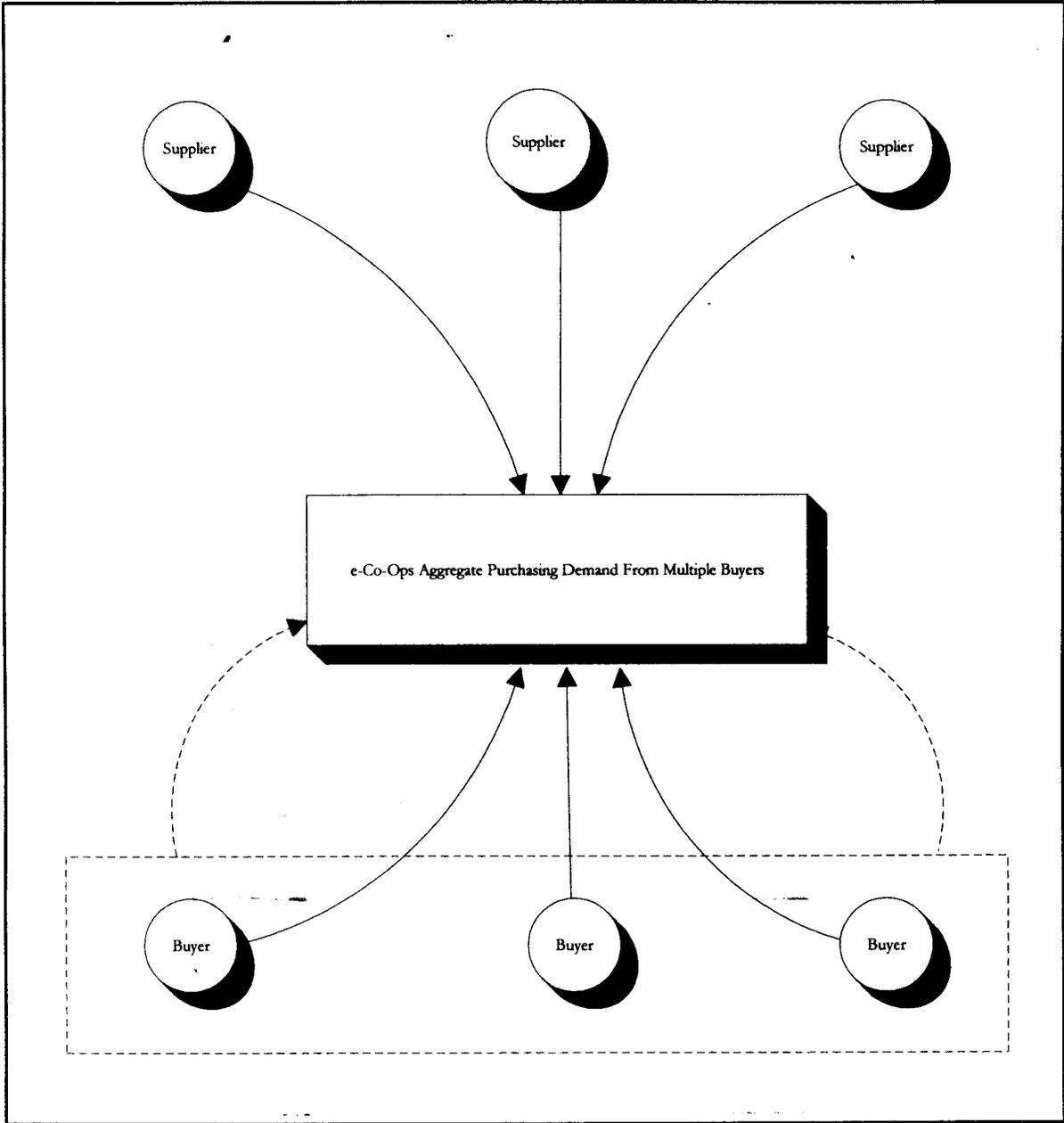
The party being disintermediated cannot have a large amount of power within the channel. The more power a player has, the longer it takes to disintermediate that player.

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### **E\*CO-OP MODEL**

The e\*co-op model typically is a software-licensing model initially and then eventually evolves toward more of a transaction-fee model. e\*Co-ops are companies that enable a large buying organization to be able to gain efficiencies in its purchase of supplies from outsiders. This model works best in channels where the buyer can afford to install the software and integrate it into its back office. This solution is appealing to Fortune 500 companies with significant capital expenditure budgets. The diagram on the following page illustrates the e\*co-op model followed by a detailed overview of the model's attributes.

e-Co-Op



Source: TWP B2B Internet Research

## Overview of e\*Co-op

| Value To Buyer  | Value To Seller  | Long-Term Profit Potential                                 | Commodity Type  | Companies   |
|---|--|--|---|---|
| <ul style="list-style-type: none"> <li>• Cost savings</li> <li>• Detailed business rules</li> <li>• Controls maverick purchasing</li> <li>• Management reporting</li> </ul> | <ul style="list-style-type: none"> <li>• Access to aggregated, pre-screened buyers</li> <li>• Reduction in cost of order processing</li> </ul> | <ul style="list-style-type: none"> <li>• MEDIUM</li> </ul> | <ul style="list-style-type: none"> <li>• Repeat purchases</li> <li>• Low cost purchases</li> <li>• Processing transaction is often more expensive than the product (i.e., office supplies)</li> </ul> | <ul style="list-style-type: none"> <li>• Ariba</li> <li>• Commerce One</li> <li>• Clarus</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

Most of the e\*co-op companies are initially aggregating a buy-side with the installation of software. These software solutions can be costly and exclusionary to smaller players from the marketplace. Furthermore, lengthy installations prolong the time to establish a transactional critical mass of buyers and sellers. Certain companies may already have an installed base of customers creating a considerable competitive advantage. If a company can leverage a captive audience of buyers with similar attributes, the time to market is reduced significantly.

We believe the successful e\*co-op will aggregate formerly decentralized products or services to create a new market.

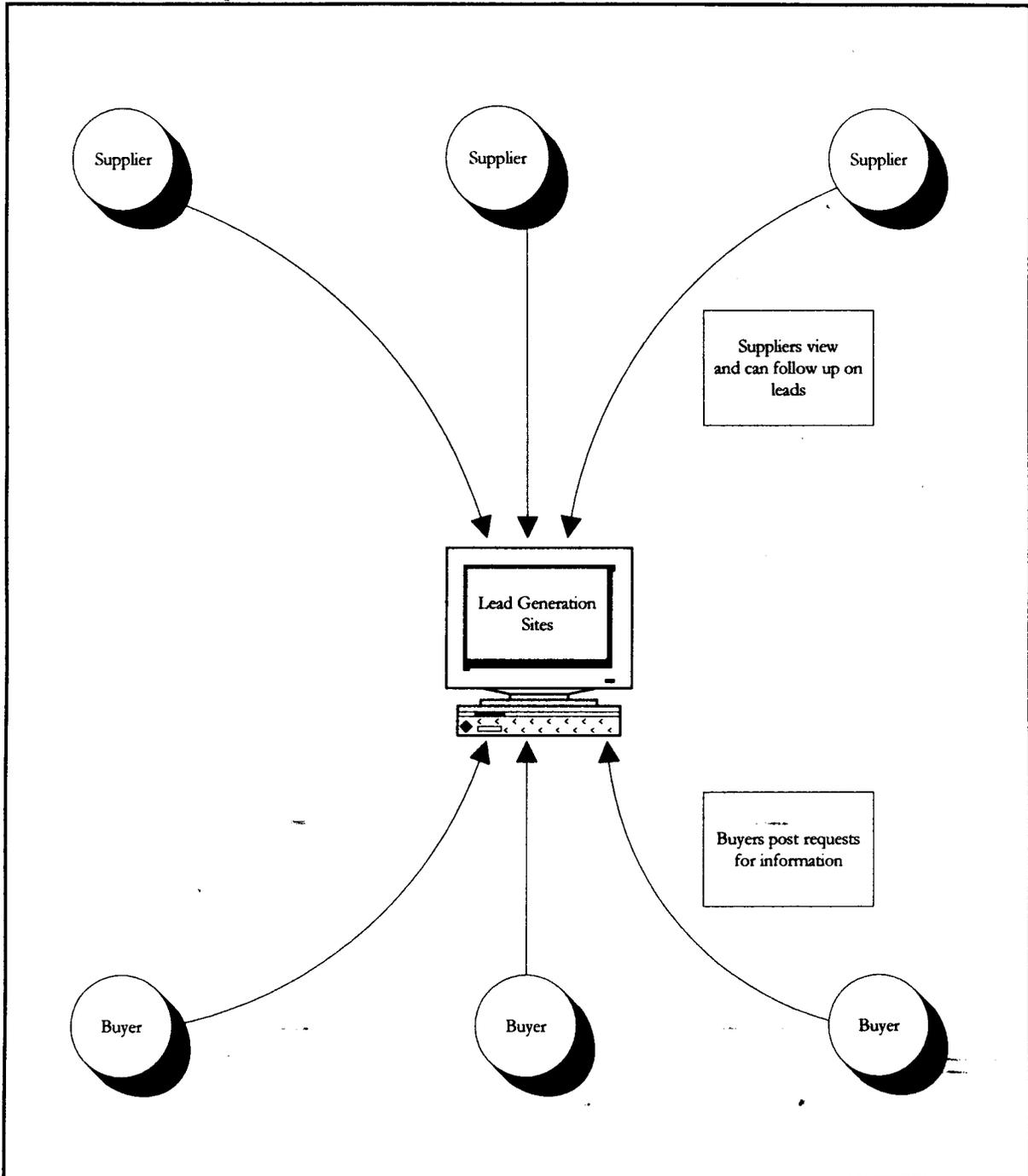
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## LEAD GENERATION SITES

Lead generation sites provide mutually beneficial content to members of a target segment or industry. This format unites both sides of the purchase equation.

The main question investors should ask about lead generation sites is whether the leads will convert to Internet-commerce revenue stream. Investors should also think about whether the vertical market is suitable for commerce. For example, a site targeting lawyers or plastic surgeons is not as likely to foster trade as one catering to lab technicians, who are responsible for purchasing testing equipment. The diagram on the following page illustrates the lead generation model followed by a detailed overview of the model's attributes.

Lead Generation Sites



Source: TWP B2B Internet Research

## Overview of Lead Generation Sites

| Value To Buyer   | Value To Seller  | Long-Term Profit Potential                                 | Commodity Type  | Companies   |
|--|--|--|---|---|
| <ul style="list-style-type: none"> <li>• Industry News</li> <li>• Introduction to Unknown Suppliers</li> <li>• Aggregation of Suppliers</li> </ul> | <ul style="list-style-type: none"> <li>• Exposure to New Clients</li> <li>• Qualified Leads</li> <li>• Lower Customer Acquisition Costs</li> </ul> | <ul style="list-style-type: none"> <li>• MEDIUM</li> </ul> | <ul style="list-style-type: none"> <li>• Multiple Suppliers</li> <li>• Small Suppliers Without Resources to Develop Web Presence</li> </ul> | <ul style="list-style-type: none"> <li>• VerticalNet</li> <li>• EarthWeb</li> <li>• Internet.com</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

It is important that investors not equate lead generation to eventual marketplace transactions or repeat business. Many B2B media or portal sites facilitate lead generation with hopes of migrating to a fully transactional e\*commerce model. In our opinion, it is highly unlikely that lead generation sites leverage this model into a transactional marketplace. Not that a company currently based on a lead generation model could not change its business model, but the ability to leverage a lead generation model into a real-time trading community is limited. To facilitate e\*commerce, a company must have strong channel relationships and the technological architecture to process electronic orders.

Lead generation sites provide content and community to a target group in order to attract industry professionals to the web site. This does not necessarily mean these industry professionals are procurement officials. Any member of the industry could visit the site to learn the latest industry trend or download the latest industry software. By not marketing the site as a procurement marketplace, lead generation sites usually end up with an audience of onlookers not purchasers.

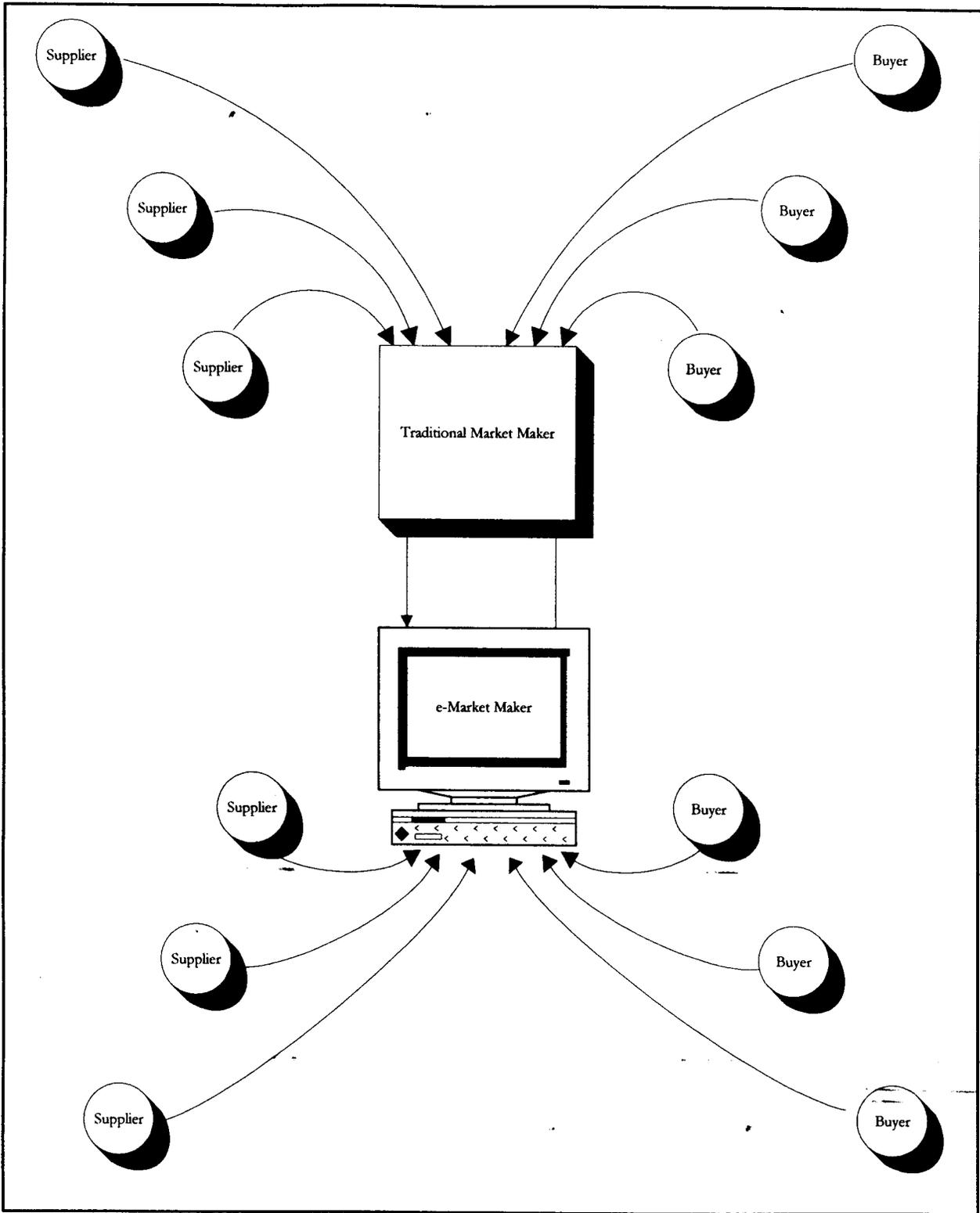
Finally, we will draw a comparison to the B2C marketplace where few consumer content sites ever generated material e\*commerce revenue. For example, CNET continues to generate commerce revenue only from leads generated off of its content site. We believe it is unlikely CNET will transition into a transaction-fee based e\*commerce model in the near future.

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## **E\*MARKET MAKERS**

e\*Market makers leverage the Internet to provide efficiency for a pre-existing spot market. These companies actually take physical possession of inventory to facilitate an efficient market. For example, ZoneTrader targets the vertically oriented technical equipment market. The company has strategic relationships with a number of large technical equipment manufacturers such as Compaq, Hewlett-Packard, IBM and Sun Microsystems. ZoneTrader is a hybrid of a traditional liquidation marketplace and virtual exchange in that they actually purchase the goods, carry it as inventory and then resell the products to a designated buyer. The diagram on the following page illustrates the e\*market maker model followed by a detailed overview of the model's attributes.

e-Market Maker



Source: TWP B2B Internet Research

## Overview of e\*Market Makers

| Value To Buyer   | Value To Seller  | Long-Term Profit Potential                                 | Commodity Type   | Companies   |
|--|--|--|--|---|
| <ul style="list-style-type: none"> <li>• Efficient Pricing</li> <li>• Immediate Access to Product</li> <li>• Total Product Availability</li> </ul> | <ul style="list-style-type: none"> <li>• Increased Revenue</li> <li>• Introduction to New Buyers</li> <li>• Anonymous Sale of Excess Product</li> <li>• Quick Disposal of Product</li> </ul> | <ul style="list-style-type: none"> <li>• MEDIUM</li> </ul> | <ul style="list-style-type: none"> <li>• Perishable</li> <li>• Numerous Suppliers</li> </ul> | <ul style="list-style-type: none"> <li>• NECX<br/>(acquired by VerticalNet)</li> <li>• Partnerin</li> <li>• ZoneTrader</li> </ul> |

Source: TWP B2B Internet Research

### Investor Considerations

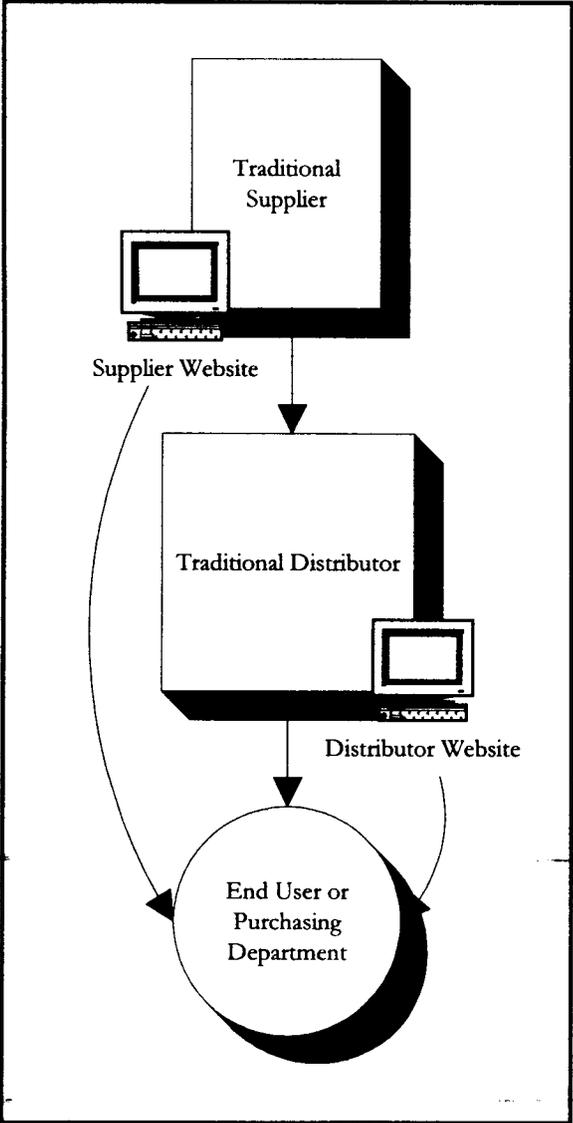
Spot market transactions are traditionally lower margin and housing inventory further eats into already low margins. Despite operating with less margin flexibility, market makers may gain adoption faster as they help eliminate the logistical and financial constraints that plague e\*trading exchanges.

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## TRADITIONAL-PLAYERS

The traditional-player-direct model is where a traditional player in the channel offers inventory on its web site. For example, W.W. Grainger has its *OrderZone.com* site whereby it offers its inventory to existing customers. The diagram on the following page illustrates the traditional-player model followed by a detailed overview of the model's attributes.

**Traditional Players  
Direct**



Source: TWP B2B Internet Research

## Overview of Traditional-Player

| Value To Buyer  | Value To Seller   | Long-Term Profit Potential*                                | Commodity Type   | Companies  |
|---|---|--|--|--|
| <ul style="list-style-type: none"> <li>• Time Savings</li> <li>• Ease of Ordering</li> <li>• Cost Savings</li> <li>• Maintain Existing Trading Partner Relationships</li> </ul> | <ul style="list-style-type: none"> <li>• New Distribution Channel</li> <li>• Additional Customers</li> <li>• Lowers Sales Costs</li> <li>• Lowers Redundant Customer Service Calls</li> </ul> | <ul style="list-style-type: none"> <li>• MEDIUM</li> </ul> | <ul style="list-style-type: none"> <li>• NA</li> </ul> | <ul style="list-style-type: none"> <li>• Cisco</li> <li>• Orderzone</li> <li>• Dell</li> <li>• Office Max</li> <li>• Office Depot</li> </ul> |

\* Assumes same channel and same commodity  
Source: TWP B2B Internet Research

### Investor Considerations

Many manufacturers, distributors and retailers have problems "going direct" as they are reluctant to alienate an existing customer base. Fear of cannibalizing existing business may dilute the company's focus on branding the web site.

Often times a sense of urgency to transition to the new Web model is lacking. We think traditional player models work best when a separate management team is put in place to run the Internet segment thus reducing any conflicts of interest that might arise. By separating the "dot com" activity, the Internet business has more autonomy to brand its site.

The traditional player needs to have enough "power" to force business partners to participate. If the company is not large enough to force its trading partners online, we believe this model will produce lack luster results. For example, Cisco has considerable influence over ISP purchasing. They consequently have been able to effectively move traditional business processes online and force customers to use Cisco.com.

Traditional companies are often times at a competitive disadvantage since they typically do not offer a comprehensive aggregation solution, as the buyer cannot choose from multiple suppliers.

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## SECTION 4: VALUATION OF B2B INTERNET COMPANIES

We estimate the B2B sector could potentially generate between \$1 to \$2 trillion dollars worth of new market capitalization. We used two distinct methodologies to come up with the \$1 to \$2 trillion number. In one analysis, we looked at the net present value of the after tax cash savings to all U.S. common stocks if the Internet can lower their aggregate SG&A expenses by approximately 20% in ten years. In the other analysis we looked at the total B2B market and what the net present value of the potential net operating profits that could be achieved out of that market. The SG&A analysis showed a range of net present values of \$970 billion to \$1.9 trillion dollars. The total B2B market (with implied operating margins) analysis showed a range of net present values of \$786 billion - \$1.8 trillion. We thought the similarity in the outcomes was comforting as we believe it further supports our assertion that the B2B market could potentially generate anywhere from \$1 to \$2 trillion dollars worth of market capitalization. In light of the fact that the aggregate market capitalization for all U.S. common stocks is \$24 trillion, the \$1-\$2 trillion number is a little easier to accept. The diagrams on the following two pages show our supporting analyses for this assertion. Note the text boxes that further clarify our assumptions.



**Hypothetical Internet Valuation - B2B E-Commerce Companies**

(a) (b) (c)  
In millions

|                        | 2000       | 2001       | 2002       | 2003      | 2004      | 2005     | 2006      | 2007        | 2008        | 2009        |
|------------------------|------------|------------|------------|-----------|-----------|----------|-----------|-------------|-------------|-------------|
| Revenue                | \$295,600  | \$399,060  | \$538,731  | \$727,287 | \$985,500 | 117,308  | 759,624   | \$2,375,492 | \$3,206,914 | \$4,329,334 |
| Gross Profit           | 29,560     | 59,859     | 107,746    | 181,822   | 289,650   | 527,887  | 712,648   | 712,648     | 962,074     | 1,298,800   |
| EBITDA                 | (44,340)   | (39,906)   | (26,937)   | 0         | 48,275    | 263,944  | 356,324   | 356,324     | 481,037     | 649,400     |
| Deprec. & Amort.       | 2,956      | 3,991      | 5,387      | 7,273     | 9,655     | 17,596   | 23,755    | 23,755      | 32,069      | 43,293      |
| EBIT                   | (47,296)   | (43,897)   | (32,324)   | (7,273)   | 38,620    | 117,308  | 246,347   | 332,569     | 448,968     | 606,107     |
| Other Income (Expense) | 0          | 0          | 0          | 0         | 0         | 0        | 0         | 0           | 0           | 0           |
| Pre Tax Income         | (47,296)   | (43,897)   | (32,324)   | (7,273)   | 38,620    | 117,308  | 246,347   | 332,569     | 448,968     | 606,107     |
| Income Tax Expense     | n.a.       | n.a.       | n.a.       | n.a.      | 16,607    | 50,443   | 105,929   | 143,005     | 193,056     | 260,626     |
| Net Income             | (\$47,296) | (\$43,897) | (\$32,324) | (\$7,273) | \$22,013  | \$66,866 | \$140,418 | \$189,564   | \$255,912   | \$345,481   |

If you assume that our projected Internet-based B2B market...

**Assumptions**

|                         |         |         |        |        |        |        |        |        |        |        |
|-------------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| Revenue Growth Rate     | n.a.    | 35.00%  | 35.00% | 35.00% | 32.75% | 35.00% | 35.00% | 35.00% | 35.00% | 35.00% |
| Gross Margin            | 10.00%  | 15.00%  | 20.00% | 25.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% |
| EBITDA Margin           | -10.00% | -10.00% | -5.00% | 0.00%  | 5.00%  | 15.00% | 15.00% | 15.00% | 15.00% | 15.00% |
| D&A as % of Sales (1)   | 1.00%   | 1.00%   | 1.00%  | 1.00%  | 1.00%  | 1.00%  | 1.00%  | 1.00%  | 1.00%  | 1.00%  |
| Operating Profit Margin | -16.00% | -11.00% | -6.00% | -1.00% | 4.00%  | 14.00% | 14.00% | 14.00% | 14.00% | 14.00% |
| Income Tax Rate         | 43.00%  | 43.00%  | 43.00% | 43.00% | 43.00% | 43.00% | 43.00% | 43.00% | 43.00% | 43.00% |

and achieves 15% operating margins by the year 2009...

...yields 30% gross margins by the year 2004...

**DCF Summary**

|            |            |            |            |           |          |          |           |           |           |           |
|------------|------------|------------|------------|-----------|----------|----------|-----------|-----------|-----------|-----------|
| Net Income | (\$47,296) | (\$43,897) | (\$32,324) | (\$7,273) | \$22,013 | \$66,866 | \$140,418 | \$189,564 | \$255,912 | \$345,481 |
|------------|------------|------------|------------|-----------|----------|----------|-----------|-----------|-----------|-----------|

**Valuation**

|                        | Multiple of 2009 Net Income |         |           |           |           |           |           |           |           |           |
|------------------------|-----------------------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                        | 30.0 x                      | 35.0 x  | 40.0 x    | 45.0 x    | 50.0 x    | 55.0 x    | 60.0 x    | 65.0 x    | 70.0 x    | 30.0%     |
| Discount Rate of 30.0% |                             |         |           |           |           |           |           |           |           |           |
| PV of Cash Flows       | 34,976                      | 34,976  | 34,976    | 34,976    | 34,976    | 34,976    | 34,976    | 34,976    | 34,976    | 34,976    |
| PV of Terminal Value   | 751,816                     | 877,119 | 1,002,422 | 1,127,724 | 1,253,027 | 1,378,330 | 1,503,633 | 1,628,935 | 1,754,238 | 1,754,238 |
| Aggregate Value        | 786,793                     | 912,095 | 1,037,398 | 1,162,701 | 1,288,003 | 1,413,306 | 1,538,609 | 1,663,912 | 1,789,214 | 1,789,214 |

(a) Assumes all new dot com companies report revenue on a gross basis.  
 (b) Assumes that capital expenditures equal depreciation expense.  
 (c) Assumes that changes in working capital are minimal over time.

Source: TWP B2B Internet Group

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**We think the B2B stocks that are public today are trading largely on the sheer size of their respective market opportunities.**

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### **ARE THE CURRENT B2B VALUATIONS REASONABLE?**

The B2B stocks today are worth approximately \$130 billion. Though it is difficult to justify the valuation for each individual stock without a more thorough analysis, we do think that \$130 billion relative to the potential \$1 to \$2 trillion is not totally unreasonable considering the overall size of the B2B market. We think the B2B stocks that are public today are trading largely on the sheer size of their respective market opportunities. For example, certain companies are obtaining a nominal transaction fee, but upon looking at the size of the market opportunity one can see how the business could potentially become very, very big. We highlight that the existing universe of B2B stocks is still only a small sample of the total number of B2B companies (we count 400 including public and private) and we expect that many of the private B2B companies will come public. Based on the above analysis, the current B2B publicly-traded stocks have already garnered 10% percent of what we think the total new market capitalization potential is for the B2B sector.

