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Emerging E-Business Methods for Supply Chain Management
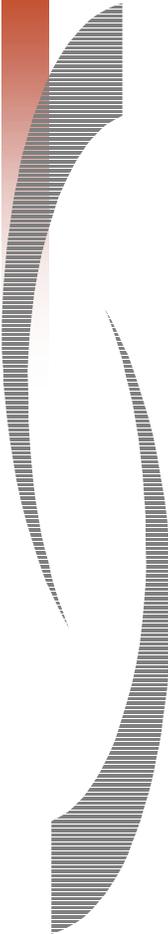
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The Extended Enterprise

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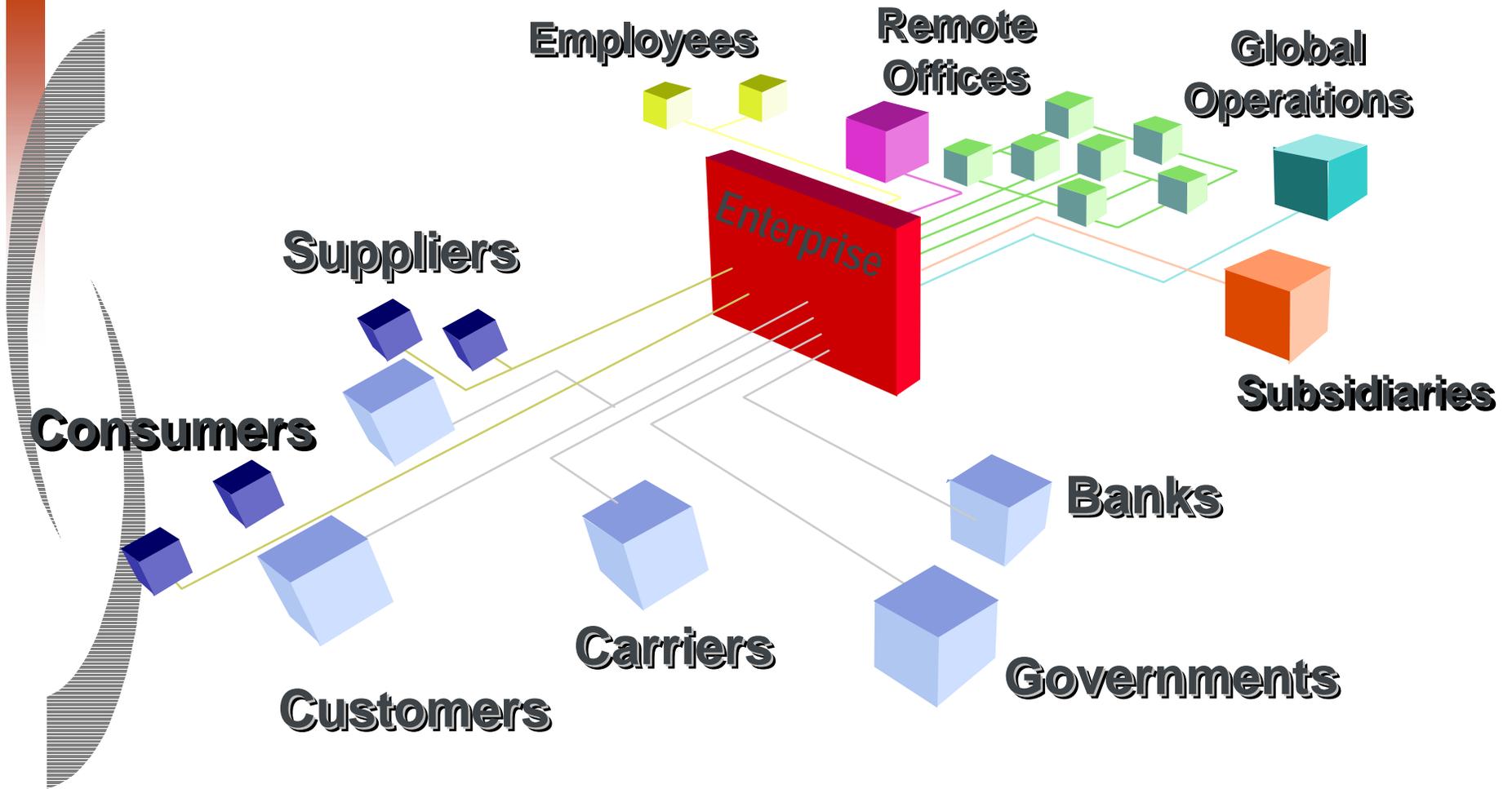
Extranet Trends

Filling the Gaps in "Old Fashioned" EC

Extranet INITIATIVES

Collaborative Interactive Applications

Channel Enablement, Expansion & Management

B2B & B2C Buying & Selling

Cost Reduction

Supply Chain Management

Real-Time Product Collaboration

Extending the Supply Chain to MSEs

Open New Markets

Industry Group Integration (e.g., ANX)

Procurement Efficiencies

Enhanced Customer Service

Communication Efficiencies

Strategic Sourcing

Information Publishing

Document Collaboration