Where will all of this new market capitalization come from? We think it will come from four areas. First, certain B2B companies are using the Internet to create a new market that prior to the Internet was untapped (the eBay of B2B). Second, certain B2B companies are disintermediating traditional players (the e\*trades of B2B) with a new lower cost Internet model, thus encroaching on the revenue base (and respective market capitalization) of traditional players in each of the different B2B market segments. Third, increased operating margins that traditional bricks and mortar businesses could reap by "webifying" their business. For example, a traditional distributor webifies its model in such a way where its inventory turns increase thus creating enhanced cash flow. Finally, B2B e\*commerce has created a new market for new technology applications to enable the three aforementioned types of companies to do business with other businesses over the Internet.

### **How Should Investors Think About Valuation Of The B2B e\*Commerce Category?**

**We believe Internet stocks should be valued using the net present value of projected free cash flow at a discount rate that mirrors the risk appetite and the desired rate of return to the investor.**

The valuation of Internet equity in both the public and private market is a continuous debate. We believe Internet stocks should be valued using the net present value of projected free cash flow at a discount rate that mirrors the risk appetite and the desired rate of return to the investor. With revenue multiples prevailing as today's methodology of choice, companies can be erroneously termed "undervalued" with little to no long-term cash flow visibility.

---

## **We Believe Revenue Multiples Are A Flawed Way Of Valuing Companies**

We believe revenue multiples fail to incorporate a company's operating margins, which leaves any analytical comparison between similar companies lacking in the determination of which company is better at actually running its business. Without an examination of gross profit and operating profit, a likely scenario will be the comparison of two companies with similar revenue multiples, yet entirely different operating margins. This precludes the investor from seeing a true "apples to apples" comparison between two companies.

We believe revenue multiple valuation of B2B Internet companies forsakes consideration of the long term trends of the business. There are certain systematic risks that must be factored into a forward looking analysis and we believe a revenue multiple will fail to capture the sensitivity of the business to these external factors. Examples of external factors would be a fluctuation in the price of production goods or perhaps the emergence of a new competitor. Looking at the operating margins compels the analyst to consider the underlying relationships of a specific business and to take into account the degree to which these relationships can and will affect profitability in the future.

The analyses on the following two pages shows how the hypothetical stock, "Watchin My Wallet" (ticker: WMW) and the hypothetical stock, "Big Spender" (ticker: BSPD) have identical revenue multiples, yet "Big Spender" is worth only half of what "Watchin My Wallet" is worth.

**Hypothetical Valuation for "Watchin My Wallet" vs. "Big Spender" (a)**

|                     | Company "Watchin My Wallet" |        |        |       |         |         |         |         |         |         |
|---------------------|-----------------------------|--------|--------|-------|---------|---------|---------|---------|---------|---------|
|                     | 2000                        | 2001   | 2002   | 2003  | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    |
| Revenue             | \$100                       | \$200  | \$400  | \$800 | \$1,400 | \$2,100 | \$2,940 | \$3,822 | \$4,969 | \$6,459 |
| Gross Profit        | 30%                         | 60     | 120    | 240   | 420     | 630     | 882     | 1,147   | 1,491   | 1,938   |
| EBITDA              | (30)                        | (40)   | (40)   | 8     | 140     | 420     | 588     | 764     | 994     | 1,292   |
| Income Tax Expense  | n.a.                        | n.a.   | n.a.   | 0     | 50      | 160     | 223     | 290     | 378     | 491     |
| Net Income          | (\$31)                      | (\$42) | (\$44) | \$0   | \$76    | \$239   | \$335   | \$436   | \$566   | \$736   |
| <b>Assumptions:</b> |                             |        |        |       |         |         |         |         |         |         |
| Revenue Growth Rate | n.a.                        | 100%   | 100%   | 100%  | 75%     | 50%     | 40%     | 30%     | 30%     | 30%     |
| Gross Margin        | 30%                         | 30%    | 30%    | 30%   | 75%     | 30%     | 30%     | 30%     | 30%     | 30%     |
| EBITDA Margin       | -30%                        | -20%   | -10%   | 1%    | 1%      | 20%     | 20%     | 20%     | 20%     | 20%     |
| Income Tax Rate     | 40%                         | 40%    | 40%    | 40%   | 40%     | 40%     | 40%     | 40%     | 40%     | 40%     |

(1) "Watchin My Wallet" achieves positive cash flow in four years...

Current Total Market Capitalization \$ 1,000  
 Multiple of Revenue 5.0 x

(3) "Watchin My Wallet's" revenue multiple is 5x next year's revenue...

1.3 x 0.7 x 0.5 x 0.3 x 0.3 x 0.2 x 0.2 x

**Hypothetical Valuation for "Big Spender" vs. "Watchin My Wallet" (a)**

|                     | Company "Big Spender" |        |         |         |         |         |         |         |         |         |
|---------------------|-----------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
|                     | 2000                  | 2001   | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    |
| Revenue             | \$100                 | \$200  | \$400   | \$800   | \$1,400 | \$2,100 | \$2,940 | \$3,822 | \$4,969 | \$6,459 |
| Gross Profit        | 15                    | 30     | 60      | 120     | 210     | 315     | 441     | 573     | 745     | 969     |
| EBITDA              | (40)                  | (80)   | (160)   | (240)   | (280)   | (210)   | 29      | 229     | 547     | 1,033   |
| Income Tax Expense  | n.a.                  | n.a.   | n.a.    | n.a.    | (118)   | (92)    | 0       | 76      | 199     | 388     |
| Net Income          | (\$41)                | (\$82) | (\$164) | (\$248) | (\$176) | (\$139) | \$0     | \$115   | \$298   | \$581   |
| <b>Assumptions:</b> |                       |        |         |         |         |         |         |         |         |         |
| Revenue Growth Rate | n.a.                  | 100%   | 100%    | 100%    | 75%     | 50%     | 40%     | 30%     | 30%     | 30%     |
| Gross Margin        | 15%                   | 15%    | 15%     | 15%     | 15%     | 15%     | 15%     | 15%     | 15%     | 15%     |
| EBITDA Margin       | -40%                  | -40%   | -40%    | -30%    | -20%    | -10%    | 1%      | 1%      | 11%     | 16%     |
| Income Tax Rate     | 40%                   | 40%    | 40%     | 40%     | 40%     | 40%     | 40%     | 40%     | 40%     | 40%     |

(2) whereas "Big Spender" does not achieve cash flow positive for seven years...

Current Total Market Capitalization \$ 1,000  
 Multiple of Revenue 5.0 x

(4) However "Big Spender's" revenue multiple is ALSO 5x next year's revenue...

1.3 x 0.7 x 0.5 x 0.3 x 0.3 x 0.2 x 0.2 x

(a) Assumes all new dot com companies report revenue on a gross basis.  
 Source: TWP B2B Internet Group

**Hypothetical Valuation for "Watchin My Wallet" vs. "Big Spender" (a) (b)**

|                            | 25.0 x   | 27.5 x    | 30.0 x    | 32.5 x    | 35.0 x    | 37.5 x    | 40.0 x    | 42.5 x    | 45.0 x    |
|----------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>"Watchin My Wallet"</b> |          |           |           |           |           |           |           |           |           |
| <i>DCF Summary:</i>        |          |           |           |           |           |           |           |           |           |
| Free Cash Flow             | (\$31)   | (\$42)    | \$0       | \$76      | \$239     | \$335     | \$436     | \$566     | \$736     |
| Cumulative Free Cash Flow  | (\$31.0) | (\$73.0)  | (\$117.0) | (\$41.4)  | \$198.0   | \$533.2   | \$968.9   | \$1,535.3 | \$2,271.6 |
| <b>"Big Spender"</b>       |          |           |           |           |           |           |           |           |           |
| <i>DCF Summary:</i>        |          |           |           |           |           |           |           |           |           |
| Free Cash Flow             | (\$41)   | (\$82)    | (\$248)   | (\$176)   | (\$139)   | \$0       | \$115     | \$298     | \$581     |
| Cumulative Free Cash Flow  | (\$41.0) | (\$123.0) | (\$535.0) | (\$711.4) | (\$850.0) | (\$850.0) | (\$735.3) | (\$437.2) | \$144.1   |

**Valuation:**

|                               | Multiple of 2009 Net Income |        |        |        |        |        |        |        |        |  |
|-------------------------------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                               | 25.0 x                      | 27.5 x | 30.0 x | 32.5 x | 35.0 x | 37.5 x | 40.0 x | 42.5 x | 45.0 x |  |
| <b>"Watchin My Wallet"</b>    |                             |        |        |        |        |        |        |        |        |  |
| <b>Discount Rate of 30.0%</b> |                             |        |        |        |        |        |        |        |        |  |
| PV of Cash Flows              | 215                         | 215    | 215    | 215    | 215    | 215    | 215    | 215    | 215    |  |
| PV of Terminal Value          | 1,335                       | 1,469  | 1,602  | 1,736  | 1,869  | 1,999  | 2,137  | 2,270  | 2,404  |  |
| Aggregate Value               | 1,550                       | 1,684  | 1,817  | 1,951  | 2,084  | 2,214  | 2,351  | 2,485  | 2,618  |  |

"Watchin' My Wallets"  
NPV is \$2 billion....

|                               | Multiple of 2009 Net Income |        |        |        |        |        |        |        |        |  |
|-------------------------------|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--|
|                               | 25.0 x                      | 27.5 x | 30.0 x | 32.5 x | 35.0 x | 37.5 x | 40.0 x | 42.5 x | 45.0 x |  |
| <b>"Big Spender"</b>          |                             |        |        |        |        |        |        |        |        |  |
| <b>Discount Rate of 30.0%</b> |                             |        |        |        |        |        |        |        |        |  |
| PV of Cash Flows              | (233)                       | (233)  | (233)  | (233)  | (233)  | (233)  | (233)  | (233)  | (233)  |  |
| PV of Terminal Value          | 1,054                       | 1,160  | 1,265  | 1,370  | 1,476  | 1,581  | 1,687  | 1,792  | 1,898  |  |
| Aggregate Value               | 821                         | 926    | 1,032  | 1,137  | 1,242  | 1,347  | 1,453  | 1,559  | 1,664  |  |

However, Big Spender's  
NPV is approximately  
half of "Watchin My  
Wallets" NPV.

(a) Assumes that capital expenditures equal depreciation expense.  
(b) Assumes that cash flow resulting from changes in working capital are minimal over time.

Source: TWP B2B Internet Group

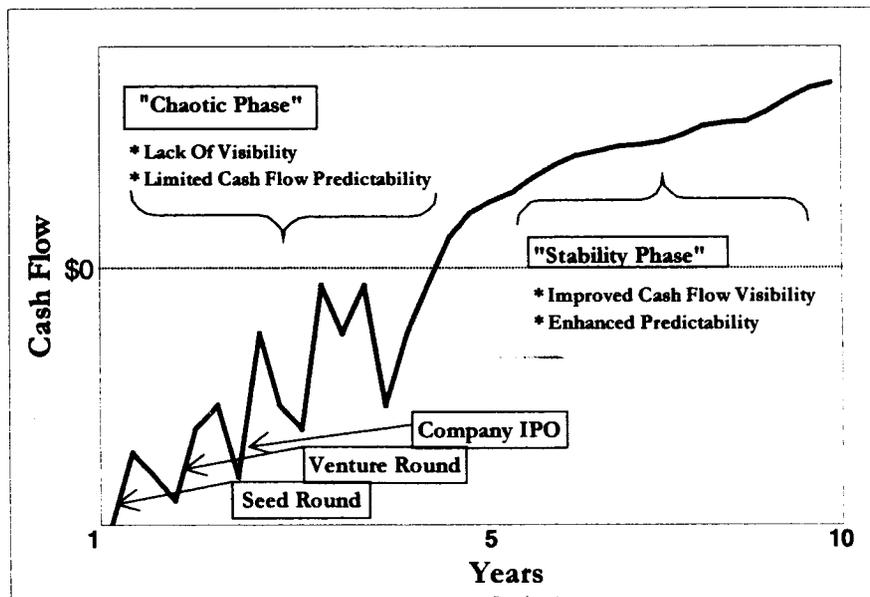
**We believe performing a discounted cash flow analysis will provide some insight to the timing and magnitude of a company's profitability potential.**

The performance of a multiple of revenue analysis in the absence of a discounted cash flow analysis fails to address the issue of whether the company can ever become profitable, in our view. We believe performing a discounted cash flow analysis will provide some insight to the timing and magnitude of a company's profitability potential. We place particular emphasis on the time it will take the company to reach cash flow positive relative to the amount of time that they incurred cash losses.

### The Dilemma Investors Face Today Regarding Valuation Of Internet Equities

Internet companies now enter the public market much more quickly than ever before in history. Given this recent phenomenon, investors are forced to analyze companies lacking real cash flow visibility. Investors are funding companies much earlier; therefore, they assume much higher levels of risk and expect corresponding returns. Historically, venture capitalists bore the risk of carrying a company through the iterations of multiple management teams and business models until a predictable cash flow stream could be established. Now, public market investors are forced to quickly determine whether a company has established a viable business model that will carry them to a phase of stable profits. We believe the following chart should help clarify the aforementioned themes.

### Life Cycle of Internet Equity



Source: TWP B2B Internet Research

During the “Chaotic Phase” companies are testing multiple business models, acquiring new clients, establishing a management team, recruiting a sales force, building infrastructure, etc. They are assembling the components of a working business. Accordingly, it is difficult to have predictable cash flow visibility. Due to this lack of visibility and ever changing business plans, we believe valuation should stem from cash

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flow generated once the company reaches the “**Stability Phase.**” The “Stability Phase” is defined as the phase when a company has established a sustainable growth rate with reasonable cash flow and earnings predictability. At this point, we can then apply a more conservative 15x – 25x multiple to the last year of projected future cash flows.

We think the greatest challenge of a discounted cash flow analysis lies in the ability to determine whether a company can reach the “Stability Phase.” We use the detailed checklist shown in Section I as a guideline for determining if a company can reach the “Stability Phase.”

### **The Lesser of Two Evils**

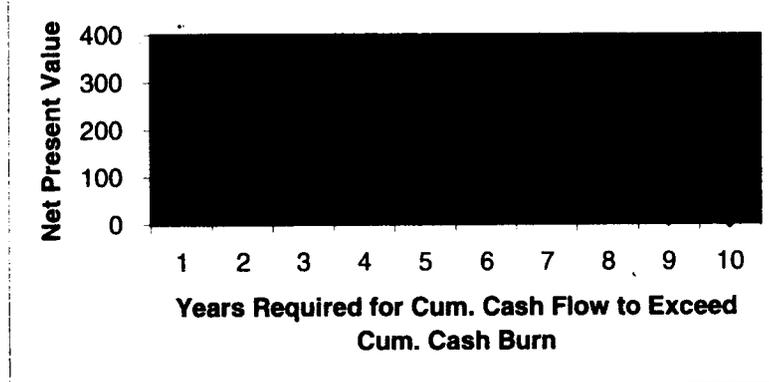
**We believe it is risky to rely solely on revenue multiples that ignore the long-term viability of the business model.**

Essentially, this methodology is “the lesser of two evils:” the use of revenue multiples on next year’s projected revenue or constructing a ten year projection outlook. On one hand, there are rapid revenue multiples that ignore actual cash flow and disregard the long-term viability of a company’s business model. On the other hand, there is a valuation reliant on one’s ability to model a company’s performance ten years down the road. Neither of these situations is favorable; however, we would argue that the latter at least addresses the possibility that a company could very well never reach profitability. Certain business models may never reach profitability no matter what level of volume flows through the system due to a flawed strategy and business model. For this reason, we believe it is risky to rely solely on revenue multiples that ignore the long-term viability of the business model.

**We recommend investors focus on the time it will take for the company’s cumulative cash flow, “CCF”, to equal historical cumulative cash losses, “CCL”.** The reason why we place so much emphasis on this is that it can have a fairly sizable impact on the valuation of the underlying equity if a company spends too much money for too long in the pre – profit years. We have found that there is an inverse relationship between years required for a company to generate CCF in excess of historical CCL and the company’s underlying net present value. The chart on the following page demonstrates this relationship. We plotted 10 different hypothetical companies each starting off in year 1 with a loss of \$5. However, each of the companies had a different year in which their CCF exceeded their historical CCL. The result of the analysis as shown in the following chart is that the longer it takes a company to generate CCF in excess of historical CCL, the greater the degradation of net present value.

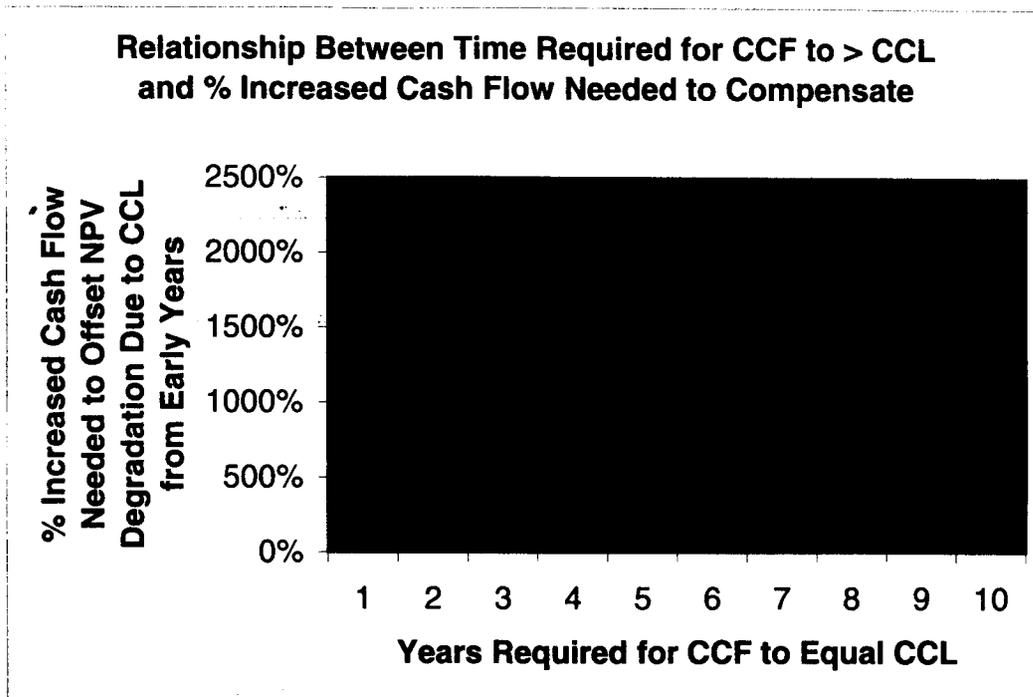
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### Inverse Relationship Between Time to Breakeven and Net Present Value - Hypothetical Company



Source: TWP B2B Internet Group

The CCF to CCL analysis also shows the direct relationship between years required for a company to generate CCF in excess of historical CCL and the amount of incremental cash the company will have to earn in the later years to compensate for the net present value degradation due to the cumulative cash losses in the early years. The diagram on the following page shows how companies that spend too much for too long in the early years have to generate an increasingly higher level of cash in the out years to compensate for the time that investors had to wait for the profitability. In other words, if company "A" takes ten years to earn back a \$1 loss it had in year one whereas company "B" only takes 9 years, then company "A" will have to earn five times more cash in year 10 to have a net present value equal to company "B". The following chart shows the direct relationship between the time required for CCF to exceed CCL and the required percentage increased cash a company must earn to compensate for the time value of money lost due to long lasting CCLs. The underlying detail to support the following chart can be found in Appendix F.



Source: TWP B2B Internet Group

**The prevailing accounting methodology lacks clarity on the issue of how a company should present revenue.**

### **The Comparable Company Analysis**

Despite our reluctance to value a company using multiples of revenue, trading comparables augment a company specific DCF (discounted cash flow) analysis. The comparable companies are organized according to business model (See Section 3 for a detailed description of the B2B business models).

### **If Investors Use Revenue Multiples, At Least Be Aware of the Inconsistencies**

With the advent of unprofitable Internet companies entering the public market, revenue multiples have become a common tool for valuation. However, we encourage investors to look at the business substance behind many of the published revenue numbers as there are major differences in accounting policies from company to company, particularly, as it relates to whether to account for revenue on a gross or net basis. The prevailing accounting methodology lacks clarity on the issue of how a company should present revenue. The result is that companies are accounting for revenue inconsistently, lending additional question to the use of revenue multiples.

**Multiples of gross profit provide a more apples-to-apples analysis. Growth trends in gross profit are far more valuable than revenue growth trends.**

By using gross profit multiples, discrepancies resulting from accounting differences are somewhat reduced. For this reason, we believe multiples of gross profit provide a more apples-to-apples analysis. Following the same logic, growth trends in gross margin are far more valuable than revenue growth trends. Again, we reiterate the importance of the 10 year discounted cash flow model as we believe this type of analysis eliminates potential accounting discrepancies associated with inconsistent accounting policies.

**Pure-Play B2B Comparable Company Analysis**  
(\$ 000)

| Company Name                               | Stock Price<br>(12/10/1999) | Shares Outstanding | Enterprise Value | LTM Revenue* | LTM Gross Profit* | Enterprise Revenue | Enterprise Value / Gross Profit |
|--|-----------------------------|--------------------|------------------|--------------|-------------------|--------------------|---------------------------------|
| <b><u>E-Co-ops</u></b>                     |                             |                    |                  |              |                   |                    |                                 |
| Ariba Inc                                  | \$236.75                    | 46                 | \$10,738.9       | \$45.4       | \$36.6            | 236.5x             | 293.4x                          |
| Clarus Corp                                | 62.00                       | 11                 | 689.9            | 42.4         | 24.1              | 16.3x              | 28.6x                           |
| Commerce One Inc                           | 424.50                      | 24                 | 10,114.7         | 17.7         | 6.8               | 572.0x             | 1,494.3x                        |
| Concur Technologies Inc                    | 32.63                       | 23                 | 638.6            | 37.0         | 19.2              | 17.3x              | 33.3x                           |
| <b><u>E-Supply Chains</u></b>              |                             |                    |                  |              |                   |                    |                                 |
| Pcorder.com Inc                            | 52.19                       | 19                 | 907.5            | 36.1         | 17.3              | 25.1x              | 52.5x                           |
| <b><u>E-Reseller</u></b>                   |                             |                    |                  |              |                   |                    |                                 |
| Chemdex Corp                               | 92.44                       | 24                 | 2,056.6          | 11.6         | 0.6               | 177.5x             | 3,601.7x                        |
| <b><u>E-Distributors</u></b>               |                             |                    |                  |              |                   |                    |                                 |
| Fatbrain.com Inc                           | 34.75                       | 11                 | 393.2            | 28.8         | 6.6               | 13.7x              | 59.6x                           |
| Imagex.com Inc                             | 30.00                       | 17                 | 473.3            | 7.0          | 1.7               | 67.6x              | 282.8x                          |
| Intraware Inc                              | 42.50                       | 24                 | 1,004.2          | 61.1         | 14.5              | 16.4x              | 69.3x                           |
| Multex.com Inc                             | 35.75                       | 27                 | 907.8            | 34.0         | 24.7              | 26.7x              | 36.8x                           |
| Purchasepro.com                            | 180.00                      | 19                 | 3,317.5          | 4.0          | 3.3               | 831.9x             | 1,002.3x                        |
| Rowecom Inc                                | 48.25                       | 10                 | 442.2            | 28.6         | 1.1               | 15.4x              | 417.1x                          |
| Sciquest Com Inc                           | 45.63                       | 9                  | 377.3            | 1.4          | 0.5               | 267.0x             | 688.4x                          |
| Stamps.com Inc                             | 78.00                       | 40                 | 3,074.3          | 0.0          | -0.6              | NA                 | NA                              |
| <b><u>Lead Generator</u></b>               |                             |                    |                  |              |                   |                    |                                 |
| Verticalnet Inc                            | 124.94                      | 36                 | 4,438.1          | 11.9         | NA                | 371.7x             | NA                              |
| <b><u>Secondary e-Trading Exchange</u></b> |                             |                    |                  |              |                   |                    |                                 |
| Freemarkets Inc                            | 280.00                      | 26                 | 7,371.7          | 16.0         | 7.2               | 459.7x             | 1,018.0x                        |
| <b><u>Other</u></b>                        |                             |                    |                  |              |                   |                    |                                 |
| Internet Cap Group Inc                     | 224.94                      | 127                | 28,247.2         | 16.1         | NA                | 1,754.5x           | NA                              |
| <b>Average</b>                             |                             |                    |                  |              |                   | <b>286.4x</b>      | <b>534.0x</b>                   |

\* As of 9/30/99

Source: FACTSET and Company reports

**Traditional B2B Comparable Company Analysis**  
(\$ 000)

| Company Name               | Stock Price  | Shares Outstanding | Enterprise Value | LTM Revenue* | LTM Gross Profit* | Enterprise Value / Revenue | Enterprise Value / Gross Profit |
|----------------------------|--------------|--------------------|------------------|--------------|-------------------|----------------------------|---------------------------------|
|                            | (12/10/1999) |                    |                  |              |                   |                            |                                 |
| Datastream Systems Inc     | \$16.75      | 20                 | \$325.9          | \$118.4      | \$72.7            | 2.8x                       | 4.5x                            |
| Harbinger Corp             | 24.63        | 39                 | 886.1            | 149.6        | 100.3             | 5.9x                       | 8.8x                            |
| Sterling Commerce Inc      | 33.13        | 88                 | 2,663.4          | 623.1        | 493.8             | 4.3x                       | 5.4x                            |
| Project Software & Dev Inc | 75.50        | 11                 | 708.6            | 145.6        | 98.3              | 4.9x                       | 7.2x                            |
| Qrs Corp                   | 74.00        | 14                 | 1017.5           | 118.7        | 56.8              | 8.6x                       | 17.9x                           |
| Sabre Hldgs Corp           | 48.75        | 131                | 5,987.1          | 2,465.6      | NA                | 2.4x                       | NA                              |
| <b>Average</b>             |              |                    |                  |              |                   | <b>4.8x</b>                | <b>7.3x</b>                     |

\* As of 9/30/99

Source: FACTSET and Company reports

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## INTERNET ACCOUNTING OVERVIEW

The accounting debate over whether to account for revenue on a gross or net basis is a very hot topic in both accounting and investor circles, particularly in the B2B category. Recently, the Emerging Issues Task Force met to discuss an inclusive list of the major accounting issues for Internet businesses. One of the issues discussed was how Internet companies should present revenue on their income statement: gross or net? The SEC will likely rule on certain standard procedures for revenue presentation policies before the end of 1999. Until that ruling, we have summarized the most important issues as they relate to revenue recognition and what the EITF's general position is on these issues.

### Revenue Presentation

Certain Internet companies, along with their accountants, are lobbying to account for revenue on a gross basis. The problem with this scenario is that most Internet companies do not take possession of the inventory; making it questionable as to whether the revenue should be the product's selling price or the fee rendered by the sale of the product. We believe this issue is of paramount importance considering Wall Street's propensity to tie Internet company valuations to revenue. For example, when a pharmaceutical distributor has its products drop shipped to the buyer, the distributor must account for revenue on a gross basis and then present the cost of goods sold separately. For this reason, Internet-based distributors argue that they too should be able to account for their revenue on a gross basis, like their "bricks and mortar" counterparts. Accordingly, the EITF has laid out the following guidelines to determine whether an Internet company can account for its revenue on a gross basis.

### EITF Guidelines

- Must Set the Price for the Product
- Must Bear Credit Risk Upon Buyer Payment Default
- Must Take Title to the Product
- Must Be Responsible for Fulfillment of the Product to the End User

**Must Set the Price for the Product.** If the Internet company determines the price the buyer receives, then this serves as a supporting argument for why the Internet company can account for revenue on a gross basis. If the end-user could go directly to the manufacturer and receive a similar price, the Internet company is not the one setting the price and accordingly will most likely have to account for revenue on a net basis.

**Must Bear Credit Risk Upon Buyer Default.** Most B2B transactions will not be executed with a corporate credit card. Accordingly, the issue of bad debt becomes an important one since the credit card intermediaries are not as prevalent as they were in the B2C markets. The EITF generally holds that if the Internet company bears the financial risk of its receivables, then it should account for revenue on a gross basis.

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**Must Take Title to the Product.** If the Internet company takes physical control of the product or assumes the title to the underlying product then the EITF generally thinks that the Internet company should account for revenue on a gross basis. Additionally, if the Internet company is responsible for handling customer complaints and returned merchandise, those attributes further strengthen an argument for accounting for revenue on a gross basis.

**Must Be Responsible for Fulfillment of the Product:** If the Internet company is accountable for fulfillment of the underlying product, then this is one more attribute the EITF considered to be a supporting argument for accounting for revenue on a gross basis. For example, if the Internet company's customers do not receive their product, whom do they call? If they call the Internet company, then that means the Internet company is responsible for product fulfillment.

### **Advertising Barter Transactions – Simply Swapping?**

The prevalence of Internet companies exchanging the right to advertise on each other's sites has increased. The result is a misleading revenue number as companies recognize revenue from the advertisements placed by the partner company and increase advertising expense by the theoretical cost of advertising on the partner company's website. Accordingly, this accounting phenomenon can create a false perception of organic revenue growth. Traditionally, this methodology may have been overlooked; however, the importance placed upon revenue multiples increases the repercussions of inflated revenue numbers.

### **Shipping and Handling**

Because product delivery is an integral part of an Internet company's business, the issue of how to account for the cost of transporting product is significant. Shipping costs have been a moving target hiding out in various line items across income statements. Many companies charge the customer and account for it as additional revenue without including the expense in cost of goods sold. Instead the cost is allocated to selling expenses. In the future, we believe transparent disclosure will be mandatory.

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### **Sooner Rather Than Later – When to Recognize Revenue?**

Never before has there been such a plethora of auction-based business models. With the increased number of auctions due to the Internet, comes increased attention to how these companies are accounting for revenue.

There are usually two components of an auction-based revenue model: the front-end and the back-end. The front-end listing fee is booked immediately while the back-end transaction fee is booked at the termination of the listing period. There are two problems with this methodology. One, the listing fee is earned ratably over the listing period; thus one could argue that revenue is being recognized prematurely. Two, the back-end fee is recognized regardless of whether a transaction was consummated and the customer received a refund. For example, a supplier lists a product, and that product is consequently sold. Upon consummation of the sale, the Internet company recognizes a back-end fee associated with that sale. If the buyer returns the product, the back-end fee remains in the Internet-company's revenue despite the fact the Internet company reimburses the supplier who posted the product. We think a more conservative way to address these issues would be to have a sales allowance contra account to revenue.

Due to the numerous debates pertaining to these accounting ambiguities, we believe the SEC will likely lay out definitive rules for revenue presentation early in 2000.

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## SECTION 5: UNIQUE ALTERNATIVES FOR VALUE CREATION IN THE B2B SPACE

**We believe one of the two most important things that B2B companies need are buy-side and sell-side adoption. Certain legacy assets help fulfill these needs.**

We believe there are alternative ways to create value for the investor in the B2B space beyond finding the next pure-play private equity business plan or IPO. We have found that certain "legacy assets" can be acquired at more favorable valuations than their "dot com" counterparts.

One of the greatest challenges facing the new B2B "dot coms" is the "chicken and egg" phenomenon. The "chicken and egg" phenomenon is the endless cycle associated with trying to get buyers to adopt a marketplace without suppliers present and vice versa. We have found that there are certain legacy assets that can be acquired to address the chicken and egg phenomenon. We think certain software assets can be leveraged into the buy-side or sell side equation of a marketplace. Also, we have seen companies acquire bricks and mortar distribution businesses to help jumpstart either the buy-side or the sell side of a marketplace. Overall, we believe there will be a tremendous amount of both strategic partnership and merger activity between legacy businesses and the new dot coms. We believe there are opportunities in the form of legacy businesses with pre-existing customer bases, technologies and supplier relationships that can be leveraged to create a "dot com" opportunity. We believe there are businesses with legacy assets that can be acquired at much more favorable valuations than their pure play "dot com" counterparts.

We believe one of the two most important things that B2B companies need are buy-side and sell-side adoption. Through case studies, this section will show how traditional software companies and distribution companies can be leveraged to fulfill these needs.

### Legacy Software Companies Can Help Facilitate Buy-Side Adoption

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## Case Study #1

### Buzzsaw.com

An example of a legacy software company proactively seeking out Internet initiatives is Autodesk. The company created Autodesk Ventures, which was formed in June 1999 to research Internet initiatives surrounding Autodesk's core business. Autodesk is in the design software and digital content creation market for the construction industry. The company is traditionally known for CAD (computer-aided design) software targeting architects and engineers. In an attempt to embrace the potential advances that the Internet may have on the AEC (architecture, engineering and construction) industry, Autodesk developed an incubator to proactively generate business ideas to embrace the Internet along side its existing business. The first initiative we have seen out of this venture is a company known as Buzzsaw.com.

Launched November 1, 1999, Buzzsaw.com is a subsidiary of its parent company Autodesk. Buzzsaw's goal is to provide a comprehensive solution to designers, engineers, contractors and owners in the construction industry. With its signature product *Project*

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*Point*, Buzzsaw.com wants to be the B2B hub for the construction industry. Buzzsaw.com uses the Internet as an organizational tool to unite individual project participants in multiple locations that are working to complete a construction project.

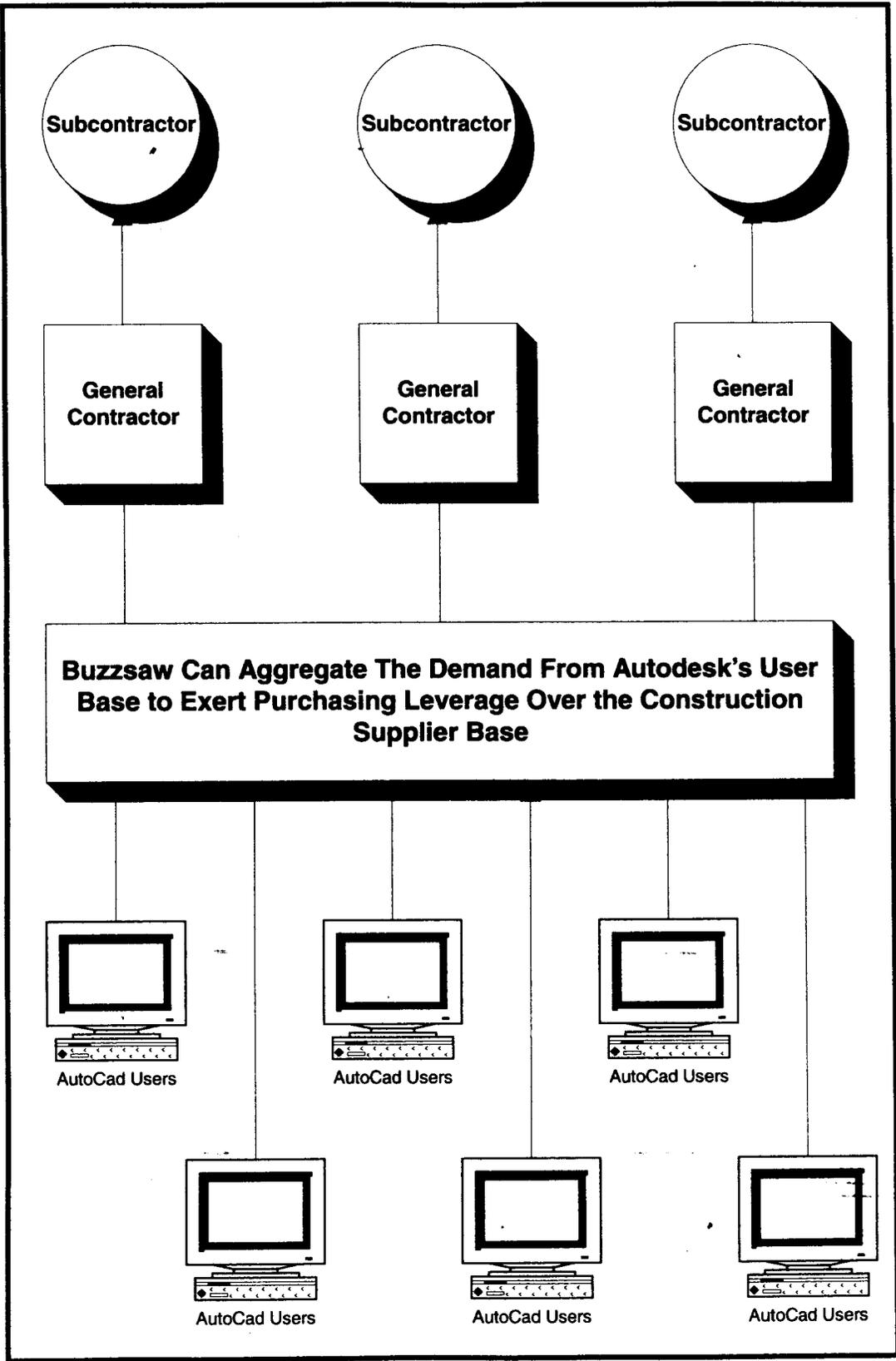
### **Industry Background**

Today, the building design and construction market is one of the largest industries in the world, responsible for annual sales of \$672 billion in the U.S. and \$3.2 trillion worldwide. In the U.S., the industry is comprised of 45,000 manufacturers, 180,000 retailers, 750,000 architects, and 1.4 million contractors (Forrester Research). Due to the numerous individual players at each level in the channel, we believe there is an obvious need for a central platform to unite fragmented participants.

The "project-based" nature of the industry creates demand for a comprehensive channel solution. Every member contributing to the project must have access to that project regardless of their position in the distribution channel. For example, the designer must have access to the engineer while simultaneously communicating with the subcontractor. The completion of a construction project is complex and requires each participant's awareness of the project status at any given time.

### **How Does Autodesk's Role Benefit Buzzsaw.com?**

Autodesk has an installed base of software users. These users also represent a large portion of Buzzsaw.com's target market: the architects and engineers. The new edition of AutoCAD, Autodesk's software, will have a direct link to Buzzsaw.com's online construction portal, creating a solid initial eyeball base. By aggregating the demand from Autodesk's user base, we believe the company will be in a position to exert some level of purchasing leverage over the fragmented suppliers in the construction industry. See diagram on the following page.



Source: TWP B2B Internet Research

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## Business Model

Earlier in the report we refer to the "spark" that causes sales to spike when a company begins to exhibit adoption. Buzzsaw.com's "spark" is that the service is free. The basic service is free, and the company charges for incremental services. Ultimately, Buzzsaw.com plans to derive the majority of its revenue from advertising. Eventually, the company plans to layer on e\*commerce, subscriptions and "data mining." We believe Buzzsaw.com is an excellent example of how traditional legacy assets can be leveraged to create an e\*commerce play.

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## Case Study #2

### PSDI's MRO.com Subsidiary is Another Example of Leveraging an Installed Software Base For Buy-Side Adoption

PSDI represents another example of how traditional software companies are leveraging their installed base to aggregate purchasing demand and eventually create an e\*commerce marketplace.

PSDI develops, markets and supports enterprise asset maintenance software. Businesses, government agencies and other organizations use its MAXIMO product to assist them in maintaining high-value capital assets such as plants, facilities and production equipment. PSDI is also within the general MRO category; however, they focus on the mission critical MRO category for industrial users. Oftentimes, PSDI's MRO category is referred to as "shop floor MRO." For example, users of PSDI's software are typically the "shop floor general manager." The shop floor manager uses the software to manage the "maintenance and repair" of his shop floor equipment. For example, the software allows the shop manager to know the exact time to order a new oxygenated valve for his machinery.

PSDI has funded a wholly owned subsidiary, MRO.com, that seeks to automate procurement of supplies necessary to support high-value capital assets.

By leveraging its installed base of software users, PSDI is in a unique position to aggregate demand from the buy-side of the industrial MRO market. This is very similar to Autodesk's strategy of leveraging its AutoCad users to aggregate the buy-side of the marketplace.

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### **Traditional Distributors Can Also Quickly Increase Buy-Side Adoption**

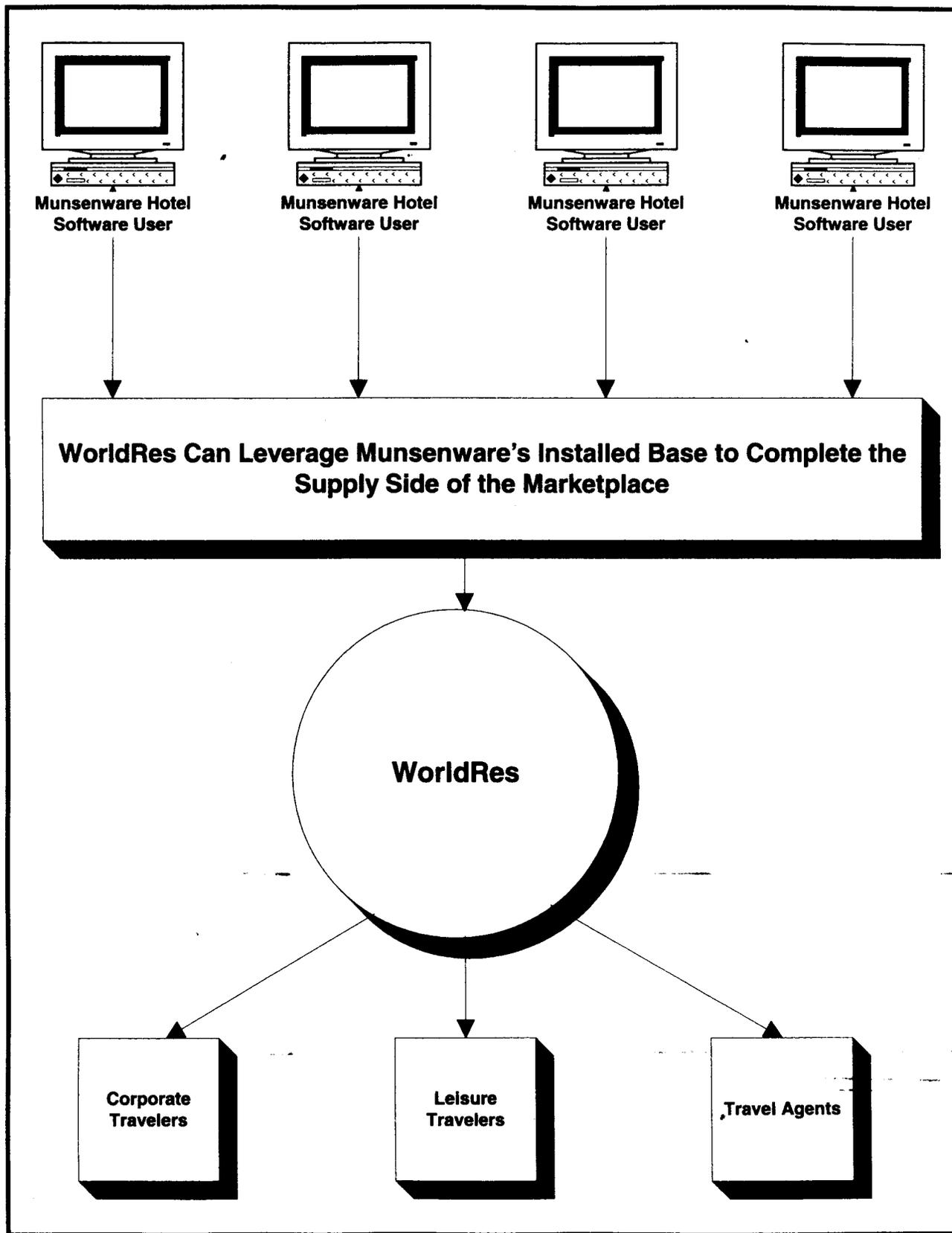
RoweCom's recent acquisition of Dawson Information Services provides an example of how acquiring a bricks and mortar distribution company can help expand the buy-side of the traditional distributor's marketplace.

RoweCom is a B2B e-commerce company in the knowledge resources industry. Dawson Information Services is a traditional reseller of subscription titles to large corporations. By acquiring Dawson, RoweCom expanded its customer base from 1,300 buyers to 22,000 buyers. The reason why this was a great way to increase its customer base was because RoweCom was able to pay a "legacy" multiple for the distribution business but then migrate Dawson's customers to a much lower cost Internet platform. RoweCom paid less than 1x revenue for Dawson Information Services.

Through the transaction, the company reduced its customer acquisition costs by one third and increased its customer base by approximately 1,400%. After the installation of RoweCom's platform, there is significant potential up-sell opportunity resulting from the more efficient and automated platform and the dedicated training, a service provided by the RoweCom customer support function.

### **Successful B2B Companies Need Supply-Side Adoption**

As illustrated in the previous case studies, there are a host of opportunities to get buy-side traction by acquiring certain legacy assets. Additionally, we are seeing transactions and strategic partnerships between "dot coms" and legacy players to help with supply side adoption. For example, Worldres' recent acquisition of Munsenware is an example where the "dot com" acquired a software company to help them gain traction with the supply side of its marketplace. Worldres is a trading exchange model in the hotel vertical market. Worldres has built a network between hotels and travel buyers (with a particular focus on leisure travel buyers) whereby hotels can list their room availability at Worldres's site and then buyers can order their rooms online. Munsenware is a property management software company with about 10% market share among leisure hotels. Hotel owners use Munsenware's software to help them manage their room availability. By acquiring Munsenware, we believe Worldres will be able to leverage Munsenware's installed base to increase the hotel supply side of its marketplace (See diagram following this discussion). Typically, these legacy software assets can be acquired at a relatively inexpensive valuation and accordingly lower the "dot com's" supplier acquisition costs.



Source: TWP B2B Internet Research

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### **Traditional Exchanges Represent Another Unique Way to Find Value**

Sabre is a traditional EDI-based business travel intermediary between corporate travel buyers and travel suppliers (hotels, auto rental agencies, airlines, etc). Sabre has recently put initiatives in place to migrate its core service offering to the web. Additionally, they will provide value-added services such as expenses tracking and business rule compliance. We think companies like Sabre could potentially see improvements in their operating costs as they migrate to a web-based lower cost infrastructure. Sabre already has the supply side built out with the different travel suppliers so it will be relatively easy for them to migrate their network to the web and, like many traditional exchanges, it already has what many of the new "dot coms" are trying to achieve: a network of users and a critical mass.

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## **SECTION 6: B2B INTERNET COMPANIES DIFFER FROM B2C INTERNET COMPANIES**

We have identified six major areas where we believe B2B e-commerce will be different from Business – to –Consumer, “B2C” e – commerce. First, we believe the adoption rates will be slower in B2B than they were in B2C. Second, the economics of the business models in B2B will be different than the economics of the B2C business models. Third, there are inconsistent payment platforms in the B2B market whereas in the B2C market there are consistent payment platforms. Fourth, the need for management channel domain expertise is critical in B2B whereas in the B2C market it is less critical. Fifth, the data taxonomy issues are more complex for B2B companies than they are for B2C companies. Finally, due in large part to the aforementioned factors, the overall barriers to entry in the B2B market are much higher than in the B2C market.

### **Slower Adoption Rates In B2B Than In B2C**

We believe the development of the B2B e-commerce market will be slower and more complex than that of the B2C e-commerce market. Due to complex relationships and narrowly defined industries, B2B companies have significantly higher hurdles to overcome.

In the B2C market, a consumer e-commerce company could use a television ad promoting its website to potentially create a powerful brand immediately. B2B companies must rely on relationships and a sales force to create their brand recognition. Because business buying behavior is harder to alter than consumer buying behavior, B2B companies must spend time educating their prospective customers (i.e., purchasing officials and senior management) on the efficiencies associated with web-based commerce. This process is not only time consuming but also costly.

For B2B e-commerce to accelerate, we believe companies must have broad-scale adoption from the business buyer. The buying dynamics of business buyers are different from those of consumers. Dislodging the purchasing relationship between a consumer and a retailer can be as simple as putting up a consumer Internet commerce website and advertising significant cost savings. The consumer and the retailer have no binding contractual relationship. In the B2B space, the salesperson must market to a procurement officer who often times has contractual agreements with bricks-and-mortar suppliers. Finally, the process by which a business buyer decides to make a purchase can include obtaining multiple levels of approvals, adding layers of bureaucracy and complicating the sales process. All of these factors lead to a much slower adoption cycle in the B2B market than what we saw in the B2C market.

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## **B2B Business Model Economics Will Be Different From B2C Business Model Economics**

The fact that the business models differ in the B2B market compared with the B2C market is an important factor because investors tend to associate exponential revenue growth rates with Internet companies. The B2B business models will be different from the B2C models in two ways: marketing expenditures and revenue development.

### **Marketing Expenditures**

Typical consumer Internet commerce companies use traditional marketing campaigns to cement their brand and establish a first mover advantage. Large marketing expenditures occur early in the life cycle of the business and cause revenue to accelerate quickly. Initial marketing costs are high but should diminish as a percent of sales as the business develops.

Conversely, B2B, companies will experience less marketing expense leverage as they are unable to leverage national media and advertising tactics to develop a franchise. Instead, the B2B company hires a sales force to call on its target market. There is a large salary and commission component to a B2B company's marketing expenditures that increase in tandem with revenue. Thus, marketing costs as a percentage of sales take longer to trend downward.

### **Revenue Development**

In the consumer Internet market, the time it takes the company to grow revenue is much less than that of a typical B2B Internet company. The B2B Internet company must develop relationships in the channel and a critical mass of buyers and sellers.

Conversely, consumer Internet companies exhibit exponential revenue growth rates. As mentioned earlier, a consumer Internet company often buys a primetime television ad and overnight the revenue ramp begins to take off in an exponential manner. The sales cycle of most B2B Internet commerce companies requires a sales force to manage the ongoing sales cycle associated with building relationships in the channel. The B2B revenue ramp is less exponential and more linear in its nature than that of B2C.

### **The B2B Market Has Inconsistent Payment Platforms**

Credit cards create a uniform payment platform in the B2C market. The transactional functionality of a consumer website was contingent upon the ability to process credit cards. Consumer website designers could easily integrate the payment platform. The B2B market lacks a ubiquitous payment platform creating complex financial and risk management issues. Purchase orders must be written and undergo various internal approvals. If business buyers do not adjust their internal buying process to facilitate online procurement, the time for broad-scale adoption will be lengthened. Although a

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variety of B2B companies market software to solve all of these buy-side procurement problems, the challenge of changing a business buyer's payment process is slow.

### **Management Channel Domain Expertise Is Critical In B2B Whereas In The B2C Market It Is Less Critical**

Since B2B Internet companies must develop industry relationships, the senior management team must have strong channel representation. For example, pcOrder, a B2B company in the PC channel, hired Ross Cooley as its chairman and CEO. Cooley had over 10 years of executive-level experience at Compaq Computer and IBM prior to joining pcOrder. To achieve adoption within the PC channel, the company hired someone who could command an audience with the executive level members of the PC channel. We think domain expertise from senior management is critical to the success of a B2B Internet company.

### **Data Taxonomy is More Complex in B2B Than in B2C**

One important factor that distinguishes a B2C or a C2C exchange from a B2B exchange is the method in which the product data is taxonomized. Taxonomy refers to the method and hierarchy in which the product data is entered on the website. For example, with eBay, individuals post the relevant product data on a case by case basis. The vast product database is the result of thousands of individuals describing the item for which they are trying to sell. This is in contrast to the typical taxonomy process of a B2B exchange. In most cases a company trying to liquidate a portion of their inventory will have to post data on a variety of items. This will take more time compared to the eBay participant, in that an individual will have to input each item and record the physical attributes so that the potential buyer will be empowered to make an informed purchasing decision. It is this subtle difference that might result in B2B exchanges taking longer to reach critical mass when compared to C2C exchanges.

### **Barriers To Entry In The B2B Market Are Much Higher Than In The B2C Market**

Many B2B companies have an up front cost commitment requirement (for example, an up front software license fee investment). As a result, the B2B customer has to make a material up-front cost commitment (such as an up front software license fee investment) when choosing an online procurement solution, thus raising the switching costs. Furthermore, customers of B2B companies must make certain adjustments to their technology back-ends in order to become a part of a marketplace. Since most B2B architectures are not totally web-based but more intranet-based, there are certain "inside the firewall" adjustments that must be done before a client company can begin to engage in B2B Internet Commerce. Accordingly, these factors help to create a barrier to entry for the B2B company in question, which we view as a positive.

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The necessary channel relationships also serve as a barrier to entry in the B2B space. For example, SciQuest, which is a B2B company in the scientific-chemicals space, had to foster business development relationships with the supply and demand sides of the e-commerce equation and develop relationships with the chemical suppliers and the scientist-buying community. Once these relationships are in place, it is fairly hard to dislodge them, especially when one considers the up front costs associated with doing business with a B2B company. Conversely, in the B2C market, the only material barriers for consumer Internet companies in terms of developing the buy-side of the community is having the access to capital and a creative branding campaign. As a result, customer retention is more difficult. Despite strong brand awareness, B2C customers rarely incur a cost to switch suppliers. Overall the barriers to entry in the B2B market are much higher than the barriers to entry in the B2C market.

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## SECTION 7: B2B CATEGORIZATION METHODOLOGY

We organize B2B e\*commerce companies into three categories: **Vertical Marketplaces, Horizontal Marketplaces and Marketplace Enablers**. Our organization focuses on how a particular company interacts with an industry or channel.

Vertical B2B marketplaces facilitate commerce or provide services to members of a specific industry or channel. For example, e-STEEL provides a marketplace specifically for the buyers and sellers of steel. The content and commerce center entirely around the steel industry, and the target market comprises buyers and sellers only in the Steel industry.

Vertical Marketplaces aim to migrate traditional vertical-specific business processes to the Internet. For example, PaperExchange is a vertical marketplace focused solely on the paper and pulp vertical. PaperExchange's users include members of the paper value chain. The diagram on the following page provides a graphical representation of selected vertical markets and sample companies within those vertical markets.

# Vertical B2B Marketplaces

**Restaurants (e.g., Instill)**

**EMS & Components (e.g., Partminer)**

**PC Hardware & Software (e.g., PCOrder)**

**Precision Instruments / Distribution (e.g., SciQuest)**

**Steel (e.g., MetalSite)**

**Pulp & Paper (e.g., PaperExchange)**

Source: TWP B2B Internet Research

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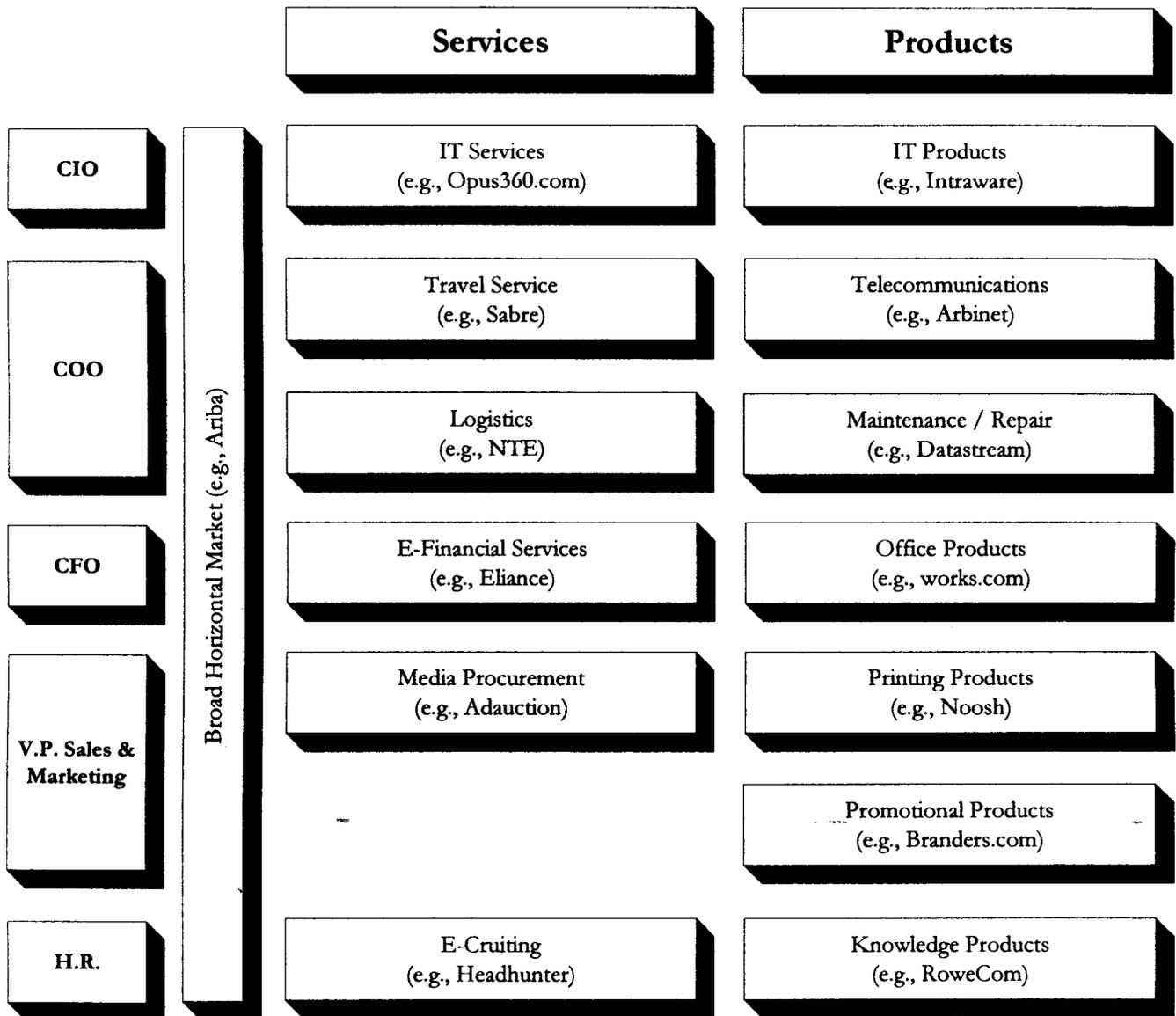
Conversely, Horizontal Marketplaces facilitate commerce or provide services that transcend numerous channels. For example, a horizontal player may provide a marketplace where buyers and suppliers from various industries meet to exchange products and services common across multiple channels. The key variable that differentiates vertical and horizontal marketplaces is the end user. If the end user of the marketplace operates in the same vertical category as a marketplace user at the top of the supply chain (such as a manufacturer), then it is a vertical marketplace. If the end users of the marketplace can span multiple industries, then the marketplace is most likely horizontal.

There have been different terms used to describe what we call Horizontal Marketplaces. The most frequently used terms include: maintenance, repair and operating supplies, "MRO" supplies, non-production goods, operating resources, indirect goods and "the procurement space." We collectively refer to all companies operating in the aforementioned categories as Horizontal Marketplaces. Horizontal supplies are products required for the day-to-day operation of a business, but which do not go directly into the business' core product. Essentially, these supplies do not contribute to the cost of goods line item of the income statement. For example, office supplies are a component of the horizontal category. These goods are not mission critical, but their absence inhibits employee productivity. These goods are a component of "non-operating" goods and comprise a significant portion of SG&A (Selling, General & Administrative) expenses of any type of business regardless of vertical domain. Horizontal products are services that do not go directly into the production process. Essentially, horizontal products and services are primarily non-operating supplies that all companies need to effectively conduct business. Examples include office supplies, printing, janitorial supplies, IT services, computer products and staffing. The majority of the emerging horizontal marketplaces seek to address the demand for non-operating supplies.

Horizontal Marketplaces can be product-centric, services-centric or a hybrid of products and services. Horizontal products include items such as office supplies, office furniture, corporate identity products and computer products. Branders.com is a company that provides corporate identity products to companies over the Internet. Demand for this type of product bridges any industry. Branders.com could provide product to Coke employees while simultaneously providing branded corporate products to Intel.

Horizontal services include accounting, finance, staffing and legal services. Regardless of the industry, size or location companies will need some level of these services. Headhunter.net is an example of a horizontal marketplace for recruitment and staffing services. This company essentially fulfills the service traditionally provided by legacy staffing companies and in-house human resources departments.

# Horizontal B2B Marketplaces



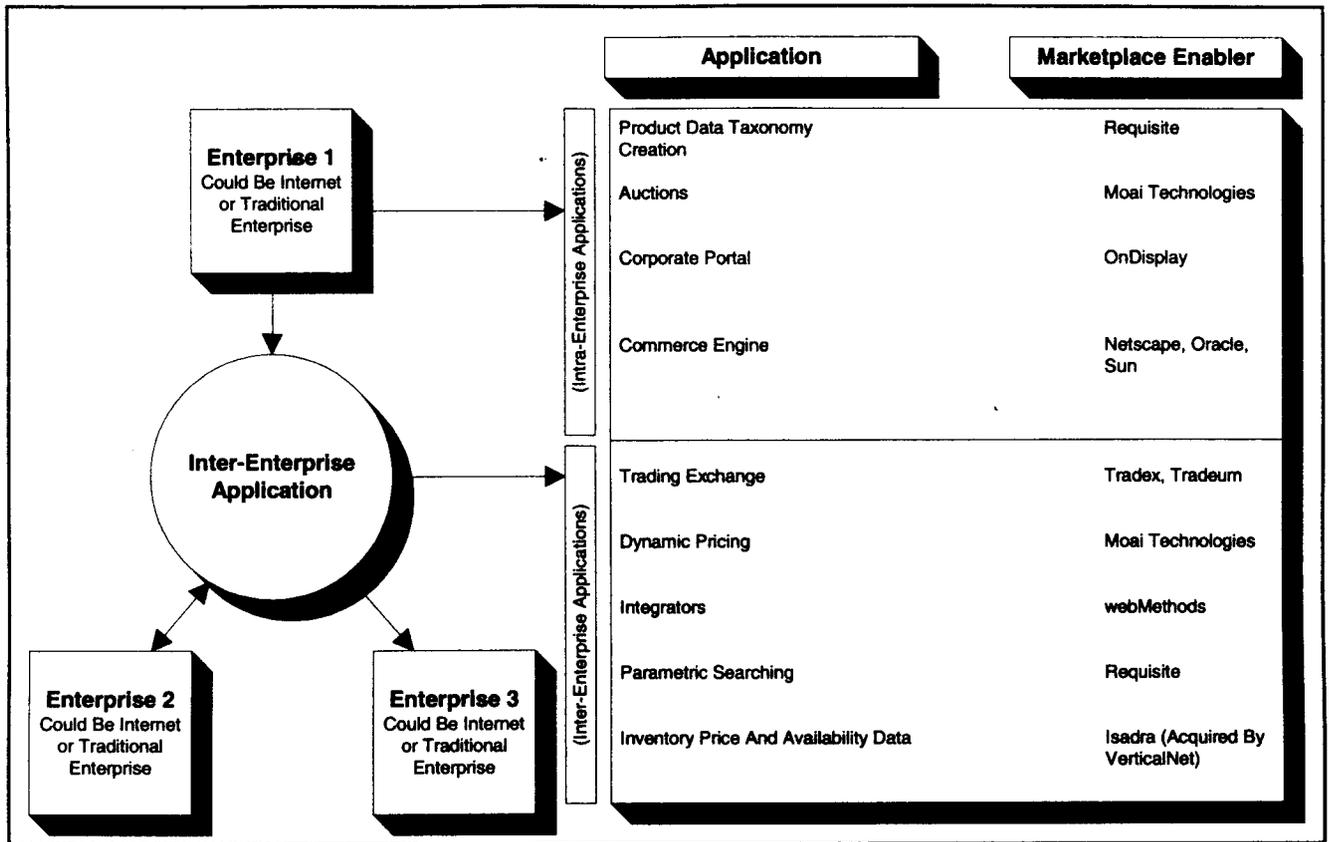
Source: TWP B2B Internet Research

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Powering the vertical and horizontal B2B marketplaces are B2B Marketplace Enablers. B2B e\*commerce has and will continue to spawn new classes of technology applications. Marketplace Enablers provide technology and service that “enable” these new technology applications for both Internet-based companies and traditional companies. For example, Moai Technologies simultaneously provides dynamic pricing applications for Ingram Micro, a traditional computer product distributor, as well as pure play “dot coms” like GoCargo.com. Marketplace enablers are completely indifferent to the channels that they serve.

There are multiple applications required to enable the new B2B e\*commerce environments. The primary applications include Trading Exchange Applications, Product Data Taxonomy Creation, Parametric Searching Functionality, Auctions/Dynamic Pricing, Corporate Portals, Integration Applications and Commerce Engines. The following diagram provides a graphical overview of the new technology applications required for B2B e\*commerce.

## Marketplace Enablers



Source: TWP B2B Internet Research

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## SECTION 8: DETAILED B2B SECTOR OVERVIEW

### Horizontal Marketplaces

This section outlines horizontal marketplaces, which are B2B marketplaces providing products and services bridging multiple channels. The end users of such marketplaces can be members of a variety of different industries. There are three categories of companies in the Horizontal Marketplace category: Broad Horizontal Marketplaces, Product Marketplaces and Services Marketplaces. The diagram on the following page provides a graphical overview of the Horizontal Marketplace landscape.

### Broad Horizontal Marketplaces

Broad horizontal marketplaces provide an overarching platform for the procurement of numerous horizontal products and services. Horizontal product and services providers often form alliances with broad horizontal marketplaces providing supply. Below, we lay out the various broad horizontal marketplace target markets and their respective functionality and service requirements; then we provide an overview of the competitive landscape including the initiatives of traditional ERP (Enterprise Resource Planning) and software companies.

### Target Markets

There are numerous B2B Internet companies vying to become the standard marketplace for broad horizontal products and services. Each solution is unique whether it be by target market, functionality, pricing or business model. Below we outline the different markets and the respective companies targeting each market. We have identified three different markets: (1) Global 2000 companies, (2) Small and Mid-Sized Businesses (SMB), and (3) Small Office and Home Office (SOHO) businesses

**Global 2000.** This target market consists of multi-national corporations with complex international trading needs and large companies with multiple locations. These companies usually have designated in-house procurement departments. Horizontal marketplace needs are complex; however, business services, staffing and finance needs are most likely addressed by ERP solutions or in-house divisions.

**Small and Mid-Sized Businesses (SMB).** Small businesses represent the class of companies with fewer than 100 employees while mid-size businesses have roughly 100-2,000 employees. According to the US Small Business Administration, small and mid-size businesses comprise over 99% of the businesses in the United States. Small and mid-size businesses (SMBs) employ over 58 million workers, accounting for 46% of the U.S. labor force (Source: Cahners' In-Stat Group). An estimated \$4 trillion in gross production results from companies employing anywhere from 10-500 employees. Although they often lack defined purchasing departments, operating resource requirements may be complex

and current processes are likely inefficient and unautomated. The Internet creates a platform to aggregate this fragmented segment and address service and purchasing needs.

**Small Office and Home Office (SOHO).** SOHO refers to small companies and home office operations. There are approximately 28 million SOHO workers in the United States. The SOHO market has rudimentary indirect product and business services requirements. The estimated gross market size for this segment is \$200 billion and is extremely fragmented. Within each of the targeted segments, we believe there are unique requirements. The following diagram outlines the requirements by segment.

### Required Functionality By Target Market

|  | International | ERP Integration    | Workflow Planning | Reports            | Catalog                                |
|--|---------------|--------------------|-------------------|--------------------|--|
| <b>Global 2,000</b>                        | Important     | Required           | Complex           | Detailed Reporting | Real-time Supplier Connectivity Needed |
| <b>SMB (Small to Medium Size Business)</b> | Not Important | Required Sometimes | Detailed          | Basic Reporting    | Vendor Support Needed                  |
| <b>SOHO (Small Office/Home Office)</b>     | Not Important | Not Necessary      | Simple            | Not Important      | Standard Product Listing Needed        |

Source: TWP B2B Internet Research

**Competitive Landscape.** There are multiple companies competing in each of the different aforementioned target market segments. For example, Ariba and Commerce One are the two main players in the Global 2000 segment. While works.com and OutPurchase.com both address the Small-to-Medium Size businesses (SMB) segment.

Additionally, traditional software and ERP providers have recognized the opportunity to expand their offerings to include procurement capabilities. Most of these companies want to layer on marketplace and procurement capabilities to existing database, software and intra-enterprise automation offerings. Certain traditional companies have more aggressively targeted the B2B e-commerce space. Following the diagram below, we provide a detailed overview of the initiatives of certain traditional software and ERP players.

## Competitive Landscape Overview By Target Market

| <u>Companies</u>              | <u>Target Market Segment</u> |                 |                       |                    |
|-------------------------------|------------------------------|-----------------|-----------------------|--------------------|
|                               | <u>Global 2000</u>           | <u>SMB</u>      | <u>SOHO</u>           |                    |
|                               | <u>Large Corporations</u>    | <u>Mid-Size</u> | <u>Small Business</u> | <u>Home Office</u> |
| Ariba                         | █                            | █               | █                     | █                  |
| CommerceOne                   | █                            | █               | █                     | █                  |
| Clarus                        | █                            | █               | █                     | █                  |
| Concur Technologies           | █                            | █               | █                     | █                  |
| Intelysis                     | █                            | █               | █                     | █                  |
| ProcureNet                    | █                            | █               | █                     | █                  |
| PurchasePro                   | █                            | █               | █                     | █                  |
| OutPurchase.com               | █                            | █               | █                     | █                  |
| Works.com                     | █                            | █               | █                     | █                  |
| Onvia                         | █                            | █               | █                     | █                  |
| Office.com                    | █                            | █               | █                     | █                  |
| BizBuyer                      | █                            | █               | █                     | █                  |
| BuyerZone                     | █                            | █               | █                     | █                  |
| eALITY                        | █                            | █               | █                     | █                  |
| EqualFooting                  | █                            | █               | █                     | █                  |
| Essential                     | █                            | █               | █                     | █                  |
| AllBusiness                   | █                            | █               | █                     | █                  |
| AtYourOffice.com              | █                            | █               | █                     | █                  |
| <b><u>Traditional ERP</u></b> |                              |                 |                       |                    |
| Oracle                        | █                            | █               | █                     | █                  |
| SAP                           | █                            | █               | █                     | █                  |
| Siebel                        | █                            | █               | █                     | █                  |
| Baan                          | █                            | █               | █                     | █                  |
| PeopleSoft                    | █                            | █               | █                     | █                  |
| JD Edwards                    | █                            | █               | █                     | █                  |

Source: TWP B2B Internet Research

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## **Overview of Traditional ERP Initiatives in the Procurement Space**

We believe traditional ERP vendors will try to leverage their installed software base in the broad horizontal marketplace category. We anticipate vendors of legacy ERP software might become a competitive threat for those companies seeking to automate the inter-enterprise procurement of operating resources. The anticipated competitive pressure from traditional software providers exacerbates the urgency for procurement systems providers to capitalize on a transaction-based revenue model. By focusing on providing a marketplace through powerful supplier relationships, procurement systems providers can distinguish themselves from traditional players.

The following detailed overview highlights relevant B2B e\*commerce initiatives of traditional software and ERP companies.

### **Companies**

- Oracle
- SAP
- Siebel
- Baan
- PeopleSoft
- J.D. Edwards

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**“The Internet is rapidly moving all business transactions to online marketplaces or exchanges.”**

*Mark Jarvis*

*Oracle's Senior Vice President for Worldwide Marketing*

## Oracle

Oracle has been one of the quickest traditional players to enter the market with its advanced XML and data exchange initiatives. Furthermore, we view its initiative with Ford Motor Company as a competitive advance toward Commerce One's initiative with GM.

### Internet & Procurement Initiatives

- *Oracle Integration Server.* In order to conduct business on the web, companies are struggling to manage old and disparate data sets. Through the XML (Extensible Markup Language) standard, Oracle's new product will attempt to link company data sets despite differing attributes and formats.
- *Exchange Software.* Business procurement-competes directly with Commerce One's *BuySite* and Ariba's *ORMS*.
- *Business On-Line.* Applications rental business.
- *AutoXchange.* The joint venture between Ford Motor Company and Oracle. The initiative aims to create a network over which Ford's \$80 billion in annual purchases from 30,000 suppliers will flow. Oracle is taking an obvious step out of its traditional business into pure e-commerce; however, Oracle's role will consist only of hosting, set-up, support and integration. We believe Ford will most likely dictate supplier terms, business rules and pricing structure for the network.
- *Technology Partners.* Dell, Sapient, IBM, Novell, Siemens and EMC.

### Newsworthy Events

- **November 15, 1999** - Oracle(R) Integration Server Provides Infrastructure To Link Customers, Employees and Trading Partners Through New E-Business Processes  
Oracle is expanding its work with XML, which signals to us their commitment to entering the B2B space.
- **November 15, 1999** - E-Business Integration Software Will Accelerate Adoption of Online Exchanges. Oracle(R) Integration Server will provide XML-enabled infrastructure for enterprises and e-business exchanges. The software will incorporate business process integration on all levels—including user interfaces, applications and back-end data—to easily transfer data internally and business-to-business.
- **November 17, 1999** - CMP and Oracle Select Four Companies From the Top 50 Participants as Leading E-Business Solution Developers on Oracle. The four companies chosen (Requisite, Mercury Interactive Corp., Netfish Technologies and Vignette) have strong focuses on B2B Internet Commerce enabling technology.

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**Note:** By forming early relationships with new B2B enabling technology providers, we believe Oracle will gain insight into emerging B2B technologies before its competitors. In our opinion, this puts Oracle in a position to sample the companies and have an early chance at strategic partnerships and acquisitions.

**Major Customers Choosing Oracle**

Advanced Manufacturing Online; Chicago Mercantile Exchange (CME).

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**“We believe that we can easily achieve significant cost and cycle-time reduction whenever we are able to build a network with the customer, the suppliers, and ourselves in a real-time collaborative environment.”**

*Bob Proffitt*

*Manager of Sourcing and Business Development, Lockheed Martin Missiles and Fire Control, USA, SAP Procurement Customer*

## SAP

With the creation of *mySAP.com* and the development of critical supplier relationships with Grainger, Dell and Pitney Bowes, SAP establishes itself as a potential threat and a viable competitor.

### Internet & Procurement Initiatives

- *mySAP.com* — This solution is designed to address the growing market for Internet-based e\*business solutions. SAP has created a marketplace for MRO procurement through its *mySAP.com* solution. Users require only a browser to participate and can choose from multiple formats such as cXML, XML and flat text file.
- *SAP B2B Procurement* — Using a standard Web browser, SAP clients can create RFP on a customized purchasing screen and track the order confirmation and delivery.
- *MRO Procurement* — SAP B2B provides an interoperable solution that links to competitors' software. The SAP B2B front end serves as a requisition and materials search kiosk. SAP currently has a partnership with Grainger, the leading supplier of mission critical MRO supplies (560,000 products).
- *Vertical Procurement- Profile of the Oil & Gas Marketplace* — SAP's web site profiles a global oil and gas electronic marketplace in which business-to-business (SAP B2B) procurement facilitates the buying and selling of drilling equipment. It shows SAP B2B's online requisitioning, purchase order, sales order, goods issued and desktop receiving capabilities.
- *Strategic Partners* — Grainger.com, FedEx, Vertex, Industry-to-Industry, Pitney Bowes, Microsoft and Dell.

### Newsworthy Events

- **November 3, 1999** - SAP and IBM Deliver Accelerated Chemicals Solution This initiative not only creates an easy-to-implement ERP solution for small-to mid-size companies in the chemicals industry, but it also includes e\*procurement functionality through *mySAP.com*. By including procurement capabilities within an ERP solution customized for the chemicals industry, SAP could be a major concern for pure play B2B e\*commerce companies such as Chemdex and SciQuest.

### Major SAP Procurement Customers

There are several major customers using SAP for their B2B Procurement needs:

British Biotech, Great Britain; Enron Corporation, USA; GoodHome.com, USA; Lockheed Martin Missiles and Fire Control, USA; MLP AG, Germany; Robert Bosch GmbH, Germany.

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**“This partnership links the market leaders in electronic purchasing with the market leaders in sales, marketing and customer services to create an end-to-end buying and selling infrastructure that is completely integrated through the Internet.”**

*Thomas M. Siebel  
regarding partnership with Ariba*

## **Siebel**

Through its partnership with Ariba, Siebel is able to expand its product offering to meet client demand for B2B e\*commerce marketplace and procurement functionality.

### **Internet & Procurement Initiatives**

- *Aggressive Partnership with Ariba* - Effective 1Q00 both companies will offer Siebel Front Office Applications and Ariba e\*Commerce to one another's customers.
- *Siebel eBusiness Applications* - The product line includes Siebel eSales, Siebel eMarketing, Siebel eService and Siebel eChannel.
- *Strategic Alliances* - Ariba, Dun & Brandstreet, IBM and computer Sciences Corporation

### **Newsworthy Events**

- **July 27, 1999** - Siebel Systems and Dun & Brandstreet Deliver Front Office Applications with Integrated Business Intelligence.
- **November 8, 1999** - Ariba and Siebel Systems Form Alliance to Deliver End-to-End e\*Commerce Solutions over the Internet. The combination of the Siebel Front Office package and the Ariba platform will provide customers with access to Ariba's supplier catalog with purchasing systems support.

### **Major Customers Choosing Siebel**

Dell; MCI; Motorola; Siemens.

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## **Baan**

Currently, Baan has not introduced a branded B2B e\*commerce product nor has it announced any strategic partnerships. The *OpenWorld* solution, however, exhibits movement toward inter-enterprise automation and shared information, which we believe could be leveraged into a B2B initiative.

### **Internet & Procurement Initiatives**

- *OpenWorld* - Through this multi-level solution (data level, application level, business process level and business community level), Baan is seeking to provide a framework to facilitate the open collaboration of multiple trading partners over the Web.

### **Major Customers Choosing Baan**

Royal Brinkman; British Steel Distribution International; Volkswagen.

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**“Commerce One and PeopleSoft share the vision of global trading communities based on strategic relationships between employees, customers and suppliers.”**

*Mark Hoffman  
CEO, Commerce One*

## **PeopleSoft**

PeopleSoft has been at the forefront of the B2B procurement marketplace with its agreement with Commerce One. With strong strategic partners and the early implementation of its agreement with Commerce One, PeopleSoft has made significant headway with its B2B e\*commerce initiatives.

### **Internet & Procurement Initiatives**

- *Eprocurement* - A solution developed to address the need to improve the efficiency of MRO requisitioning. By partnering with CommerceOne, PeopleSoft was able to respond more quickly to client demand versus if it were to develop a web-based purchasing solution in-house. While PeopleSoft benefits from offering clients a complete solution, CommerceOne receives a powerful distribution channel. This initiative provides desk-top purchasing and inter-company e\*purchasing functionality using the Internet
- *PSBN (PeopleSoft Business Network)* - Through a portal, PeopleSoft seeks to link internal and external enterprise activity and information. While leveraging PeopleSoft's traditional core business offering of internal process automation (financial, human resources and supply-chain management), the company will offer solutions such as procurement, travel and entertainment management and collaborative data.
- *Strategic Partners* - CommerceOne, Dell Computer, IBM Corporation, Microsoft Corporation Cisco Systems, Inc

### **Newsworthy Events**

- **June 7, 1999** - PeopleSoft, Inc. and CommerceOne announce a strategic alliance to create a global infrastructure for business-to-business buying and selling over the Internet, enabling organizations to streamline their vendor relationships and significantly lower costs throughout the enterprise.
- **March 4, 1999** - PeopleSoft and Microsoft Team to Deliver Internet Business Solutions. With this initiative PeopleSoft actively pursues the development of collaborative data and inter-company knowledge transfer using Microsoft's BizTalk framework. This XML based product provides a standard for sharing information in a B2B Internet commerce environment.

### **Major Customers Choosing PeopleSoft**

Pepsi-Cola; Bell Atlantic; 3Com Corporation; Airborne Freight Corporation; British Petroleum Co. PLC.

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**“Our customers will now enjoy a complete, integrated supply chain and enterprise software solution, specifically designed to address the Internet-based business-to-business commerce market.”**

*Doug Massingill  
CEO, J.D. Edwards*

## **J.D. Edwards**

Through its agreement with Ariba and its acquisition of Numetrix, JD Edwards is taking a leading position in providing B2B procurement solutions for the mid-sized market.

### **Internet & Procurement Initiatives**

- *OneWorld-Numetrix* - This solution is designed to facilitate inter-enterprise communication with trading community members in real-time. We view this as an attempt to extend the product offering toward commerce versus traditional internal process automation solutions.
- *J.D. Edwards' E-Procurement Initiative* - Through an agreement with Ariba, Inc., J.D. Edwards hopes to provide business-to-business e-procurement functionality to its WorldSoftware users. The procurement automation functionality will be provided by an "integrated version of the Ariba ORMS application." The Ariba ORMS solution will be available to more than 5,000 J.D. Edwards customers; providing Ariba with a distribution channel to mid-market companies.
- *Strategic Partners* - Siebel, FileNET, Open Text, Microsoft and Systems Alternatives Inc. (SAI).

### **Newsworthy Events**

- **June 17, 1999** - J.D. Edwards Completes Acquisition of Numetrix Limited.
- **August 31, 1999** - Leading Online Marketplace for Plastics Industry Selects J.D. Edwards For E-Business Solution. Vertical B2B Marketplaces are using J.D. Edwards as an enabling platform.
- J.D. Edwards acquisition of Numetrix is an example of a traditional software vendor, acquiring new technology to serve as a platform into B2B Internet commerce.

### **Major Customers Choosing J.D. Edwards**

McKesson HBOC Medical Group; Chiquita; Houghton International; Dean Foods ; Herlitz AG.

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**Horizontal products and services can broadly be defined as low cost, high volume supplies.**

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## **HORIZONTAL PRODUCT AND SERVICE MARKETPLACES**

Horizontal products and services are necessary to support a company's business; however they do not go directly into the core product. These products are often referred to as "operating resources" (such as office supplies, IT products and janitorial supplies).

We refer to these products and services as "horizontal" because the end user can be from any market category. For example, every business needs office supplies, accordingly office supplies is a horizontal product category.

Horizontal products and services can broadly be defined as low cost, high volume supplies. Additionally, horizontal products fall into two categories: completely horizontal or vertical specific. Horizontal MRO consists of products such as office products, furniture, IT requirements, Travel and Entertainment (T&E) and business services. Vertically-oriented MRO supplies consist of shop floor supplies that can be unique to a vertical, such as drill bits at Chevron. The following pages provide more detailed descriptions of companies that we think provide good examples of players in the horizontal products and service marketplace category.

### **Companies**

- Opus360.com
- Sabre
- National Transportation Exchange (NTE)
- Eliance
- Aداuction
- Headhunter.net
- Intraware, Inc.
- Arbinet
- Datastream Systems
- works.com
- Noosh
- RoweCom, Inc.
- Branders.com

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## **Opus360.com** (IT Service)

Opus360.com is a Horizontal Services Marketplace that provides an Internet centric solution for the management of human capital or Enterprise Workforce Management. Its web-based services enable organizations to manage their internal resources, their vendors' resources, as well as the largest virtual workforce and most diverse group of independent consultants and freelancers through FreeAgent.com. The company's solutions also enable service organizations and free agent businesses to increase profitability and revenues, increase utilization rates and retention of employees, streamline project schedules, predict resource shortages and surpluses, identify bottle necks in delivery and increase customer and employee satisfaction. The company considers as potential customers professional service firms and service departments within large Fortune 1000 corporations.

### **Key Company Events**

- **March 23, 1999** - Opus360 Corporation, was formally announced today to provide a comprehensive suite of enterprise application solutions for service organizations.
- **March 23, 1999** - Horowitz Named Chairman and CEO of Opus360 Corporation.
- **May 10, 1999** - FreeAgent.com to Be Launched on Independence Day The First Internet Service Dedicated to FreeAgents.
- **June 24, 1999** - Opus360 Launches FreeAgent.com
- **September 28, 1999** - Opus360 Corporation Raises \$40 Million from Safeguard Scientifics.
- **December 10, 1999** - Opus360 Corporation Appoints Lucent Technologies Executive John L. Drew to Board of Directors.

### **Management Overview**

**Ari Horowitz Chairman and CEO.** Mr. Horowitz, co-founder, has served as the Company's Chairman of the Board since inception, and has served as the Chief Executive Officer since March 1999. From June 1998 to March 1999, he served as a Senior Managing Partner of USWeb/CKS Corporation (USWB: Nasdaq).

**Carlos Cashman, Chief Technology Officer and Director.** Mr. Cashman is also a co-founder. From June 1997 to June 1998, Mr. Cashman served as CIO of Gray Peak Technologies, Inc., which was acquired by USWeb/CKS.

**Shawn D. Kreloff, Executive Vice President, Business Development.** Mr. Kreloff has served as Executive Vice President, Business Development since March 1999. From June 1998 to March 1999, Mr. Kreloff served as a Senior Managing Partner of USWeb/CKS. From March 1997 to June 1998, he served as Chairman and Chief Executive Officer of Gray Peak Technologies.

**Sources of Funding and Investors.** Opus360 Corporation was funded with more than \$11 million in venture financing led by Wheatley Partners (a GeoCapital partnership), CrossPoint Ventures and Pennsylvania Early Stage Partners (a Safeguard Company).

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## **Sabre** (Travel Service)

Sabre ([www.Sabre.com](http://www.Sabre.com)) is a Horizontal Services Marketplace for the corporate travel industry. Sabre Inc., provides an e\*commerce solution for the travel services industry. Sabre is a pioneer in information technology services for airlines. Virtually every major airline in the world relies on at least one product or service from Sabre to conduct daily operations. The company specializes in total IT outsourcing and consulting and offers a variety of unique solutions to companies in the travel and transportation industries. Sabre is headquartered in Dallas, Texas and employs over 10,000 employees worldwide. The Sabre computer reservations system is the engine behind the company's electronic travel distribution business. With this system, Sabre electronically links travel agencies, corporations and consumers to travel suppliers worldwide. The Sabre system has an average response time of under 3 seconds and links more than 210,000 terminals at travel agencies, airports and other businesses. The Sabre computer system sends an average of 270 million messages per day to a data center in Tulsa, Oklahoma and at its peak processes more than 7,450 messages per second. Sabre has a 30-year history in the travel and transportation technology industry. Sabre grew out of the airline industry, providing data processing and applications development for airlines. Through technology, Sabre is redefining the way business is done in travel agencies, on the Internet, within corporate travel departments and in major travel and transportation companies around the world. Sabre has formed partnerships and alliances with airlines and other important industry players such as Priceline.com. The company's major competitors include Microsoft's Expedia on the B2C side.

### **Key Company Events**

Introduced in the early 1960's, the Sabre system is one of the world's first electronic airline reservations systems.

- **1976** – Sabre installed its CRS terminals in travel agencies.
- **1996** – Travelocity.com was launched.
- **1996** – October, initial public offering of approximately 18% of the company's shares.
- **1998** – December, largest systems migration ever in the airline industry occurred when 200 US Airways systems were shut down and their functions shifted to Sabre systems and applications.
- **1999** – April, Best Fare Finder is introduced.
- **December 14, 1999** - William J. Hannigan Named Chief Executive Officer and President of Sabre.

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### Management Overview

**William J. Hannigan, CEO and President.** Formerly President of SBC Global Markets, Mr. Hannigan is a 20-year technology services veteran.

**Terrell B. Jones, President Travelocity.com CIO.** Previously, Mr. Jones was President of Sabre interactive and president of Sabre ComputerServices since July 1996. Prior to that, he served as President of Sabre Computer Services for American Airlines from 1993 to 1996.

**Jeffery M. Jackson Executive Vice President, CFO and Treasurer.** Mr. Jackson was formerly Vice President and Controller of American Airlines where he oversaw financial budgeting and planning, corporate accounting (including all SEC filings), revenue accounting, corporate receivables, corporate payrolls and disbursements, and accounting functions for American Airlines.

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## **National Transportation Exchange (NTE) (Logistics)**

National Transportation Exchange (NTE), ([www.nte.net](http://www.nte.net)) is a Horizontal Services Marketplace for the shipping and transportation industry. There is approximately \$31bn in annual unused trucking capacity in the U.S.

NTE provides a real-time, neutral platform for member shippers that tender loads, as well as the direct service carrier members that tender the available space capacity of their moving trucks. It allows Members to interactively match desirable rates for shipments by quoting a confirmed price for approval before it is committed by the shipper, or accepted by the carrier, in the electronic marketplace. When the delivery of the shipment is confirmed, NTE pays the carrier and invoices the shipper.

NTE also provides a full range of services, including qualifying exchange participation and transaction settlement. It is also integrating its exchange with third party transportation management software. The company currently has over 350 "participants." NTE has formed strategic alliances or partnerships with SAP, Manugistics, ResourceLink, TruckWeb USA, National Private Truck Council (NPTC), Creative System Corp, TMW Systems, and Tom McLeod Software. Currently the company has no direct competition providing execution or marketplace exchange services for the spot market. IATN and DAT services are its closest competitors.

### **Key Company Events**

- **September 14, 1999** – NTE e-commerce exchange to provide transportation backbone for mySAP.com.

### **Management Overview**

**Greg Rocque, President and Founder.** Mr. Rocque developed the company in 1993 and NTE was launched in 1995. He has fourteen years experience at The Havi Corp (\$1.5bn exclusive supplier to McDonalds). He is also a managing partner in an automotive maintenance organization.

**Joseph F. Norton, CTO.** Mr. Norton formerly served as McDonald's CTO and was at J.P. Morgan where he was responsible for international development and management.

**Alvin H. Mellot, Director, Finance and Administration.** Prior to NTE, Mr. Mellot spent eleven years at ShipNet systems providing logistics to the transportation industry.

**Sources of Funding and Investors:** NTE's first round of financing came from AT&T Ventures in 1997. The second round was received in the fall of 1998. Investors included Hummer Winblad, Crosspoint, Bessemer, Technologies and Kappa Ventures.

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## **Eliance (e\*Financial Services)**

Eliance (www.eliancecorp.com) is a Horizontal Services Marketplace for the e\*financial services industry. Eliance Corporation supplies outsourced electronic commerce solutions to Web businesses. Eliance provides a complete back-office e\*commerce solution, which consists of over 30 integrated business services including extensive customer service and support, and state-of-the-art fraud prevention. With a phone call, customers discover all the necessary components to successfully compete online. This next generation solution is known as "e\*Sourcing."

The company currently serves over 10,000 Web businesses and has almost 400 employees. Eliance has formed strategic alliances or partnerships with Nettare, 4Dmatrix, Web Unique, Wired Enterprise, TelePacific Communications, FastFocus Systems, TalentSoft, SplitInfinity, Commercial Networks and Communication Venture Services, Inc.

### **Key Company Events**

- **1994** – Company founded in Minot, North Dakota.
- **1996** – June, processed first transaction.
- **1998** – Expanded business by opening offices in Minneapolis, MN and Qingdao, China.
- **1998** – Revenues were approximately \$23 million.
- **1999** – First Quarter, successfully completed over 40 million transactions.
- **April 1999** – Eliance accepted \$16 million in equity financing, its first investment from an outside firm, from InSight Capital Partners.

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## **Adauction** (e\*Advertising)

Adauction (www.Adauction.com) is a Horizontal Services Marketplace for the traditional advertising industry.

Adauction.com is an online exchange providing media buyers and sellers the opportunity to interact in a market setting for the most efficient media transactions possible. The exchange offers a single source for all types of media: Online, Broadcast, Print and Out-of-Home. Adauction provides premium ad space from top publishers and properties in the country's key markets. It also provides a qualifying service for buyers to ensure the validity of suppliers and their respective properties.

Traditionally, an ad buyer employs an advertising agency to seek out the appropriate representative of the independent owner of any particular medium. Adauction's model can disintermediate the representative by establishing an online relationship with media suppliers. More than 4,000 media buyers are registered to purchase inventory through Adauction. Leading ad agencies include Modem Media-Poppe Tyson, USWeb/CKS, Goodby Silverstein & Partners, Foote, Cone & Belding, iXL, Lot21 and Western International Media. Direct advertisers include Dell Computer Corporation, U.S. West Dex and Bell south. Adauction has formed strategic alliances or partnerships with U.S. West Dex and Netcentives

### **Key Company Events**

- **September 13, 1999** – ICM's Jeffrey Berg joins Adauction's Board of Directors.
- **October 4, 1999** – Adauction introduces new solution to regional advertising. Adauction's GeoNet simplifies regional targeting on the net.

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### **Management Overview**

**Chris Redlitz, Co-Founder, President and Chief Executive Officer.** Mr. Redlitz participated in Reebok's intense growth period when sales leapt from \$15 million to \$2.5 billion worldwide. He was part of the core team that launched On Village Communications. He also launched the online division for direct mail leader Money Mailer, H.O.T! Coupons, and owned Second Sole Inc., a successful athletic footwear and apparel operation in Southern California.

**Shawn O'Neill, Chief Financial Officer.** Mr. O'Neill was an investment banker in the Global Technology Group at Morgan Stanley Dean Witter. His investment banking background also includes positions at DMG Technology Group (now CSFB Technology Group) and Lehman Brothers. Mr. O'Neill was formerly a CPA at KPMG Peat Marwick.

**Other members of the executive team include:**

**Diane Chamberlain, Vice President, Marketing.**

**Nicole Goldstein, Vice President, Product Development.**

**Steve Pechman, Vice President, General Manager, Broadcast Media.**

**Chad Roffers, Vice President, General Manager, Online Media.**

**Matt Rogers, Vice President, General Manager, Out-of-Home Media.**

**Sources of Funding and Investors:** Aduaction recently closed a mezzanine round of \$15 million with investments from Lehman Brothers, Amerindo Investment Advisors, Inc. and Fayez Sarofim & Co. Previous investors include convergence Partners, Geneva Partners, Viventures and New Millennium Partners.

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## **Headhunter.net (e\*Cruting)**

Headhunter.net (www.headhunter.net) is a Horizontal Services Marketplace for the corporate recruiting industry. Headhunter.net is one of the largest sources of information on the Internet for job seekers, employers and recruiters. On the average, 120,000+ users visit Headhunter.net every business day. The site now has over 140,000 current job listings, with salary values ranging from entry level to over \$500,000, and over 247,000 resumes.

Because it offers a \$20 basic posting, Headhunter.net is a popular job site among companies of all sizes that place value on what they spend to attract high-quality candidates. Many global companies use Headhunter.net as an integral component of their strategic recruiting program. Jobs on Headhunter.net are all directly posted by registered users. Jobs and resumes are drawn from all areas of the United States and from many foreign countries. Approximately 95% of jobs are based in the U.S., although some positions are for prospective employees who will be working abroad. The top five industries represented are Information Technology, Engineering, Accounting, Sales and Marketing. The most common salary ranges among Headhunter.net jobs are from \$51,000 to \$75,000 and from \$76,000 to \$100,000. Headhunter.net has a powerful geographical search capability, based on a proprietary database of latitudinal and longitudinal data for 250,000 cities and towns anywhere in the world. Headhunter.net also enables recruiters and job candidates to search by any key word, such as "marketing research" or "JAVA programmer," as well as by occupation, travel requirements, and other criteria. Headhunter.net allows recruiters to write and post detailed job listings directly online and then instantly modify them to correct job criteria, such as "salary." Headhunter.net has formed strategic alliances or partnerships with The Computer Psychologist and Warner Bros. Online. Headhunter.net's major competitors include Careerbuilder, CareerMosaic, CareerPath.com, CollegeHire.com, E-Cruiter.com, Hire.com, and HotJobs.com.

### **Key Company Events**

- **June 29, 1999-** Headhunter.net introduces Easepost.
- **July 9, 1999-**Headhunter.net announces transition to fee-based service for job postings.
- **July 9, 1999-** Headhunter.net names Mark Partin Chief Financial Officer.
- **October 20, 1999-** Headhunter.net adds 5,000<sup>th</sup> customer.
- **1999 -** Headhunter.net ranked number one employment site; report finds company well positioned for growth in booming industry.

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### **Management Overview**

**Robert Montgomery, President and Chief Executive Officer.** Prior to Headhunter.net Mr. Montgomery served as founder and Chief Executive Officer of InterCall, the largest privately held audio conference company in the U.S., Mr. Montgomery was responsible for overseeing worldwide operations. Under his management, InterCall grew from a start-up to a \$70 million company with more than 500 employees.

**Mark Partin, Chief Financial Officer.** Mr. Partin was most recently VP of finance at Sunchoice Medical Supply, Inc., where he was responsible for all aspects of finance and accounting, including the operation of a multi-million dollar operating division. Before joining Sunchoice, Mr. Partin was controller for Williams Group International where he worked extensively in mergers and acquisitions. While at Williams, he was appointed interim CFO of a \$40 million international operating division acquired by Williams.

**Eric Presley, Vice President of Technology.** Mr. Presley joined Headhunter.net in late 1997 as manager of technology with responsibility for overseeing site development. From 1993 to 1997, he held several positions at Advance Technology Corporation, a technology solutions provider, including senior consultant and system architect.

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## **Intraware, Inc. (IT Products)**

Intraware, Inc. ([www.intraware.com](http://www.intraware.com)) provides a Horizontal Products Marketplace for the IT products and software industry. This global software market is expected to grow from \$140 billion in 1999 to \$209 billion by 2002 (IDC). The worldwide electronic support and software update management services markets are expected to grow from \$3.0 billion in 1990 to \$10 billion in 2002 (IDC). Intraware, Inc., was founded August 1996 to address the need of IT professionals for Internet software services. The company attempts to meet the needs of its target market through various service offerings: Intraware IT Knowledge Center, *Intraware.shop*, and Intraware SubscribNet. The company's strategic objective is to be the leading online intermediary resource for business software purchasers and vendors. *Intraware IT Knowledge* was released in September 1998. IT Knowledge is a website that gathers relevant software information directed toward IT professionals. Compariscope was developed in April 1998 as a subscription service providing comparative analysis of over 20 categories of business software. This division also contains other services such as Premier Content, "Ask James," SubscribNews, and Radarscope. *Intraware.shop* was rolled out in February 1997. This division generates revenue through the sale of third-party software using electronic software delivery (ESD). The company offers more than 1,000 products from 25 software vendors through its product catalog. Intraware announced strategic relationships with three e\*business consulting partners: Magnet Interactive, Nevidec, Inc. and Xuma. Intraware recently announced a collaboration with e\*business consulting partners Appnet, Inventa and Lante.

### **Key Company Events**

- **February 26, 1999** - Intraware Announces Initial Public Offering.
- **July 13, 1999** - Intraware Broadens E-Services Offering with Launch of Intraware Solution Provider Network.
- **October 26, 1999** - Intraware is chosen by Computer Associates as an online sales and electronic software distribution channel partner.
- **November 10, 1999** - Intraware Nearly Doubles Customer Count in Less Than Two Months.

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### **Management Overview**

**Peter Jackson, President and CEO.** Prior to Intraware, Jackson served as president and COO of Dataflex Corporation and spearheaded the company's growth from a \$100 million regional systems integrator to a \$450 million national, full-service network integrator.

**Don Freed, Executive Vice President and CFO.** Prior to joining Intraware, Freed was with Dataflex Corporation serving as the senior vice president of business development.

**Paul Martinelli, Senior Vice President and Chief Technology Officer.** Mr. Martinelli was previously the vice president of information systems for Dataflex Corporation.

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## **Arbinet** (Telecommunications)

Arbinet provides a Horizontal Product Marketplace for the telecommunications industry. Arbinet was founded in 1994 and has established itself as the leader in trading telecom capacity. The system runs from a web-based community called the Arbinet Global Clearing Network (AGCN). The system brings buyers and sellers together to trade telecommunications capacity (bandwidth and/or minutes) in a secured trading environment. The AGCN is a real-time authentication system that includes risk authorization cost routing, call placement and settlement on a transaction-by-transaction basis. This arrangement allows carriers to easily and simultaneously deal with a host of suppliers without having to carry out separate negotiations.

Members post their sales information and the system automatically matches buyers and sellers based on available routes on an individual basis. The AGCN clears and settles transactions for a number of communication companies. The AGCN has been described as the NASDAQ of telecommunications. The system uses the latest e\*commerce and web-based auctioning service, creating an exchange that allows carriers to optimize their existing network and investment in infrastructure. The average usage of a major carrier's international voice network is around 30%. The AGCN provides an alternative solution for increased yield management for telecommunication carriers.

### **Key Company Events**

- **April 27, 1999** - Communications Ventures, Internet Capital Group and Bedrock Capital Acquire Interest in Leading Telecommunications Capacity Trading Firm with a \$12 million dollar investment.
- **October 13, 1999** - Arbinet Communications, Inc., the world's premier exchange for trading telecommunications capacity, announced upgrades to its core trading systems to allow its Members to execute trades within 24 hours, with a further upgrade planned by the first quarter of next year that will enable Members to execute trades within 15 minutes.
- **December 2, 1999** - B2B e\*commerce telecommunications exchange receives second-round financing from marquis leading institutional investors including J.P. Morgan Capital, Chase Capital & BancBoston Ventures.

### **Management Overview**

**Alex Mashinsky, Chairman and Founder.** Mr. Mashinsky previously created a business selling voice processing applications, providing switching solutions for major international carriers worldwide.

**Rachelle Rees McCarthy, Chief Operating Officer.**

**Bob Barbieri, VP, Business and Market Development.**

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## **Datastream Systems** (Maintenance / Repair)

Datastream Systems ([www.dstm.com](http://www.dstm.com)) is a Horizontal Product Marketplace for the asset management industry. The company develops Computerized Maintenance Management Systems (CMMS) and Enterprise Asset Management (EAMS) systems for businesses that want to improve maintenance efficiency. Datastream provides all software, installation, training and consulting to assist customers with controlling spare parts inventories, scheduling tasks that reduce equipment downtime and expediting the purchasing process. Through automated maintenance management systems, companies can reduce costs up to 30 percent contributing significantly to their bottom line. Founded in 1986, Datastream's commitment to innovative and affordable software for maintenance professionals has resulted in sales of over 50,000 system units worldwide. In 1997, Datastream accounted for more than 55 percent of the unit market share of CMMS/EAM. Datastream provides systems for virtually any size operation, from the single, small shop with basic requirements to the large, multi-site client needing a full-featured enterprise solution. Customers represent manufacturing industries such as aerospace/defense, automotive, commercial machinery, oil and gas, paper and pulp, food processing, chemicals and electronics, as well as non-manufacturing industries such as health care, property management, transportation, telecommunications and hospitality. Datastream services customers in 129 countries including over 60% of the Fortune 500.

Datastream's electronic commerce initiative extends the purchasing functionality of its maintenance software to incorporate the power of the Internet - saving users time, money and headaches. This initiative is iProcure, electronic Maintenance, Repair and Operations. iProcure uses the Internet to facilitate unprecedented communication opportunities between buyers and sellers, by providing direct access 24 hours a day to the parts catalogs of the nation's leading MRO suppliers. iProcure automates MRO purchasing and eliminates paperwork, speeding up the procurement process and saving money on transactions. iProcure ties together inventory, purchasing, and equipment maintenance. iProcure will access catalog content through its recently announced agreements with Applied Industrial Technologies, Fastenal Company, and WESCO Distribution. Datastream competes directly with PSDI and its MRO.com subsidiary.

### **Key Company Events**

- **February 24, 1999-** Electronic commerce initiative completes the purchasing cycle with on-line MRO procurement.
- **June 21, 1999-** XML technology used in Datastream's e-MRO supports BizTalk Framework.
- **July 28, 1999-** Datastream Launches Enhanced Version Of Its Business-To-Business Auction Website, Site adds features, services and a new name - BizSurplus.com.
- **November 22, 1999-** Company Identified as a Leading Solution Developer on Oracle Technology Products.

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**Management Overview**

**Larry G. Blackwell Ph.D, President and CEO.**

**C. Alex Estevez, CFO.**

**John M. Sterling III, Vice President.**

**John Fury Christ, Vice President.**

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## **works.com** (Office Products)

Works.com ([www.works.com](http://www.works.com)) is a Horizontal Product Marketplace providing office products procurement solutions for the SMB (small medium sized businesses). Launched in May 1999, works.com is a business Internet service that provides supply chain management solutions to its online clients. The Company includes in its product offering, purchase requests, approval, ordering, tracking and reporting. Also, the site allows the user to purchase 20,000 office items at wholesale prices. Works.com's mission is to enable businesses to move horizontal product purchases online to improve efficiencies and exhibit cost savings. According to The Aberdeen Group, the average company spends \$107 to manually process a \$27 order of office products, and takes one to two weeks to process that order. Works.com customers are dramatically reducing processing time and expense by managing their purchasing online. Works.com charges are at \$1.50 per order. Works.com can be implemented in minutes rather than months, with no expensive software to buy, install or maintain. Best of all, with works.com's wholesale direct prices, customers can save an average of 15% on monthly purchases. Based in Austin, Texas, works.com was founded in September 1997 by technology startup veterans Bo Holland, President and Chief Executive Officer, and Roy Kipp, Chief Technology Officer. The founders bring proven track records from successful, high-growth companies Citrix Systems and Pervasive Software, as well as noted industry leaders Texas Instruments and PeerLogic. The company has partnerships and alliances with Merrill Lynch, Centerbeam, Great Plains, CPA Online, Hoovers, Peachtree and Plum Software. Works.com competes directly with Office Depot, Staples, AtYourOffice.com, onlineofficesupplies.com and OnVia.

### **Key Company Events**

- **August 31, 1999** – Hoover's Online and works.com Sign Agreement to Bring Business Purchasing Service to Hoover's.
- **September 13, 1999** – Great Plains and works.com Partner to Deliver Online Business Purchasing.
- **September 21, 1999** – Works.com and Peachtree Software Partner to Deliver Online Business Purchasing.
- **October 11, 1999** – Works.com Named One of the Top 25 One-to-One Marketing Web Sites by Peppers and Rogers Group.
- **October 25, 1999** – Works.com Expands Business Purchasing Service to Offer Enhanced Buying Capabilities, Improved Efficiency and Increased Cost Savings.

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### **Management Overview**

**Bo Holland, Co-founder and Chief Executive Officer.** Prior to founding works.com, Mr. Holland held senior positions at high-growth technology companies Citrix Systems and Pervasive Software, where he was instrumental in defining and managing the companies' strategic marketing initiatives.

**Roy Kipp, Co-founder and Chief Technology Officer.** Prior to founding works.com, Mr. Kipp served as senior engineering architect for leading technology companies Pervasive Software, PeerLogic and Texas Instruments.

**Martin Neath, President and Chief Operating Officer.** Prior to joining works.com, Mr. Neath was executive vice president at Tivoli Systems Inc. for 9 years.

**Sources of Funding and Investors:** The company is privately held with venture backing from Bowman Capital, Hummer Winblad, Merrill Lynch, Presidio Venture Partners, and Trellis Partners.

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## **Noosh** (Printing Products)

Noosh ([www.noosh.com](http://www.noosh.com)) is a Horizontal Product Marketplace that provides a web-based solution for both print buyers and vendors. The advantages of the Noosh solution begin with increased efficiency in estimating, quoting and specifications management. Print jobs can be created, submitted by buyers and quoted online by printers either locally or from anywhere in the world. The print buyer decides how many printers can bid on a job, as well as controls job specifications, including revisions, which bring fluidity to the entire process. The system also provides online ordering confirmation and job status, from design through delivery. Noosh provides content file transfer, online and remote proofing and job file archiving.

### **Key Company Events**

- **August 24, 1999** - Noosh, Inc., a Leading Online Business-to-Business Service, Announces \$12 Million Investment Online Services Company Positioned for Significant Growth in Enterprise Critical Printing Industry.
- **September 1, 1999** - Noosh, Cisco Systems Join Forces to Provide Customers Performance Optimized Networking Solutions for Noosh.com.
- **October 5, 1999** - Noosh Acquires Leading Print Sales Software Company, Carpé Data.
- **October 18, 1999** - Noosh and Logic Associates Announce Joint Technology Development To Streamline Data Exchange Process within Print Industry.
- **November 8, 1999** - Noosh Closes \$50 Million in Private Placement Financing.
- **November 15, 1999** - Noosh, Inc. Joins Cisco Resource Network.

### **Management Overview**

**- Ofer Ben-Shachar, Founder, President & CEO,** - Mr. Ben-Shachar was the founder, chairman and CTO of NetDynamics, a company that in 1995 introduced the first database development tool for the Internet.

**Hagi Schwartz, Vice President of Finance and Chief Financial Officer.** Prior to joining Noosh, Mr. Schwartz spent four years as Chief Financial Officer and Vice President of Finance at Check Point Software Technologies Ltd. and was responsible for financial reporting and control for the company.

**Larry Slotnick, Vice President of Engineering.** Before joining Noosh, Mr. Slotnick was Vice President of Internet and Enterprise Products at Apple Computer, where he was responsible for charting Apple's strategic course for networking, collaboration and communications products.

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**Matt Spolin, Chief Technology Officer.** Mr. Spolin has been developing large-scale, networked enterprise systems over the last 15 years for major organizations such as Oracle, IBM and the Department of Health and Human Services.

**Sources of Funding and Investors.** MeriTech Capital Partners, Bowman Capital Management, Technology Crossover Ventures (TCV), Ricoh Silicon Valley, Accel Partners and Advanced Technology Ventures (ATV).

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## **RoweCom, Inc. (Knowledge Products)**

RoweCom, Inc. ([www.rowecom.com](http://www.rowecom.com)). RoweCom is a Horizontal Product Marketplace focused on the knowledge resources industry. RoweCom develops and operates web-based services that enable businesses to manage the acquisition of knowledge resources such as magazines, newspapers, journals and books. RoweCom's flagship services, Knowledge Store (kStore) and Knowledge Library (kLibrary), provide new levels of control, convenience, and cost-savings, allowing companies to order, pay for and manage 240,000 titles online as well as millions of discounted books via RoweCom's partnership with barnesandnoble.com. With clients ranging from Fortune 1000 companies to academic libraries, RoweCom serves organizations with intensive knowledge requirements and high-volume purchases. RoweCom's corporate headquarters are located in Westwood, Mass., with several offices in North America, Europe and Australia as well as a presence in South America, Japan and the Middle East.

RoweCom has grown rapidly since it began operations in 1994. Part of this growth can be attributed to acquisitions. In June 1999, RoweCom acquired Corporate Subscription Services, Inc. in Montvale, N.J. In August 1999 RoweCom acquired International Subscription Agencies Pty Ltd., (ISA), a subscription agency based in Brisbane, Australia. RoweCom also acquired UK-based Dawson Information Services Group from Dawson Holdings Plc. in October 1999. Most recently, RoweCom announced its intention to acquire NewsEdge Corporation.

### **Key Company Events**

- May 26, 1999 – RoweCom establishes alliances with Internet's top procurement solution providers.
- October 5, 1999 – RoweCom completes acquisition of Dawson Information Services Group.
- December 7, 1999 – RoweCom announces acquisition of News Edge Corporation.

### **Management Overview**

**Dr. Richard R. Rowe, Chairman, President, and Chief Executive Officer.** Prior to founding RoweCom, Dr. Rowe was, for fourteen years, the President and CEO of the Faxon Company, which during his tenure became the world's largest library subscription agency with annual sales of greater than \$500 million.

**Jim Krzywicki.** Mr. Krzywicki joins Rowecom from IBM, where he served as the worldwide executive for distributed learning, responsible for transforming IBM Learning Services, a leader in "classroom" learning, into a leader in technology-supported learning with emphasis on e\*business, distributed learning and learning management systems.

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**Walter Crosby, Vice President and Chief Technical Officer.** Prior to joining RoweCom, Mr. Crosby was a consultant for Bulletpoint Technology and Development Consulting with an emphasis on technology and strategy for large extranet- and electronic commerce\* focused projects.

**Stephen Vozella, Vice President of Fulfillment.** Prior to joining RoweCom, Mr. Vozella was employed as Senior Vice President, Client & Information Services for Grand Circle Corporation. Before joining Grand Circle, he was the vice President/Chief Information Officer, Fund Services at First Data Investor Services for a number of years.

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## **Branders.com** (Promotional Products)

Branders.com ([www.branders.com](http://www.branders.com)) is a Horizontal Product Marketplace for the corporate promotional products industry. The company was founded in 1999 and has developed a web-based solution allowing the client to completely design and manage the entire branded product process online. The system provides a one stop shop by bringing an easy to navigate site where the buyer can choose materials and logos without having to deal with a multitude of vendors. This solution reduces the friction involved in the branded products market. The customer is able to monitor the process through an order tracking system. The promotional products market is extremely large and at this point is somewhat fragmented. Approximately 92% of all business purchase some form of promotional products regardless of size or industry. The current value chain is highly dependant on brokers to bring the suppliers and buyers together. In 1998, over \$13 billion worth of promotional products were sold through brokers.

### **Management Overview**

**Jerry McLaughlin, CEO.** Mr. McLaughlin has served as CEO of internet-based insurance product information services company Enwisen. He also has extensive experience in marketing and sales, business development and venture capital services.

**Dave Sipes, Marketing and Business Development.** Mr. Sipes has over 9 years experience in strategic marketing and consulting with Pepsi, Price Waterhouse and Booz Allen & Hamilton.

**Sources of Funding and Investors.** Menlo Ventures, Altos Ventures, Doll Capital and Discovery Ventures.

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## **VERTICAL MARKETPLACES**

Vertical B2B marketplaces facilitate commerce or provide services to members of a specific industry or channel. Vertical marketplaces target buyers and sellers that are members of the same industry. For example, PlasticsNet provides an online marketplace targeting buyers and sellers of plastic. The content and commerce center entirely around the plastics industry, and the target market is buyers and sellers only in the plastics industry. Vertical marketplaces aim to eliminate inefficiencies characteristic of traditional vertical-specific businesses through use of the Internet.

Vertically-focused companies are entrenched in the channel. For example, Partminer is an online market maker for excess inventory in the semiconductor industry. In order to achieve adoption, the company must be highly vertically focused and develop relationships with all of the participants in that channel. Upon doing so, that company is in a strategic position to identify the problems in that channel.

Once a vertical marketplace achieves adoption, the barriers to entry are high. A vertically-focused company (such as CommerX) creates tight relationships with the participants in the specific channel (e.g., Kenrich Petrochemicals, Inc., Ashland Distribution Company and Modern Dispersions, Inc.). These companies have a competitive advantage if the management team has high-level channel representation and influential relationships.

### **Companies**

- Instill Corporation
- Partminer
- pcOrder.com, Inc.
- SciQuest.com, Inc.
- MetalSite
- PaperExchange.com

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## **Instill Corporation (Restaurants)**

Instill Corporation ([www.instill.com](http://www.instill.com)) is a Vertical Marketplace in the food services vertical. Founded in 1993, the company serves the \$350 billion domestic foodservice supply chain. Instill provides a suite of e\*Business solutions for foodservice operators, distributors and manufacturers that help lower costs and increase revenue. Instill's services for foodservice operators include Instill Purchase Web, an innovative e\*procurement service for enhanced control and management of foodservice purchasing; Instill Purchase Insight, a consolidated purchase information service for monitoring contract compliance and capturing rebates; and Instill Market Intelligence, an Internet-enabled service for manufacturers, providing market-share data across industry categories and segments.

The biggest impediment to consolidated purchasing analysis in the foodservice industry is the lack of a single, industry-wide catalog of product codes. FoodLogic is the underlying patent-pending data warehouse used by Instill's services, which acts as a "standardizer" of product and transaction information. Instill services over 6,900 foodservice operator locations, including Bon Appetit, Cinnabon, Delaware North, Fine Host, Five Star, Gordon Biersch Brewing Company, Harrah's, Marie Callenders, and Meristar. Instill's manufacturer customers include: Bestfoods, General Mills, Nestle, Perrier, Schreiber Foods and Tropicana.

Instill has strategic partnerships with Food Distributors International, Sales Partner Systems, Inc., Computrition, Eatec, Johnson Technologies, Inc., Technomic and MenuLink Computer Solutions. Competitors targeting the food services vertical include Efdex, Networkexchange, Go Co-op and sauce.com.

### **Key Company Events**

- **May 18, 1999** - Instill Announces Purchase Insight Service to Provide Business Intelligence.
- **September 17, 1999** - Instill Corporation, the leading provider of e\*Business services for the foodservice industry, today announced Instill Market Intelligence, a web-based market-data subscription service for foodservice manufacturers.
- **November 1, 1999** - Instill announces new strategic alliance program to extend the reach, benefits, and critical mass of Instill's leading e\*Business services for the foodservice industry.

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### **Management Overview**

**Mack Tilling, President, CEO and Co-founder.** Formerly, Mr. Tilling served as director of operations for the California-based brewery restaurant group, Gordon Biersch Brewing Company.

**Andy Cohen, Vice President, Marketing.** Mr. Cohen joined Instill from Intuit, where he launched Quicken.com.

**Ted Daley Executive Vice President, Business Development and Co-founder.** Mr. Daley worked in operations management with Anheuser-Busch, Inc prior to forming Instill.

**Sources of Funding and Investors.** Instill is privately held and backed by Altos Ventures, Aspen Ventures, Charles River Ventures, Chase Capital Partners, Dain Rauscher Wessels, Deutsche Banc Alex Brown, Intel Corporation, The Mayfield Fund, Ohio Partners and Piper Jaffray Ventures.

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## **Partminer** (EMS & Components)

Partminer ([www.partminer.com](http://www.partminer.com)) is a Vertical Marketplace for the electronic component industry. According to the company, over 100,000 electronic engineers and purchasing professionals worldwide use Partminer's technology. Partminer is the personal engineering and purchasing assistant for the electronics industry designed to streamline researching, sourcing and purchasing electronic components. Partminer is free, with no transaction fee. The company provides a vendor-neutral marketplace model with fast, multiple search capabilities that return inventory availabilities, pricing and datasheets of electronic components in moments. Partminer attempts to correct market inefficiencies that would otherwise keep a production line down with its Partminer Direct service. Partminer Direct leverages the resources of Partminer's in-house procurement staff to source the part from the inventories of over 8,000 manufacturers, distributors, representatives and agents from around the world.

In collaboration with IBM's Watson Research Center, Partminer is building the patent-pending Electronic Commerce Free Trade Zone scheduled to launch in 2000. The Free Trade Zone will allow buyers and suppliers to interact more efficiently and effectively giving buyers the ability to manage supplier relationships with digital contract capabilities, bill of materials and supply management tools, and have market maker capabilities to guarantee availability of any electronic part. Partminer has a strategic relationship with Information Handling Services Group (IHS Group), the world's leader in technical data for the electronics industry. This strategic alliance provides Partminer with an aggregated pool of data. Competitors in the EMS and components vertical include Questlink, Chip Center and NECX Exchange.

### **Key Company Events**

- **August 12, 1999** - IBM Helps Partminer Establish an Electronic Commerce Free Trade Zone.
- **September 27, 1999** - Cahners Purchases Equity Stake in Partminer to Provide Electronics Groups with Online Procurement Tool for EOEM Professionals.
- **November 29, 1999** - Partminer Acquires Accurate Components For Increased Infrastructure and ISO Certification.

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### **Management Overview**

**Daniel Nissanoff, President and Chief Executive Officer.** Mr. Nissanoff also founded Microcom Technologies, a real-world marketplace, in 1993 where he developed the technology that is at the core of Partminer. Prior to founding Microcom, he was an associate attorney in the corporate reorganization department of Weil, Gotshal & Manges.

**Earle Zucht, Chief Operating Officer & Executive Vice President, Business Development.** Mr. Zucht joined Partminer in April 1999. He previously served as senior vice president of semiconductor marketing at Wyle Electronics. While at Wyle he managed a \$250 million semiconductor inventory investment, 170-person engineering and design team, international sales organization centralized telesales group and was the executive sponsor of a supply-chain management software installation.

**Darold Stagner, Chief Financial Officer.** Mr. Stagner joined Partminer in April 1999. He is a certified public accountant with more than 20 years of industry experience. Prior to joining Partminer, Darold spent 12 years as vice president of strategic planning at Information Handling Services Group Inc.

**Sources of Funding and Investors:** Partminer received its first-round financing of \$20.2 million from Boston Ventures Management, Inc., Information Handling Services (IHS) Group Inc., and Sea Coast Capital.

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## **pcOrder.com, Inc.** (PC Hardware & Software)

pcOrder.com, Inc ([www.pcover.com](http://www.pcover.com)) is a Vertical Marketplace that provides e\*commerce solutions to the hardware and technical software vertical. With pcOrder.com's technology, computer manufacturers, suppliers, resellers and end-users can leverage the Internet. By linking each of these channel members, pcOrder.com enables incremental revenue for companies at each level of the supply-chain. The company improves efficiency in the existing channel by providing seamless communication and information distribution between channel members.

As the current multiple-tiered personal computer channel struggles to retaliate against the introduction of the direct model by Dell, pcOrder.com offers a competitive alternative to existing channel members. By linking the supply chain through shared information and dynamic status and tracking, pcOrder.com improves the efficiency of the existing channel enabling traditional participants to remain competitive. Due to the technical nature of the channel, we believe pcOrder.com's solution has gained rapid adoption by channel members. pcOrder.com has strategic alliances and partnerships with Compaq, HP, IBM, Beyond.com Ingram Micro, Tech Data, Onsale.com, Entex, GE Capital ITS, EDS, CMP, Deja.com ZD Net, and Inktomi. Although pcOrder.com does not have any direct competitors, we believe Calico Software, Selectia, Inc., SMART Technologies, Inc., Open Market, Inc. and Broadvision, Inc. may provide certain solutions that overlap with those of pcOrder.com on occasion.

### **Key Company Events**

- **February 26, 1999** - pcOrder.com, Inc. announces Initial Public Offering.
- **July 13, 1999** - pcOrder.com Inc. Launches Sales Webtop.
- **November 11, 1999** - pcOrder.com Inc. Invests \$3.2 Million in E\*commerce Industries, Inc.
- **December 7, 1999** - pcOrder.com. Inc announced the pricing of its Secondary Offering of 3 Million Shares of Class A Common Stock.

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### **Management Overview**

**Ross A. Cooley, Chairman and CEO.** Prior to joining pcOrder.com, Mr. Cooley was Senior Vice President and General Manager responsible for Compaq Computer Corporation's \$7 billion North American business and operations. During his 12 years at Compaq, Cooley built strong relationships with industry executives in the PC channel that have helped pcOrder.com rapidly secure partnerships within the computer industry.

**Christina Jones, Founder, President and COO.** Ms. Jones launched pcOrder.com in June 1996 as a spin-off from Trilogy, the front office software company she co-founded as a Stanford University student in 1989. While at Trilogy, Ms. Jones worked to create partnerships with many of the key members of the computer industry and in the process, discovered an enormous business opportunity.

**Jim Luttenbacher, Vice President and CFO.** Mr. Luttenbacher comes to pcOrder.com from Mentor Graphics, the world leader in electronic hardware and software design solutions. At Mentor Graphics, Luttenbacher was division manager for a software product division focused on integrated circuit test and physical applications. He also served as Mentor's Corporate Controller and Chief Accounting officer prior to his division assignment.

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## SciQuest.com, Inc. (Precision Instruments)

SciQuest.com, Inc. ([www.sciquest.com](http://www.sciquest.com)) is a Vertical Marketplace that brings e\*commerce to the precision instruments and distribution vertical. The scientific supplies industry is estimated at \$11.8 billion and characterized by fragmented suppliers. SciQuest.com, Inc. provides a web-based, interactive marketplace for scientific products used by pharmaceutical, clinical, biotechnology, chemical, industrial and educational organizations worldwide. The marketplace solution utilizes enabling Internet technologies and leverages management's extensive industry expertise to streamline a traditionally inefficient and expensive supply chain. The company has chosen a distributor-neutral strategy, which we believe will benefit both adoption and margins in the long run. SciQuest's solutions reduce the time scientists require to find, compare, purchase, track and manage critical laboratory items. Procurement solutions allow purchasing professionals to reduce procurement costs by automating order processing, consolidating purchase orders and payments, reducing errors and providing more control and information to support enterprise-purchasing policies. Overall, the company creates a more efficient sales channel enabling suppliers to expand their market reach and reduce customer acquisition and order processing costs.

Founded in 1995, the company has built a team of industry veterans committed to reducing supply chain costs and inefficiencies thus benefiting both buyers and suppliers. As of September 1999, SciQuest.com employed more than 150 professionals in 15 states. Headquartered in Research Triangle Park, North Carolina. SciQuest has several strategic agreements in place. On October 28, 1999, SciQuest negotiated a strategic agreement with suppliers of life sciences and analytical instrument products. Suppliers include Ambion, Inc., Amersham Pharmacia Biotech, inc., BioWhittaker, Endogen Inc., NEN Life Science Products, Inc., PerkinElmer, Inc., Pierce Chemical Company and QIAGEN N.V. The agreement states that SciQuest will serve as the sole third-party provider of electronic marketplace services in the life sciences and analytical instrument products of its alliance partners. By negotiating strategic agreements of this nature, SciQuest creates a strong barrier to entry. SciQuest competes directly with Chemdex and in some instances with CambridgeSoft's ChemStore marketplace.

### Key Company Events

- **July 26, 1999** - acquires Going, Going...sold!
- **September 22, 1999** - Hires Industry Marketing Experts.
- **October 28, 1999** - Commences Strategic Alliance Initiative With Scientific Suppliers.
- **November 19, 1999** - Announces Initial Public Offering.

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### Management Overview

**Scott Andrews, Co-Founder and Chief Executive Officer.** Prior to SciQuest.com, Mr. Andrews spent five years as a sales professional with Baxter Scientific Products in Research Triangle Park, NC. While with Baxter Scientific, Mr. Andrews learned of the inherent difficulties of finding and purchasing scientific products from the perspectives of both the bench-top scientist and the purchasing manager.

**Peyton Anderson, Co-Founder and Vice President of Business Development.** Prior to starting SciQuest.com, Mr. Anderson spent six years as the sales manager for Butler Manufacturing Company. As sales manager, he was responsible for a multi-state territory with 24 sales associates. He was the youngest person to assume this level of responsibility in the 90-year history of the company.

**Lyle Brecht, Chief Business Development Officer.** Mr. Brecht brings nearly 20 years of entrepreneurial, management and technological expertise to his role as Chief Business Development Officer for SciQuest.com. In his role, he is responsible for collecting supplier data, standardizing content into the SciQuest.com taxonomy, and restructuring content into the form desired by SciQuest.com and private Intranet buyers.

**Jim Scheuer, Chief Financial Officer.** Prior to joining SciQuest, Mr. Scheuer was Chief Financial Officer for Boise Marketing Services, a \$100 million subsidiary of Boise Cascade Office Products. In this position, Mr. Scheuer improved the profitability of customer accounts, upgraded the information technology programs to support internal and external users, increased product capacity and reduced inventory costs. He has also served as Senior Vice President of Canadian Hickory Farms, LTD.

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## **MetalSite** (Steel)

MetalSite ([www.metalsite.com](http://www.metalsite.com)) is a Vertical Marketplace concentrating on the steel industry. Launched in 1998, MetalSite is an online exchange for surplus inventory steel and other metal products. MetalSite provides both information and a marketplace for its products. Available site information includes industry reports, events and stats. Users can search products listed for auction and place bids. The company is actively trying to expand its offering to include credit applications for orders. MetalSite is a web-based community for the metals industry that features a secure, online marketplace and comprehensive industry resource center. Users can find, buy and sell product online twenty-four hours a day. MetalSite provides a one-stop shopping e-commerce function, offering all the tools necessary to conduct business, including news on a daily basis, industry information, discussion groups, and the marketplace. The company offers Slab and the full range of Flat Rolled Products, including hot roll, cold roll, coated and tin mill.

MetalSite boasts some of the industry's leading players such as, Atlas Steel Products Company, Bethlehem Steel, Charter Steel Trading Company, Doral Steel, Industrial Steel & Fastener, Infra-Metals - Midwest, The JR Metals Company, LTV Steel, LTV Tin Mill Products, Miami Valley Steel, Mid-America Steel, Paragon Steel, Ratner Steel, Ryerson Tull, S.R. Robinson & Company, Inc., Steel Dynamics, Inc., WeBco and Weirton Steel Corporation. The company's strategic investors include major steel industry players such as Weirton Steel, LTV Steel and Steel Dynamics. The company's main competitor is e-STEEL.

### **Key Company Events**

- **May 3, 1999** - Announced the release of QuickBid 2.0.
- **November 24, 1998** - MetalSite registered more than 1,500 users during its initial phase.
- **December 8, 1999** - MetalSite announced the addition of IPSCO as the newest seller to its online marketplace. This addition brings the total number of sellers signed with MetalSite from 3 in 1998 to 30.

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### **Management Team Overview**

**Pat Stewart, President and CEO.** A 19-year veteran of the metals industry, Mr. Stewart helped lead the electronic commerce initiatives and corporate reengineering projects for Weirton Steel Corporation prior to joining MetalSite. He served as Weirton's chief information officer (CIO).

**David B. Bordo-CFO-** Mr. Bordo most recently served as vice president of finance and chief financial officer for Vertical Development Corporation, a software manufacturing company.

**Doug Schuster-Head of Strategy & Marketing-** spent 16 years in the electrical equipment and automation software industries. Most recently Mr. Schuster worked for Cutler-Hammer, a subsidiary of Eaton Corporation, where he held positions in marketing, strategic planning, finance and operations.

**Sources of Funding and Investors:** MetalSite is a privately held company formed from strategic investments from Weirton Steel, LTV Steel and Steel Dynamics

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## **PaperExchange.com (Pulp & Paper)**

PaperExchange.com ([www.paperexchange.com](http://www.paperexchange.com)) is a Vertical Marketplace that caters to the pulp and paper industry. The pulp, paper and packaging industry represents over \$300 billion of sales globally and over \$100 billion in the U.S. Industry products, or "grades," include containerboard (liner and medium used to make uncoated corrugated boxes), paperboard (used to make boxes and cartons), newsprint (for newspapers), fine paper (used to make writing, printing and publishing papers), and tissue (used to make napkins and paper towels). PaperExchange.com provides an electronic forum for the buying, selling and trading of pulp and paper products on a worldwide basis. With more than 2,400 registered members, spread out over 75 countries, PaperExchange.com is the world's largest online marketplace for the pulp and paper industry. PaperExchange.com's members have completed transactions in all major grades of paper. PaperExchange.com is open 24 hours a day, seven days a week and is located in the central Back Bay area of Boston, Massachusetts. PaperExchange.com enables buyers and sellers to negotiate pricing and directly transact with one another through its Trading Floor. The company charges the seller a commission based on the total notional value of any successful transaction conducted through the site. All paper is bought and sold by members through private, secured, anonymous transactions. PaperExchange.com also offers value-added services such as logistics and credit in addition to its value proposition of aggregating buyers and sellers in a centralized forum to reduce search time and overall transaction costs. PaperExchange.com and VerticalNet, Inc recently announced a strategic alliance. The company may compete with Paperdeals.com in the future although Paperdeals.com primarily focuses on commercial printing paper. The main competition facing PaperExchange is from the industry's existing broker network.

### **Key Company Events**

- **September 10, 1999** - PaperExchange.com Acquires MPX, Inc.
- **November 1, 1999** - Company began providing credit clearing services for a large subset of its buyer membership base.

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### **Management Overview**

**Jason Weiss, Chief Executive Officer.** Mr. Weiss is a co-founder and Senior Partner of Terrapin Partners LLC. Terrapin is a merchant bank specializing in traditional corporate financial services, strategic consulting, and entrepreneurial incubation. In 1998, Terrapin co-founded several businesses, including e-STEEL Corp., a business-to-business Internet-based trading exchange for the steel industry and American Classic Sanitation LLC, a Southern California based consolidator of portable restrooms.

**Carl Katzeff, Chief Technology Officer.** Mr. Katzeff is the former Chief Information Technology Officer for The Kraft Group's headquarters as well as for The Kraft Group's portfolio of companies, including International Forest Products, Rand Whitney Group, Buyboxes.com, Foxboro Stadium, New England Patriots, New England Revolution, and the San Jose Earthquakes.

**Rod Parsley, Vice President of Business Development.** Mr. Parsley was Vice President of Financial Risk Management at International Forest Products (IFP) where he was responsible for developing swaps, options, and other financial hedging products for the pulp and paper industry.

**Sources of Funding and Investors:** PaperExchange is a private company. The Company's investors include The Kraft Group, Internet Capital Group, Terrapin Partners LLC, and Roger Stone, a renowned international figure in the paper industry.

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## MARKETPLACE ENABLERS

Marketplace Enablers provide technology and services that "enable" pure-play Internet and traditional B2B companies to conduct business using the Internet. Marketplace Enablers are indifferent to the channels that they serve.

We expect the market for B2B Marketplace Enablers to benefit from two major trends. First, as new B2B e-commerce companies strive to secure their first-mover advantage, we believe executive teams will focus on developing industry relationships and acquiring customers while outsourcing technological requirements to Marketplace Enablers. Companies could spend months developing trading exchange and dynamic pricing capabilities in-house. The cost of outsourcing this to a Marketplace Enabler, such as Tradex or Moai Technologies, is small relative to the time saved. Second, we believe traditional B2B companies will turn to Marketplace Enablers to incorporate the Internet into their existing businesses. Traditional companies are realizing that in order to remain competitive they must provide an Internet solution to buyers and sellers. At the same time, they lack the technological capabilities to develop the required solutions in-house quickly. The primary requirements include Trade Exchange Applications, Product Data Taxonomy Creation, Parametric Searching Functionality, Auctions/Dynamic Pricing, Corporate Portals, Integration Applications, Web-Based Inventory Availability and Commerce Engines.

Doing business on the Internet necessitates functionality requirements absent from the "bricks and mortar" world. For this reason, we have seen a new class of companies crop up to address the demand for B2B e-commerce functionality. To become B2B e-commerce compliant, we think companies should be able to integrate, update and handle large amounts of structured and unstructured data. Customers must be able to conduct advanced searches, attain accurate product specifications, access industry news and receive timely price quotes. To ensure the interoperability of these multiple functions, companies have formed to integrate disparate applications, information, systems and standards. There are companies providing specific applications (Moai Technologies provides dynamic pricing applications) and there are companies tying disparate back-ends to each other (webMethods). The diagram on the following page outlines an overview of the Marketplace Enablers. The diagram delineates those companies that provide both intra-enterprise and inter-enterprise applications. Following the diagram, we provide detailed company examples.

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### Companies

- Requisite Technology
- Moai Technologies
- OnDisplay
- OpenMarket
- America Online, Inc.
- Tradex
- webMethods

See the section titled "B2B Technology Best Practices" for a more detailed overview of the technology requirements of B2B e\*commerce.

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## **Requisite Technology** (Product Data Taxonomy Creation)

Requisite Technology ([www.requisite.com](http://www.requisite.com)) provides businesses with electronic cataloging technology, content conversion and management capabilities. The company offers its finding technology and content services via enterprise software vendors. The target clients are large corporations that require accessible online product information to fuel their business-to-business electronic commerce operations. The combination of electronic content and patent pending finding technology allows buying organizations to quickly realize a return on investment on their procurement system and to reduce poor purchasing practices.

Requisite has partnered with American Management Systems, Oracle and SAP, in order to provide an optimal procurement solution. Requisite's patent pending technology, BugsEye, is embedded in enterprise procurement solutions, allowing the procurement officer to quickly find the exact item they need through an easy to use process. The company also provides a comprehensive suite of services to create and manage electronic product information for goods and services. The Unified Catalog Management Service evaluates supplier content and provides recommendations for building an organization-specific Unified Catalog, which can be managed on an ongoing basis with supplier updates and follow-on analysis.

Requisite offers the supplier the means to code its product data in a manner that will comply with multiple e\*commerce applications. The company will construct an electronic marketsite and enterprise procurement application as well as launch an e\*commerce initiative for the supplier. We believe the established relationships with large enterprise solution providers provide a direct channel to large buying organizations, resulting in expanded market opportunity for the supplier.

### **Key Company Events**

- **August 2, 1999** – Requisite releases BugsEye 2.5 enabling e\*commerce by providing easy finding and strong content management capabilities for procurement professionals.
- **October 18, 1999** – Requisite secures arrangement to provide catalog technology for the Whirlpool Corporation. The BugsEye solution enables users to easily find specific information without needing extensive IT training
- **November 17, 1999** – Requisite is honored with two distinct awards in the 1999 Top 50 E-Business Solution Developers category at the Oracle Challenge international technology competition. The company also succeeded in winning one of only-four positions in the “Most Innovative Solution Developers on Oracle” category.
- **November 29, 1999** - Requisite Technology announced that Hormel Food Corporation will use Requisite's content management services with the company's Oracle Internet Procurement system.

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### Management Overview

**Barbara Mowry, President and CEO.** Ms. Mowry served as President of the New Products Division of TCI, a cable services company acquired by AT&T. She was also the Founder and CEO of the Mowry Company. Prior to The Mowry Company she was President and CEO and founder of MPI a wholly owned subsidiary of UAL Inc, where over 9 years she grew the United Airlines Mileage Plus frequent flyer program into the worlds largest program of its kind.

**Kathy Cunningham, Chief Financial Officer.** Ms. Cunningham spent four years as Chief Operating Officer at NxTrend. She has also served as CFO at US West Information Systems and Assistant Treasure of Financial Planning and Cash Management at US West, Inc.

**Francie Anhut, Vice President, Marketing.** Ms. Anhut served as the Senior Vice President of strategic marketing at NEODATA, a \$300 million customer management services provider recently acquired by EDS.

**Christopher Beall, Chief Technology Officer.** Mr. Beall has served as Chief Technology Officer for CADIS, Inc., a developer of Internet/Intranet information classification, publishing, storage, and retrieval technology.

**Sources of Funding and Investors.** Mohr, Davidow Ventures, Sequel Venture Partners, Trinity Ventures, and Liberty Venture Partners, W.W. Grainger, Inc., Philadelphia Ventures, Corporate Express.

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## Moai Technologies (Auctions)

Moai Technologies ([www.moai.com](http://www.moai.com)) was founded in 1996 and has become a market leader in dynamic commerce solutions for the Internet. Moai provides customized companies with the technology and services for customized online auctions and trading exchanges. Moai's LiveExchange solutions allow companies to create public or private auctions and trading exchanges for the B2B, B2C or the C2C marketplaces. Customers span a wide range of industries from electronics to fine arts. The solutions provided by Moai are scalable, able to be customized and easily integrate with back-end systems.

Moai's portfolio of solutions addresses the different market requirements of enterprise companies, "dot coms" and application service providers. Each of the LiveExchange solutions offers enabling technology, hosting services and domain and technical expertise.

### Key Company Events

- **October 26, 1999** - Moai announced that it has entered into a strategic alliance with professional services firm Ernst & Young LLP. Through this partnership, Moai and Ernst & Young will jointly develop, integrate and implement complete e\*commerce solutions for Global 2000, "dot com" and mid-sized companies in the business-to-business and business-to-consumer markets.
- **December 10, 1999** - Moai, the pioneer and recognized leader of web-based dynamic commerce solutions, announced today that its newest version of LiveExchange online auction and trading exchange solution has been selected by MRO.com Inc., a leading provider of e\*commerce systems and wholly-owned subsidiary of PSDI (NASDAQ: PSDI).
- **December 10, 1999** - Moai, the pioneer and recognized leader in online auction and trading exchange solutions, today announced that PartsDriver.comSM has selected Moai's LiveExchange software to deploy its online trading forum.

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### **Management Overview**

**Anne Perlman, President and CEO.** Ms. Perlman has 21 years experience in Silicon Valley. She has also worked for Tandem Computers as VP and General Manager of Multimedia, and served as VP of Marketing and President of Tandem Resource Company.

**Deva Hazarika, Founder.** Mr. Hazarika has worked as both an independent consultant and a consultant for client-server systems integrator, BSG Consulting.

**Frank Kang, Founder and Chief Scientist.** Mr. Kang has also served as an independent consultant as well as a consultant for BSG consulting.

**Ray Letulle, Chief Technology Officer.** Mr. Letulle served as an Information Systems Consultant for BSG in Houston where he acted as Chief Architect for several large-scale distributed computing projects.

**Sources of Funding and Investors.** Redleaf Ventures, Tredegar Investments, Walden Group of International Funds, HarborVest Partners LLC, Reuters Holdings, UPS Strategic Enterprise Fund, Vortex, SI Ventures and Broadvision.

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## **OnDisplay** (Corporate Portal)

Founded in 1996, OnDisplay ([www.ondisplay.com](http://www.ondisplay.com)) provides infrastructure software that drives e\*business portals and e\*marketplaces. The company's product, CenterStage, allows disparate applications to rapidly integrate content for use on the Internet. At the core of the CenterStage technology platform is a graphical development environment to create and test information retrieval and transformation agents. These agents have the ability to access information from multiple sources in many different formats. Some of these sources include the Web, relational databases, ERP applications, legacy applications, and various file systems. Formats supported include HTML, XML, reports, tables, EDI, and application data streams.

### **Key Company Events**

- **October 19, 1999** - OnDisplay announces CenterStage 4: comprehensive Business-To-Business integration solution.
- **November 8, 1999** - OnDisplay Taps GE Executive As COO.
- **November 17, 1999** - OnDisplay signs IMetrikus, Epylon.com and Pointspeed to join existing customers Harbinger.net and PurchasePro.com to aggregate, integrate and exchange e\*business information
- **December 7, 1999** - OnDisplay, Inc. Launches OnDisplay Europe.

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### **Management Overview**

**Mark Pine, President and Chief Executive Officer.** Mr. Pine was the Senior Vice-President of Sybase's largest Product Division with over 800 employees, during the peak growth years from 1990 to 1994.

**Trung Dung, Chief Technology Officer.** Prior to joining OnDisplay, Mr. Dung held several senior software development positions at GTE Laboratories, Software Emancipation Technology (during the start-up years) and most recently at Open Market.

**Venkat Mohan, President and COO.** Mr. Mohan has worked for General Electric Information Services (GEIS) Inc., where he served as Vice President of Global Marketing and E-Commerce.

**Dave Larson, Chief Financial Officer.** Mr. Larson worked for AboveNet Communications, Inc. where he was Senior Vice President and Chief Financial Officer. At AboveNet, which went public in December 1998, Mr. Larson was involved with both the initial and secondary public offerings totaling \$465 million, as well as the subsequent \$1.4 billion sale of AboveNet to Metromedia Fiber Network.

**Sources of Funding and Investors:** Amerindo Investments Atlas Ventures BancBoston Ventures Matrix Partners Norwest Ventures Crosslink Capital and W.W. Grainger.

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## **America Online, Inc.** (Commerce Engine)

America Online Inc. ([www.aol.com](http://www.aol.com)) and Sun Microsystems, Inc. formed the Sun-Netscape alliance to provide easy to deploy, comprehensive enterprise and e\*commerce solutions to business partners and other companies competing in today's Net Economy.

Netscape brings CommerceXpert as an e\*commerce solution. The product is a full suite of packaged applications for buying, selling, merchandising and delivering content over the Internet. It offers scalability, performance and security capabilities.

Netscape also provides TradingXpert, which is an Internet commerce exchange application that enables trading partners of varying size and technical sophistication to transact business easily with large enterprises. This process can take place directly or through Internet service providers (ISPs). TradingXpert allows trading partners to manage transactions online via an easy-to-use browser interface, use in-context document turnaround capabilities to facilitate document exchange, and easily add and modify prepackaged forms using extensive customization capabilities.

### **Key Company Events**

- **February 23, 1999** - France Telecom Teams With Netscape to Provide Business-to-Business e\*Commerce Solutions.
- **March 9, 1999** - Planet 411 and Netscape to Use MerchantXPert to Build Virtual Cities e\*Commerce Sites.
- **March 9, 1999** - Netscape Plans to Integrate XML Into E\*Commerce Applications.
- **September 16, 1998** - Netscape Announces Enterprise Integration Solutions for SAP R/3.
- **September 23, 1998** - Lucent Technologies and Netscape Team to Deliver Lucent e\*Commerce Solutions.

### **Management Overview**

**Stephen M. Case, Chairman and CEO.** America Online.

**Steve Savignano, Senior Vice President.** Netscape Enterprise Group.

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## **Tradex** (Trading Exchange)

Tradex ([www.tradex.com](http://www.tradex.com)) was acquired by Ariba in December 1999. Tradex was privately funded in 1996 as a spin-off from DYNABIT, an international computer hardware and peripheral distributor that began developing software to automate operational processes between its suppliers and customers.

Tradex provides marketplace and exchange software that enables our customers to streamline the commerce process and maximize the financial and operational benefits of eCommerce.

The company's software essentially allows multiple buyers and sellers to dynamically exchange goods, services and information online.

### **Key Company Events**

- **May 24, 1999** – VerticalNet selects Tradex as a technology partner.
- **June 7, 1999** – TRADEX Names John Baumstark Chief Operating Officer.
- **September 8, 1999** – Tradex Commerce Center solution achieves record performance against new e\*commerce. The test validates that enterprise Java Bean-based platforms offer the performance, scalability & reliability demanded of high performance digital marketplaces.
- **November 15, 1999** – American Express selects Tradex to build new B2B commerce network.
- **December 20, 1999** - Chemdex Makes Strategic \$10 Million Investment In TRADEX.
- **December 20, 1999** - Market Leaders Support Ariba Acquisition of TRADEX.

### **Management Overview**

**Daniel S. Aegerter, Chairman and Chief Executive Officer.** Mr. Aegerter has been responsible for driving corporate and product vision, and overseeing a company growth rate that has doubled from quarter to quarter.

**John Baumstark, Chief Operating Officer.** Mr. Baumstark brings more than 15 years of experience in enterprise software, sales, and services and channels management to TRADEX. He joined the company from Infinium Software where he directed worldwide field operations and had responsibility for over \$100 million in revenue.

**Stewart T. Bertron, Executive Vice President and Co-Founder.** Mr. Bertron spent ten years specializing in commercial real estate development and finance. Mr. Bertron was a top producer with the Portman Companies in Atlanta, Goldman Sachs in Miami, and the Burt Companies in Tampa, where he was involved in the development, leasing, and sale of over \$300 million dollars of commercial real estate.

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**James M. Modak, Chief Financial Officer.** Modak served as Chief Financial Officer of American Software, Inc. and its 84% owned subsidiary Logility, Inc. from 1997 to 1999. These public companies operate in the Enterprise Resource Planning and Supply Chain markets and generated over \$100 million in revenue. During his tenure he successfully completed an IPO of Logility which raised \$35 million in 1997.

**Sources of Funding and Investors.** Apex Investment Partners, First Analysis Venture Capital, Imlay Investments, Internet Capital Group.

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## **webMethods** (Integrators)

webMethods ([www.webmethods.com](http://www.webmethods.com)) is a leading provider of open solutions for B2B integration. The webMethods B2B™ solution provides companies with integrated, direct links to buyers and suppliers, connecting them to major B2B marketplaces and enabling real-time, interactive communication through the Internet, regardless of existing technology infrastructure. Powered by XML, webMethods B2B can automate critical business processes such as customer relations, procurement and financial services, supply chain management, logistics and sell-side/buy-side e\*commerce. With webMethods B2B, the benefits of internally focused B2B integration can be extended beyond a single company to its customers, suppliers and business partners.

The webMethods B2B product suite leverages a variety of open Internet standards to automatically link business processes with those of key partners--without the time or expense of altering existing legacy, proprietary or ERP applications. webMethods B2B facilitates secure, guaranteed, bidirectional information exchange between disparate applications within a business community, and easily extends beyond the firewall to integrate with EDI/ERP systems. webMethods B2B also provides support for a broad range of current B2B communication standards including RosettaNet, OBI, Acord, cXML, ANSI X12 EDI, W3C XML, FpML, CPFR, OAG, and BizTalk.

### **Key Company Events**

- **December 8, 1999** - webMethods and KPMG combine technology and consulting experience to provide a comprehensive RosettaNet implementation solution.
- **November 23, 1999** - Intelligroup and Lante Corporation select webMethods as preferred provider of business-to-business e\*commerce solutions
- **November 19, 1999** - webMethods announced that it has filed a registration statement with the Securities and Exchange Commission for an initial public offering of the company's common stock.
- **November 16, 1999** - webMethods announced the completion of a \$17 million round of financing. This round of financing includes investments from Dell Computer Corporation, Eastman Chemical Company, FDX Corporation, KPMG LLP and SAP AG.

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### **Mangement Overview**

**Phillip Merrick, Founder, President and Chief Executive Officer.** Mr. Merrick is a 14-year software industry veteran and the original architect of the webMethods product suite. Prior to founding webMethods, Mr. Merrick served as Vice President of Engineering at Open Software Associates (OSA), an international Internet and GUI tools company formed through a staff buyout of a division of Hewett-Packard.

**Mary Dridi, Chief Financial Officer.** Before joining webMethods, Ms. Dridi served as the Vice President of Finance for SRA International, Inc., an information technology company where she was involved in the formation of several subsidiaries and joint ventures.

**Sources of Funding and Investors.** Goldman Sachs, the Mayfield Fund, MSD Capital, FBR Technology Venture Partners, Dell Computer Corporation, Eastman Chemical, FDX Corporation, KPMG LLP, and SAP AG.



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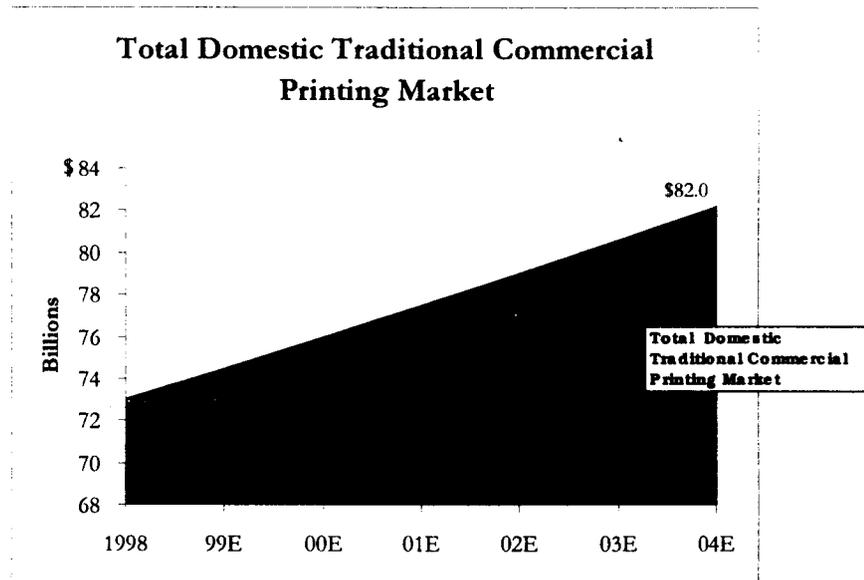
## **Appendixes**

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## Appendix A

### Case Study: Addressable Market for the Commercial Printing Industry

The U.S. market for printed products was roughly \$211 billion, in 1998; one third of which, or \$73 billion, is comprised of commercial printing (Source: U.S. Department of Commerce). The majority of commercial print materials include; labels, cards, catalogs and advertising material.



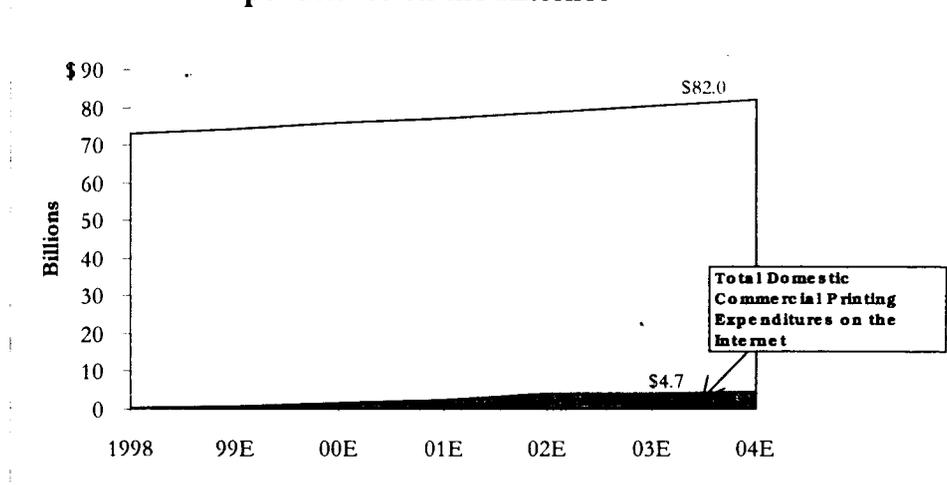
Source: U.S. Department of Commerce & TWP B2B Internet Research

### The Commercial Printing Value Chain

A typical printing transaction begins with a corporate client in need of a print job. The corporate client engages a graphic designer to design the layout. The graphic designer will retain a fulfillment house to manage the print job. The fulfillment house will source a distributor who will in turn interact with the actual printer. The \$73 billion dollar market value is the sum of all transactions that pass through each link in the commercial printing value chain. At this stage in the market sizing the value is the revenue that is flowing to each member in the printing channel.

The following graph shows the total domestic commercial printing market as well as the total potential Internet-based commercial printing market. The potential Internet-based commercial printing market is comprised of the gross dollar value of commercial printer's transactions that, we think, will migrate to the web. We think over a long period of time the Internet-based market will move entirely to the web, therefore the Internet-based market will rise to the \$73 billion level over time.

## Total Domestic Commercial Printing Expenditures on the Internet

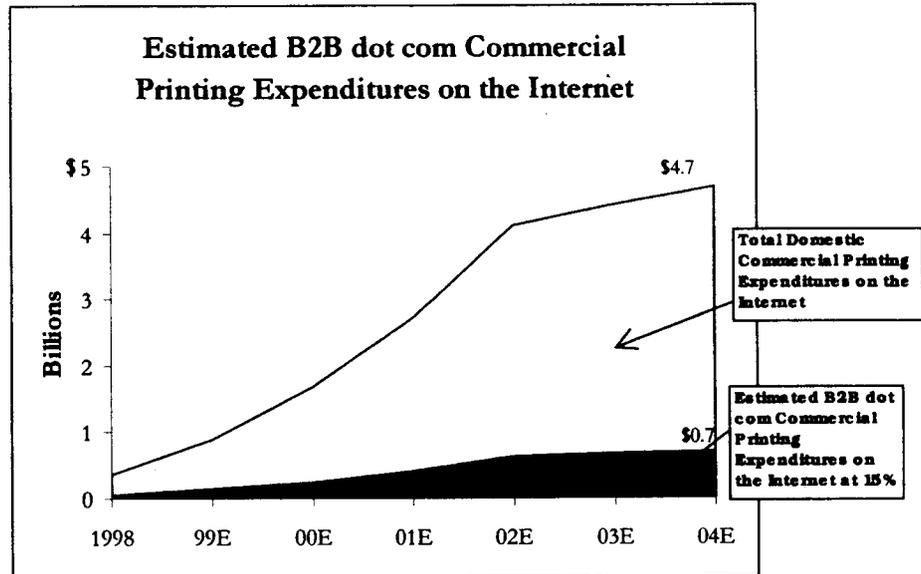


Source: U.S. Department of Commerce & TWP B2B Internet Research

The addressable market can be assessed by looking at the inefficiencies that plague the current method of doing business. The printing industry is laden with inefficiencies ranging from dependence on phone and fax to overstuffed sales forces. Other inefficiencies might include the time it takes for a corporate client to locate the appropriate graphic designer for the specific job. Also, from the designers' point of view, inefficiency might be the staff involved in finding the correct fulfillment house. All of these decisions are based on the specific knowledge of each value chain member. There are many resources dedicated to executing printing jobs which is what has caught the eye of the new B2B e-commerce printing players.

For example, Noosh provides a one-stop solution for corporate clients requiring print jobs. Their solution includes workflow collaboration, ordering, estimating, timelines, shipping, document creation, personalized materials and more. Through partnerships and alliances, the company has established a qualified network of commercial printers and buyers who can easily interact towards the completion of a printing job in a more efficient manner. The increases in efficiencies are what we consider the addressable market for a new dot com entering the commercial printing space.

In determining the addressable "dot com" market in the commercial printing channel, we only include the savings or efficiencies that result from the new B2B model. In the commercial printing sector, these efficiencies might come in the form of reduced search costs for the print buyer or perhaps a reduction in printing errors, which would benefit both sides of the transaction. The following graph conservatively assumes that these new dot coms can capture 15% of the potential Internet based printing segment in the form of new efficiencies. In 1999 this number is approximately \$100 million and is projected to grow to \$700 million in the next 5 years.



Source: U.S. Department of Commerce & TWP B2B Internet Research

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## Appendix B

### Case Study: Commerce One Produces Results for Eastman Chemical

A case study of Eastman Chemical Company, a chemical and plastics manufacturer with annual revenue of \$5 billion, shows how implementing Commerce One's solution yielded a 126% ROI in the first ten months of operation. Eastman Chemical Company has an annual non-production goods spend of roughly \$900 million. The implementation was 4 months versus up-to a year from an ERP (enterprise resource planning) system. A limited pilot began in January 1999 with 50 approved employees purchasing over the system. By July, the Commerce One solutions rolled out to 700 employees exhibiting a 1300% increase usage in less than 6 months. Ultimately, the company expects to process 6,000 purchase orders per month using the Commerce One Solution.

#### Eastman Chemical ROI Analysis

|                        | Traditional Method       | Commerce One                   |
|------------------------|--------------------------|--------------------------------|
| Order Processing Cost  | \$115/order using SAP R2 | Not disclosed                  |
| Fulfillment Cycle      | 1 week or more           | 24 hours                       |
| Product Cost Reduction |                          | 5% reduction                   |
| Headcount Reduction    |                          | 2 people or \$100,000 annually |
| Inventory Cost Savings |                          | \$250,000                      |
| ROI (First 10 months)  |                          | 126%                           |

Source: Aberdeen Group, September 1999

Although this ROI analysis provides significant detail into what companies are seeing in form of returns, there are still multiple unanswered questions. The main question is that of transaction fees. Because Commerce One charges the supplier the transaction fee, it is excluded from the above ROI calculation. What is the trade off between revenue enhancement and increasing transaction fees as a result of climbing volumes? This is an issue not addressed in the Eastman Chemical case study that affects the supplier ROI proposition.

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## Appendix C

### Case Study: Auto Industry Channel Analysis: Bag the Gorilla

This channel analysis shows how “bagging the gorilla” can greatly improve the likelihood of supplier adoption to a marketplace.

The domestic automotive manufacturing industry is clearly dominated by a limited number of players. In 1998, General Motors accounted for 28.7% of the combined domestic car and truck market, followed by Ford with 24.6% and Chrysler with 15.7% of the market. That is almost 70% of the U.S. car and truck market being dominated by only three players. These market players would certainly be considered the gorillas of the auto industry.

A company such as General Motors is faced with highly complex procurement issues everyday. An auto manufacturer of this caliber will deal with up to 30,000 suppliers. The firm spends roughly \$87 billion a year in procurement alone. It costs General Motors about \$100 to process each one of the hundreds of thousands of purchase orders every year (*Source: Wall Street Journal, December 3, 1999*). It is very difficult to maintain so many supplier relationships especially given the high volatility in vehicle demand.

Looking at the margins of these automotive gorillas provides some insight into the need for improvement in operating costs. The average gross margin of the two largest players is less than 4.5% and the average net margin is somewhere below 2.5%. With the advent of companies like Commerce One, auto manufacturers can realize substantial cost savings in their vast procurement process by implementing the buy-side solution provided by the new B2B e-commerce entrant. Commerce One has teamed up with General Motors to link the auto maker to “the Global Trading Web” which is a network of B2B e-commerce portals that use the Commerce One software. The new arrangement will be called TradeXchange and is expected to attract roughly \$300 billion per year in supply chain sales. (*Source: Economist, November 6<sup>th</sup>-12<sup>th</sup> 1999 & The Wall Street Journal, December 3, 1999*)

From the perspective of Commerce One, this would certainly constitute a “bagging of the gorilla.” By partnering with the gorilla, the gorilla (GM) can entice the suppliers to adopt the system. It would be difficult for Commerce One to get suppliers to adopt a marketplace without the influence of General Motors. This will allow the entire TradeXchange to operate more cohesively ensuring that all available economies of scale will be realized. This is the key to bagging the gorilla. If the initial relationship with the dominant player can be secured, then all of the smaller accounts should fall into line bringing greater and more rapid supplier adoption.

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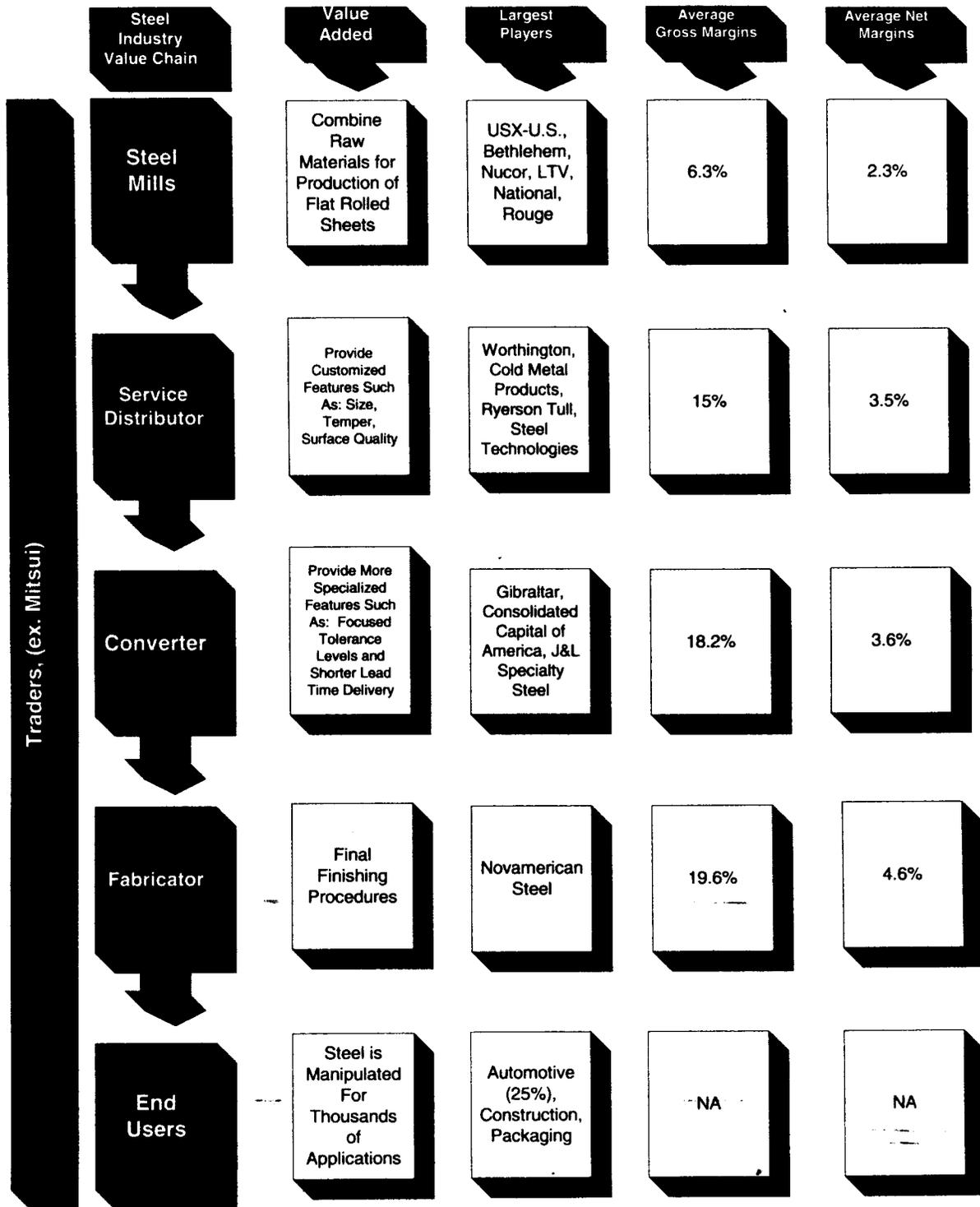
## Appendix D

### Case Study: Steel Industry Channel Analysis

One B2B e\*commerce company that has targeted the entire steel industry is e-STEEL. This company has created a marketplace for the steel industry by providing a neutral location where the various players in the sector can buy and sell their products. By examining the steel channel structure prior to the emergence of an e\*commerce play, we hope to unearth the inefficiencies currently in existence within the channel structure.

As we identify the players who constitute the steel value chain, we attempt to better understand their position by considering factors such as their value added to the product, the margins involved at each level in the chain, determining whether these players are fragmented or concentrated, etc. This process is invaluable when visualizing the big picture of a particular industry and looking for windows of opportunity for an e\*commerce company. The diagram on the following page represents a high level overview of the steel industry value chain. The purpose of this diagram is to extract where the underlying inefficiencies are in the value chain.

## Steel Channel Analysis



Source: TWP B2B Internet Research

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At the top of the steel value chain is the mill. This is where the various components such as iron, carbon, chromium, etc. are combined to form a multitude of steel grades typically in the form of rolled sheets. There are currently over 3,000 catalog grades of steel ranging from the most basic, used for railroad ties, to more complex grades used for a multitude of highly specialized applications. One of the major players in this initial link of the value chain is Rouge Steel. This company combines all of the raw material to process and produce flat rolled steel products. The primary customers of Rouge are the automotive industry, steel converters, service centers and others. The products sold by Rouge are subject to great price volatility; therefore, two-thirds of its products are sold under fixed price contracts as an internal form of hedging.

The next link in the value chain lies with the service distributors or intermediate processors. These companies add value to the rolled sheets by providing customizing features like size, width, length, thickness, shape, temper and surface quality. This is a highly competitive area with factors such as product quality, delivery time and price constituting the differentiation among competitors. Geographic region also plays a major role in the potential success of a company due to stringent delivery schedules required by many customers. A large operator in this space is Worthington Industries. The firm engages in the production of processed steel products, metal framing and steel cylinders. The value added by this segment of the business can be seen in the gross margins of companies like Worthington Industries, which are around 15%.

The third element of the value chain in the steel industry is converters. These types of firms contribute high margin and value added services to the raw materials with which they are supplied. They typically serve customers who require more focused tolerance levels as well as shorter lead-time delivery, two services that cannot be efficiently provided by raw steel manufacturers or distributors. Customers of a converter would be automotive manufacturers, appliance manufacturers, construction and building firms and machinery manufacturers.

Fabricators constitute the next position in the value chain. At this stage, the steel is ready to be processed into its final stage for delivery to the end user. A company such as Novamerican Steel will process converted steel into a product to be sold to customers like the auto makers, construction firms and agricultural equipment manufacturers.

Finally, at the end of the value chain lies the end user. Some of the largest consumers of steel are automotive manufacturers and construction firms. Two of the largest players in the automotive space are General Motors and Ford. They consume an extremely large amount of steel in various stages of production and are also subject to sudden fluctuations in demand.

The vertical rectangle represents the trader element of the steel channel. The trader will help to facilitate trade between any of the market players within the channel. For example, Mitsui and Company will act as an intermediary between buyers and sellers who import or export steel. The value from this service is derived from having broad access to information about the various state of affairs in the worldwide steel industry. This type of information can lead to potential arbitrage opportunities presented from

supply discrepancies throughout the global steel industry. An intermediary such as this is typically the best place to begin the search for channel inefficiencies and accordingly the opportunity for a dot com.

The following chart represents three-year historical average margins for the various players in the steel channel.

| <b>Comparative Margin Analysis of Segment Players</b> |                                     |                                   |
|---|-------------------------------------|-----------------------------------|
|   | <b>Average<br/>Gross<br/>Margin</b> | <b>Average<br/>Net<br/>Margin</b> |
| <b>Mill</b>   | 6.3%                                | 2.3%                              |
| <b>Distributor</b>                                    | 15.0%                               | 3.5%                              |
| <b>Converter</b>                                      | 18.2%                               | 3.6%                              |
| <b>Fabricator</b>                                     | 19.6%                               | 4.6%                              |

Source: TWP B2B Internet Research

It is clear that the margins increase as the steel moves down the value chain. The channel structure for the steel industry, as it has existed for quite some time, is rather linear and easy to visualize. There is a reasonable amount of value added throughout the length of the chain but certain elements do lend themselves more as a target by an e\*commerce play.

To illustrate the potential pockets of inefficiencies in the channel we would like to address the issue of capacity. For example, in 1998 Mills were operating at 86% of total capacity as a whole. Rouge Steel Company, a mill, operated at 94.3% of its production capacity. This figure is certainly high considering standard capacity for a heavy goods industrial manufacturer is around 80%-85%.

| <b>Domestic Steel Production Capacity (mn of tons)</b> |             |             |             |
|--|-------------|-------------|-------------|
|  | <b>1996</b> | <b>1997</b> | <b>1998</b> |
| <b>Raw Steel Capacity</b>                              | 116.1       | 121.1       | 124.9       |
| <b>Raw Steel Production</b>                            | 105.3       | 106.7       | 107.3       |
| <b>Utilization</b>                                     | 90.7 %      | 88.1 %      | 85.9 %      |
| <b>Industrial Goods Standard = 80-85%</b>              |             |             |             |

Source: Rouge Steel 10-K, 1998

Given this tight level of available production, one might expect the price of raw steel to begin to steadily increase resulting in raw steel manufacturers turning away business due to their inability to fulfill orders. E-steel provides an alternative to this scenario for at least two reasons.

First, the inflationary pressure of tight capacity will not necessarily result in increased prices from the buyer's perspective. Through the exchange, the buyer has access to many more suppliers who were previously unknown. Information concerning potential arbitrage opportunities is primarily the function of those who facilitate trade, which in this

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case would be the steel traders. The buyer is now enabled to shop around and transact with a greater number of business partners, resulting in greater price discovery and thus helping to contain any potential inflationary pressure. This is typical of any exchange that is able to attract enough players to the marketplace and develop some minimal degree of liquidity. This new market searching capability might diminish the relevancy of a company like Mitsui. If information pertaining to worldwide supply and demand for steel is freely available via the Internet, then there will be less of a need for a real world intermediary. Again, this would be considered a good starting point for identifying the inefficiencies in the channel.

Second, the exchange enables companies such as Rouge, a mill, to effectively expand their capacity to a level that will meet demand. By this we mean that the firm can look to the exchange to fulfill orders that it is unable to produce within its own factory. For example, suppose that Worthington, a Service Distributor, has placed an order for x number of rolled steel sheets. If a steel mill is currently operating at capacity, the firm can now engage the e-STEEL marketplace in order to quickly find the additional sheet roles that it needs. This allows the company to deliver the steel to its customers without creating breaks in the flow of goods. This preserves the mill's reputation as a dependable supplier who can come through for its clients even in times of increased demand. In effect, e-STEEL is enabling the channel to trade factory capacity. A company can hedge its production capacity against the backlog of orders it is facing. Also, a company with little order backlog could engage the market to effectively auction its excess production capacity. This idea combines the physical nature of steel production with the digital nature of information regarding factory capacity.

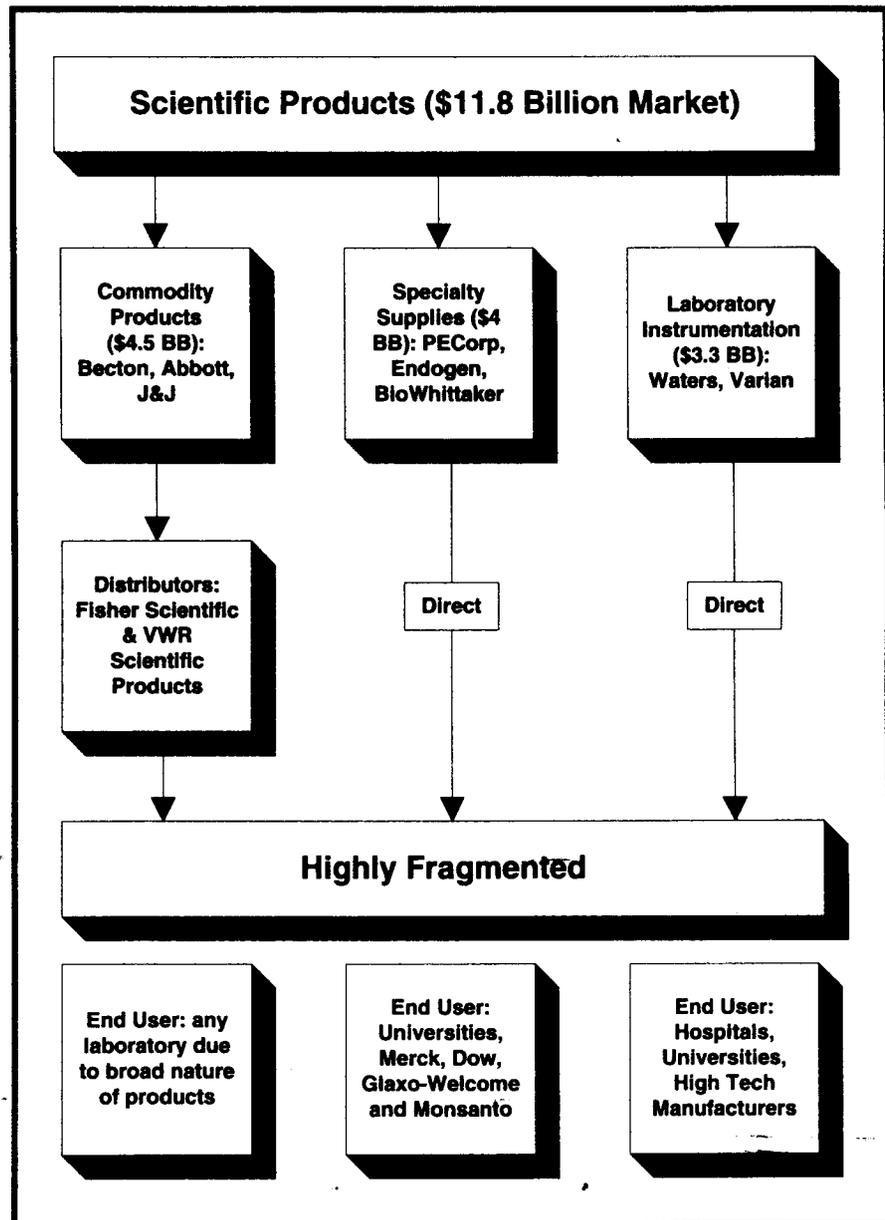
If the e-STEEL market does in fact evolve to support this functionality, then it will cut into the business provided by the trade facilitators, such as Mitsui. In that case, the e-STEEL business model will provide yet another example of how the Internet can eliminate certain channel participants who are not adding significant value to the end product.

## Appendix E

### Case Study: The Channel Strategy and Gross Margin Potential: An Investigation into the Life Science Product Market

In 1998, the estimated market value for scientific products in the U.S. alone was approximately \$12 billion, which translates to roughly \$36 billion when considering the entire global market.

The following is a graphical representation of the market segmentation in this space:



Source: Company Financials & TWP B2B Internet Research

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This exhibit illustrates how traditional distributors have inserted themselves into the value chain of the commodity products category, while opting not to come between the suppliers and end users of instrumentation and specialty supplies. The primary distributors involved in this commodity category are VWR Scientific Products and Fisher Scientific. These two companies distribute approximately one-third of all commodity products. Both companies are positioned to funnel a broad array of products into their database resulting in a very large catalog from which both independent as well as major laboratories can order products.

Generally, the life science products manufacturer and supplier base has been highly fragmented with no single player accounting for any significant portion of the market. There are over 5000 suppliers representing one million products, many of which are highly specialized and differentiated. Examples of life sciences research products include: reagents, chemical compounds, specialty chemicals, consumables, research instruments and other equipment. There are three categories of life sciences products: Commodity Products, Specialty Supplies and Specialty Instrumentation.

**Commodity Products.** Commodity products are characterized as generic consumable lab supplies, which might include test tubes, beakers and other everyday lab equipment. They are typically purchased frequently with little need for follow up services from the supplier. Also, there is little technical sophistication attributed to these items allowing them to be purchased site unseen by purchasing agents or the lab operators themselves.

It is for these reasons that distributors have inserted themselves in this segment of the market. With little need for contact between the end user and the manufacturers for such mundane products, a distributor is capable of managing the needs of the typical purchaser of such items. These products could be sourced from over 1500 different suppliers; however the larger and more dominant suppliers are Becton, Dickinson and Company; Abbott Labs and Johnson & Johnson. Continuing down the value chain, there are certain distributors that have established dominance in this category as well. Two of the largest distributors in the commodity products segment are Fisher Scientific and VWR Scientific Products.

**Specialty Supplies.** Specialty supply items are also considered consumable, however they are typically too technically sophisticated to be handled by a distributor. An example of a specialty supply item might include antibodies or chemical reagents. In fact, half of the items purchased, falling under this classification, are chemicals. The complex nature of these products requires the purchaser to maintain a direct relationship with the supplier and/or manufacturer. This market subset is highly fragmented as well. With 3 to 5 thousand suppliers interacting with tens of thousands of small laboratories, typically through supplier catalogs, there is a large amount of effort invested simply in identifying contacts and tracking the purchasing habits of repeat customers. Although the supplier end of this space is highly fragmented, there are certain companies that have established a relatively dominant position such as PE Corp, Endogen and BioWhittaker. Some of the major commercial end users of such products are Merck, Dow Chemical, Glaxo-Wellcome and Monsanto.

**Specialty Instrumentation.** Specialty instrumentation items are considered durable goods with high average ticket costs. An example might include a highly sophisticated diagnostic-imaging machine used by a hospital. Generally, the price of these items is upwards of \$10,000 each. Not unlike specialty supplies, the high degree of product differentiation that exists within the instrumentation segment lends to the emergence of direct relationships between the supplier and the end user. There are around 150 manufacturers operating in this space, of which 10 seem to dominate. Some of the larger companies operating in this space are Waters Corporation and Varian, Inc. There is little room for a traditional distributor in this space due to their inability to provide the follow up services required by buyers of such sophisticated products. Major end users in the instrumentation segment would include hospitals or other organizations such as a high tech manufacturer.

As discussed earlier, the nature of the products in question (i.e., degree of product specialization) can account for most of the existing channel structure but an examination of margins provides further insight into why the commodities category has a distributor and the other categories do not. The margins demonstrate what sort of room there is for a new player in the channel. If the current operators have relatively small margins, then it is difficult for a new entrant to justify their existence.

The following table represents both gross margins and net margins of large players in the three market segments. The distributors are operating with virtually zero net margins, while many of the suppliers are showing around 10% net margins as a whole. However, the net margins of the specialty product suppliers and the lab instrument suppliers are noticeably lower than those of the commodity product suppliers. This difference in net margins provides further support for the current channel makeup of the three segments constituting the scientific products market. There is little room for a traditional distributor in either the specialty supplies market or the lab instrumentation market. We think the lower margins in the specialty supplies and lab instrumentation categories is a major factor explaining why no traditional distributors emerged in these market categories.

| <b>Comparative Margin Analysis of Segment Players</b> |              |            |                           |              |            |
|---|--------------|------------|---------------------------|--------------|------------|
|   | <b>Gross</b> | <b>Net</b> |                           | <b>Gross</b> | <b>Net</b> |
| <b>Distributors of Commodity Products</b>             |              |            | <b>Specialty Supplies</b> |              |            |
| VWR   | 23.10%       | 2.60%      | PE Corp                   | 54.30%       | 9.06%      |
| Fisher Scientific                                     | 28.50%       | 1.03%      | Endogen                   | 62.60%       | 4.50%      |
|   |              |            | BioWhittaker              | 49.70%       | 12.00%     |
| <b>Commodity Products</b>                             |              |            | <b>Lab Instruments</b>    |              |            |
| Becton, Dickson                                       | 50.60%       | 7.60%      | Waters                    | 59.80%       | 12.00%     |
| Abbott Labs   | 56.80%       | 18.70%     | Varian                    | 40.30%       | 4.20%      |
| J & J   | 68.30%       | 14.60%     |                           |              |            |

Source: Company Financials

The companies seeking to utilize the Internet as a more efficient means to distribute scientific products are SciQuest and Chemdex.

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**Overview of Chemdex.** Chemdex has attempted to utilize the organizational capabilities of the Internet to broaden the scope of any player in the life sciences supplies industry with the introduction of its MarketPlace. The company is primarily focused on the commodity products category. Chemdex has established a non-exclusive agreement with VWR Scientific Products, one of the largest commodity product distributors. This non-exclusive agreement allows Chemdex to maintain its neutrality and VWR to continue to provide customer-specified procurement solutions to those operating outside the Chemdex MarketPlace. Chemdex currently offers 240,000 products from roughly 100 suppliers but plans to expand this offering to 550,000 additional products through its VWR partnership. Essentially, the company is acting primarily as a reseller for VWR.

By aggregating many purchase orders at once, Chemdex may be in a position to negotiate price discounts from product suppliers and distributors. However, the primary relationships currently in place with Chemdex specify that it cannot mark up certain products that it sells to the end user. For example, under the agreement between Chemdex and VWR, a distributor, Chemdex simply forwards the customer or end user's order to VWR for fulfillment. In the case of VWR's 40 largest existing customers, Chemdex receives no compensation for its service and receives only a small fee for directing new customers to VWR. In this case, Chemdex is an e\*reseller in that they are inserting themselves between the traditional distributor and the end user. The concept of e\*reseller is discussed in greater detail in Section 3.

Chemdex also has agreements with the end users or the buy-side of commodity products market such as its arrangement with Genentech. Genentech has agreed to purchase its commodity products using the Chemdex solution. The agreement specifies that Chemdex will not receive price discounts from certain suppliers on the products purchased by Genentech through the Chemdex MarketPlace. Therefore, Chemdex will receive little or no margins on these products. An agreement such as this implies that low margins are an acceptable trade off for the hope of future increased sales volume, customer adoption and brand awareness. In this case, Chemdex is acting as an e\*distributor in that they are inserting themselves between Genentech and its suppliers. The concept of e\*distributor is also discussed in greater detail in Section 7.

Chemdex has entered these types of relationships in order to establish some degree of critical mass for its MarketPlace. First, relationships with end users such as Genentech are designed to prove to potential suppliers and distributors that large buyers are using the Chemdex MarketPlace. Based on these relationships, the question becomes; how is Chemdex going to position itself over the long run in terms of either acting as an e\*reseller or an e\*distributor? Given that most of the products offered through the Chemdex Marketplace originate from VWR, a distributor, the prevailing category would seem to be that of an e\*reseller because Chemdex is coming between a distributor and an end user. In the mean time, Chemdex will most likely act as some sort of hybrid between an e\*reseller and an e\*distributor.

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This becomes more evident in light of Chemdex's relationship with Genentech in that Chemdex can not sustain long run buyer relationships that lead to zero margins with every end user that engages the web site. The Company's value proposition to the researcher is the ease and convenience of searching, viewing and purchasing a vast array of scientific products in one place. If the Company is to deliver on that proposition as well as sustain long run profitability, then an enormous amount of volume must be established due to their low margins.

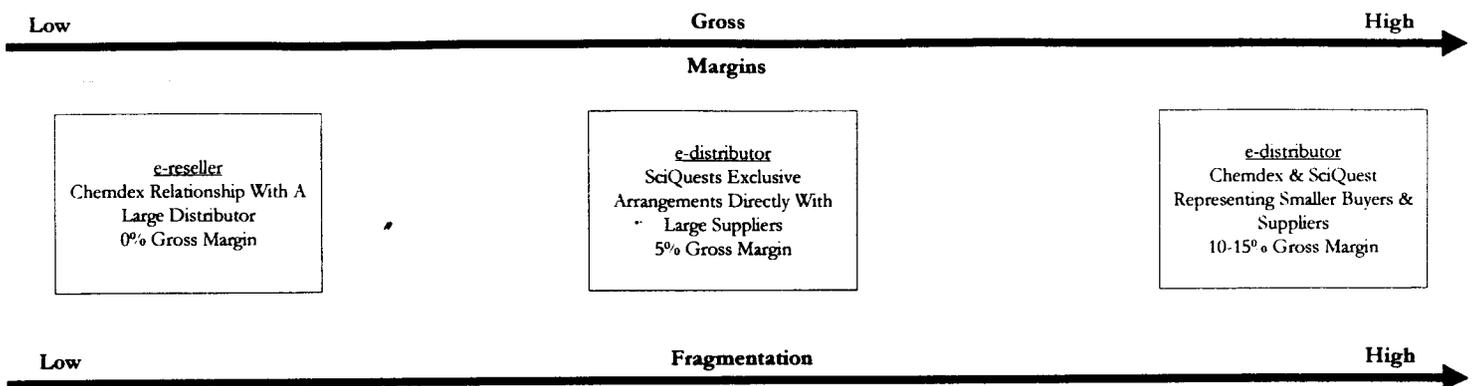
**Overview of SciQuest.** SciQuest has identified an alternative approach to bringing the efficiencies of the Internet to the scientific products market. It has entered into partnerships with many major suppliers directly in efforts to bring their products directly to the end user. The Company has initially focused on the specialty products category of the overall market by signing exclusive distribution agreements with major suppliers in this space, making SciQuest an e\*distributor. Some of their agreements are with companies like BioWhittaker, Endogen and PE Corp. By partnering directly with the supplier, instead of a distributor, we think Sciquest potentially will have higher gross margins over the long term than Chemdex . This is because the Company acts as a direct conduit linking suppliers to end users while not involving a traditional bricks and mortar distributor. This is what we consider a defensible channel strategy. By establishing these exclusive supplier agreements, SciQuest has created a barrier to entry.

### **Go Where the Margin Is**

Given the background on both the life sciences product market and the two B2B e\*commerce companies, a clear understanding of the difference in gross margins can be formed. The existence of a traditional distributor in the commodity products market shows that there are sufficient product margins available in this particular space. VWR has built a successful distributorship based on the available margins in the commodity products market. The smaller margins in the specialty supplies and laboratory equipment segments is one of the reasons that a traditional distributor has not been able to secure a position in the channel.

These small margins have perhaps precluded a traditional distributor from entering the specialty and instrumentation segment, yet a web-based distributor can possibly carve out a profitable position. This is effectively what SciQuest is doing. It is creating a distributorship where one could not formerly exist. Prior to the web, it was too expensive for a traditional distributor to warehouse these types of goods. A traditional distributor was also prohibited from entering this market because of the complexity of the products in this segment. The web is able to address this issue due to the ease in which product data can be accessed by someone needing specific technical information.

The following illustration shows the direct correlation between channel fragmentation and gross margin. This diagram highlights why it is so important for B2B companies to go where the margin is.



Source: TWP B2B Internet Research

At the low end of the spectrum is the relationship with Chemdex and VWR, a large distributor. Chemdex is not rewarded for linking two existing and major players in the life sciences industry. This relationship is simply intended to generate traction for the Chemdex MarketPlace. There is little to no fragmentation in this segment.

The midpoint in the spectrum represents the exclusive agreements that SciQuest has with major suppliers. These suppliers can sell direct to the end user because of their size relative to the other players in the channel. These major suppliers can afford a sales force that can provide the attention required by the end users of their products. This is why SciQuest is rewarded with a relatively small gross margin. The absence of a traditional distributor in this market segment provides SciQuest with its small margin.

The high end of the spectrum is made up of the business generated by bringing together fragmented suppliers and buyers. These margins are greater because there is greater value being provided by the Internet relative to the other segments. For example, the smaller supplier does not have the critical mass to cover the fixed costs associated with sending a catalog to every end user who is potentially interested in its product. By engaging either SciQuest or Chemdex, this small supplier no longer is required to bulk mail a large amount of catalogs. The smaller the buyer and seller, the larger the per unit economic cost savings are of engaging an Internet e\*marketplace.

Since SciQuest is inserting themselves in a channel where there is no distributor, the company can form direct relations with various suppliers. This is in contrast to the Chemdex position of partnering with traditional distributors. We believe SciQuest's market positioning will provide the real value to the end user. As SciQuest becomes known to provide a direct link between the life sciences supplier and end user, critical mass will potentially begin to take effect. As this occurs, SciQuest's position in the value chain will become more and more established due to the new value added service provided by the company.

Overall, SciQuest is in fact a distributor, seeking to develop and grow its relationships with many different suppliers directly. When considering this prospect from the Internet perspective, SciQuest could be called an e\*distributor. The value proposition offered by the firm is very similar to that of Chemdex, which is trying to make the buying and selling of scientific products easier and more efficient from all players point of view. The

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difference lies in the fact that SciQuest goes to the suppliers while Chemdex goes to the distributors.

SciQuest is linking itself directly to the source of the goods while Chemdex is positioning itself as an appendage to an existing player in the market. It is this difference that causes the long run profitability outlook of both companies to diverge. Chemdex has put itself in a position where a company similar to SciQuest could potentially circumvent any distribution agreements the company has by going direct to VWR's suppliers. This would leave Chemdex as nothing more than the web enabled arm of an existing distributor, with negligible margins.

We believe it is vital that a company have a defensible channel strategy. Consideration must be given as to why the channel has evolved the way in which it has. There are distributors in the commodity products segment because of the nature of the products flowing through that segment. This is also based on the fact that there is insufficient margin in the specialty supplies and laboratory instrumentation segment for a bricks and mortar distributor to survive. These margins do not, however preclude an e-commerce play from creating value added service in this otherwise tight space. The question then is, can Chemdex provide a substantial savings to the end user by teaming up with existing bricks and mortar distributors? Or is it perhaps better to connect the end user directly to the supplier such as SciQuest is doing? We believe that it is better to go directly to the supplier in order to provide a tangible value added service that was not previously available, not only in terms of convenience to the end user, but also at a substantial cost savings.

# Appendix F

## Hypothetical Internet Valuation - BASE CASE

In thousands

|                                  | 2000    | 2001    | 2002     | 2003     | 2004     | 2005     | 2006     | 2007     | 2008    | 2009    | 2010    |         |
|----------------------------------|---------|---------|----------|----------|----------|----------|----------|----------|---------|---------|---------|---------|
| Free Cash Flow                   | (\$5)   | (\$4)   | (\$3)    | (\$2)    | (\$1)    | \$0      | \$1      | \$2      | \$3     | \$4     | \$5     | \$5     |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$9.0) | (\$12.0) | (\$14.0) | (\$15.0) | (\$15.0) | (\$14.0) | (\$12.0) | (\$9.0) | (\$5.0) | \$0.0   |         |
| 1.00                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         | 50.0 x  |         |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | (7)     |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 14      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 7       |
| Free Cash Flow                   | (\$5)   | (\$4)   | (\$3)    | (\$2)    | (\$1)    | \$1      | \$2      | \$3      | \$4     | \$5     | \$6     | \$6     |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$8.9) | (\$11.7) | (\$13.3) | (\$13.9) | (\$13.3) | (\$11.7) | (\$8.9)  | (\$5.0) | \$0.0   | \$6.1   | \$6.1   |
| 1.11                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | (6)     |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 17      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 11      |
| Free Cash Flow                   | (\$5)   | (\$4)   | (\$3)    | (\$1)    | \$0      | \$1      | \$3      | \$4      | \$5     | \$6     | \$8     | \$8     |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$8.8) | (\$11.3) | (\$12.5) | (\$12.5) | (\$11.3) | (\$8.8)  | (\$5.0)  | \$0.0   | \$6.3   | \$13.8  | \$13.8  |
| 1.25                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | (5)     |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 21      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 16      |
| Free Cash Flow                   | (\$5)   | (\$4)   | (\$2)    | (\$1)    | \$1      | \$2      | \$4      | \$5      | \$6     | \$8     | \$9     | \$9     |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$8.6) | (\$10.7) | (\$11.4) | (\$10.7) | (\$8.6)  | (\$5.0)  | \$0.0    | \$6.4   | \$14.3  | \$23.6  | \$23.6  |
| 1.43                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | (4)     |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 26      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 22      |
| Free Cash Flow                   | (\$5)   | (\$3)   | (\$2)    | \$0      | \$2      | \$3      | \$5      | \$7      | \$8     | \$10    | \$12    | \$12    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$8.3) | (\$10.0) | (\$10.0) | (\$8.3)  | (\$5.0)  | \$0.0    | \$6.7    | \$15.0  | \$25.0  | \$36.7  | \$36.7  |
| 1.67                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | (2)     |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 33      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 31      |
| Free Cash Flow                   | (\$5)   | (\$3)   | (\$1)    | \$1      | \$3      | \$5      | \$7      | \$9      | \$11    | \$13    | \$15    | \$15    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$8.0) | (\$9.0)  | (\$8.0)  | (\$5.0)  | \$0.0    | \$7.0    | \$16.0   | \$27.0  | \$40.0  | \$55.0  | \$55.0  |
| 2.00                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | 1       |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 42      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 43      |
| Free Cash Flow                   | (\$5)   | (\$3)   | \$0      | \$3      | \$5      | \$8      | \$10     | \$13     | \$15    | \$18    | \$20    | \$20    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$7.5) | (\$7.5)  | (\$5.0)  | \$0.0    | \$7.5    | \$17.5   | \$30.0   | \$45.0  | \$62.5  | \$82.5  | \$82.5  |
| 2.50                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | 5       |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 56      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 61      |
| Free Cash Flow                   | (\$5)   | (\$2)   | \$2      | \$5      | \$8      | \$12     | \$15     | \$18     | \$22    | \$25    | \$28    | \$28    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$6.7) | (\$5.0)  | \$0.0    | \$8.3    | \$20.0   | \$35.0   | \$53.3   | \$75.0  | \$100.0 | \$128.3 | \$128.3 |
| 3.33                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | 12      |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 79      |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 91      |
| Free Cash Flow                   | (\$5)   | \$0     | \$5      | \$10     | \$15     | \$20     | \$25     | \$30     | \$35    | \$40    | \$45    | \$45    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | (\$5.0) | \$0.0    | \$10.0   | \$25.0   | \$45.0   | \$70.0   | \$100.0  | \$135.0 | \$175.0 | \$220.0 | \$220.0 |
| 5.00                             |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | 26      |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 126     |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 152     |
| Free Cash Flow                   | (\$5)   | \$5     | \$15     | \$25     | \$35     | \$45     | \$55     | \$65     | \$75    | \$85    | \$95    | \$95    |
| Cumulative Free Cash Flow/(Burn) | (\$5.0) | \$0.0   | \$15.0   | \$40.0   | \$75.0   | \$120.0  | \$175.0  | \$240.0  | \$315.0 | \$400.0 | \$495.0 | \$495.0 |
| 10.00                            |         |         |          |          |          |          |          |          |         |         |         |         |
|                                  |         |         |          |          |          |          |          |          |         |         |         | 50.0 x  |
| Discount Rate of 30.0%           |         |         |          |          |          |          |          |          |         |         |         | 30.0%   |
| PV of Cash Flows                 |         |         |          |          |          |          |          |          |         |         |         | 69      |
| PV of Terminal Value             |         |         |          |          |          |          |          |          |         |         |         | 265     |
| Aggregate Value                  |         |         |          |          |          |          |          |          |         |         |         | 334     |

Source: TWP B2B Internet Group

**Hypothetical Internet Valuation - NPV Neutralized Case**

In thousands

|                                 | 2000  | 2001    | 2002    | 2003     | 2004     | 2005     | 2006     | 2007     | 2008     | 2009    | 2010    |         |            |
|---------------------------------|-------|---------|---------|----------|----------|----------|----------|----------|----------|---------|---------|---------|------------|
| Free Cash Flow                  |       | (\$5)   | (\$4)   | (\$3)    | (\$2)    | (\$1)    | \$0      | \$1      | \$2      | \$3     | \$4     | \$120   | \$5 old    |
| Cumulative Free Cash Flow(Burn) | 1.00  | (\$5.0) | (\$9.0) | (\$12.0) | (\$14.0) | (\$15.0) | (\$15.0) | (\$14.0) | (\$12.0) | (\$9.0) | (\$5.0) | \$115.0 | \$120 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 115     | \$115 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 50.0 x  | 2301%      |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | (1)     | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 335     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$4)   | (\$3)    | (\$2)    | (\$1)    | \$1      | \$2      | \$3      | \$4     | \$61    | \$118   | \$11 old   |
| Cumulative Free Cash Flow(Burn) | 1.11  | (\$5.0) | (\$9.9) | (\$11.7) | (\$13.3) | (\$13.9) | (\$13.3) | (\$11.7) | (\$8.9)  | (\$5.0) | \$56.1  | \$174.4 | \$179 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 56      | \$168 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 50.0 x  | 1514%      |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 4       | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 330     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$4)   | (\$3)    | (\$1)    | \$0      | \$1      | \$3      | \$4      | \$41    | \$79    | \$116   | \$19 old   |
| Cumulative Free Cash Flow(Burn) | 1.25  | (\$5.0) | (\$8.8) | (\$11.3) | (\$12.5) | (\$12.5) | (\$11.3) | (\$8.8)  | (\$5.0)  | \$36.3  | \$115.0 | \$231.3 | \$236 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 36      | \$218 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 36      | 1180%      |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 10      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 324     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$4)   | (\$2)    | (\$1)    | \$1      | \$2      | \$4      | \$31     | \$59    | \$98    | \$114   | \$29 old   |
| Cumulative Free Cash Flow(Burn) | 1.43  | (\$5.0) | (\$8.6) | (\$10.7) | (\$11.4) | (\$10.7) | (\$8.6)  | (\$5.0)  | \$26.2   | \$64.9  | \$171.3 | \$285.3 | \$290 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 26      | \$262 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 26      | 916%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 18      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 318     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$3)   | (\$2)    | \$0      | \$2      | \$3      | \$25     | \$47     | \$68    | \$90    | \$111   | \$42 old   |
| Cumulative Free Cash Flow(Burn) | 1.67  | (\$5.0) | (\$8.3) | (\$10.0) | (\$10.0) | (\$8.3)  | (\$6.0)  | \$19.9   | \$66.5   | \$134.6 | \$224.3 | \$336.3 | \$341 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 20      | \$299 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 20      | 718%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 23      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 311     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$3)   | (\$1)    | \$1      | \$3      | \$21     | \$39     | \$56     | \$73    | \$91    | \$108   | \$80 old   |
| Cumulative Free Cash Flow(Burn) | 2.00  | (\$5.0) | (\$8.0) | (\$9.0)  | (\$8.0)  | (\$5.0)  | \$15.6   | \$53.7   | \$109.3  | \$182.5 | \$273.3 | \$381.6 | \$387 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 16      | \$327 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 16      | 544%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 32      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 302     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$3)   | \$0      | \$3      | \$17     | \$32     | \$46     | \$61     | \$76    | \$90    | \$105   | \$88 old   |
| Cumulative Free Cash Flow(Burn) | 2.50  | (\$5.0) | (\$7.5) | (\$7.5)  | (\$5.0)  | \$12.1   | \$43.9   | \$90.3   | \$151.4  | \$227.1 | \$317.4 | \$422.3 | \$427 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 12      | \$340 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 12      | 368%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 41      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 293     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | (\$2)   | \$2      | \$14     | \$27     | \$39     | \$51     | \$64     | \$76    | \$89    | \$101   | \$133 old  |
| Cumulative Free Cash Flow(Burn) | 3.33  | (\$5.0) | (\$6.7) | (\$5.0)  | \$9.1    | \$35.7   | \$74.7   | \$126.2  | \$190.1  | \$266.5 | \$355.3 | \$456.6 | \$482 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 9       | \$328 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 9       | 248%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 51      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 283     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | \$0     | \$11     | \$22     | \$33     | \$43     | \$54     | \$65     | \$76    | \$87    | \$98    | \$225 old  |
| Cumulative Free Cash Flow(Burn) | 5.00  | (\$5.0) | (\$5.0) | \$5.8    | \$27.5   | \$60.0   | \$103.4  | \$157.5  | \$222.6  | \$298.4 | \$385.1 | \$482.6 | \$488 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 6       | \$263 diff |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 6       | 117%       |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 82      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 272     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |
| Free Cash Flow                  |       | (\$5)   | \$5     | \$15     | \$25     | \$35     | \$45     | \$55     | \$65     | \$75    | \$85    | \$95    | \$500 old  |
| Cumulative Free Cash Flow(Burn) | 10.00 | (\$5.0) | \$0.0   | \$15.0   | \$40.0   | \$75.0   | \$120.0  | \$175.0  | \$240.0  | \$315.0 | \$400.0 | \$495.0 | \$500 new  |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 0       | \$0 diff   |
|                                 |       |         |         |          |          |          |          |          |          |         |         | 0       | 0%         |
| Discount Rate of 30.0%          |       |         |         |          |          |          |          |          |          |         |         |         |            |
| PV of Cash Flows                |       |         |         |          |          |          |          |          |          |         |         | 89      | 30.0%      |
| PV of Terminal Value            |       |         |         |          |          |          |          |          |          |         |         | 265     |            |
| Aggregate Value                 |       |         |         |          |          |          |          |          |          |         |         | 334     |            |

Source: TWP B2B Internet Group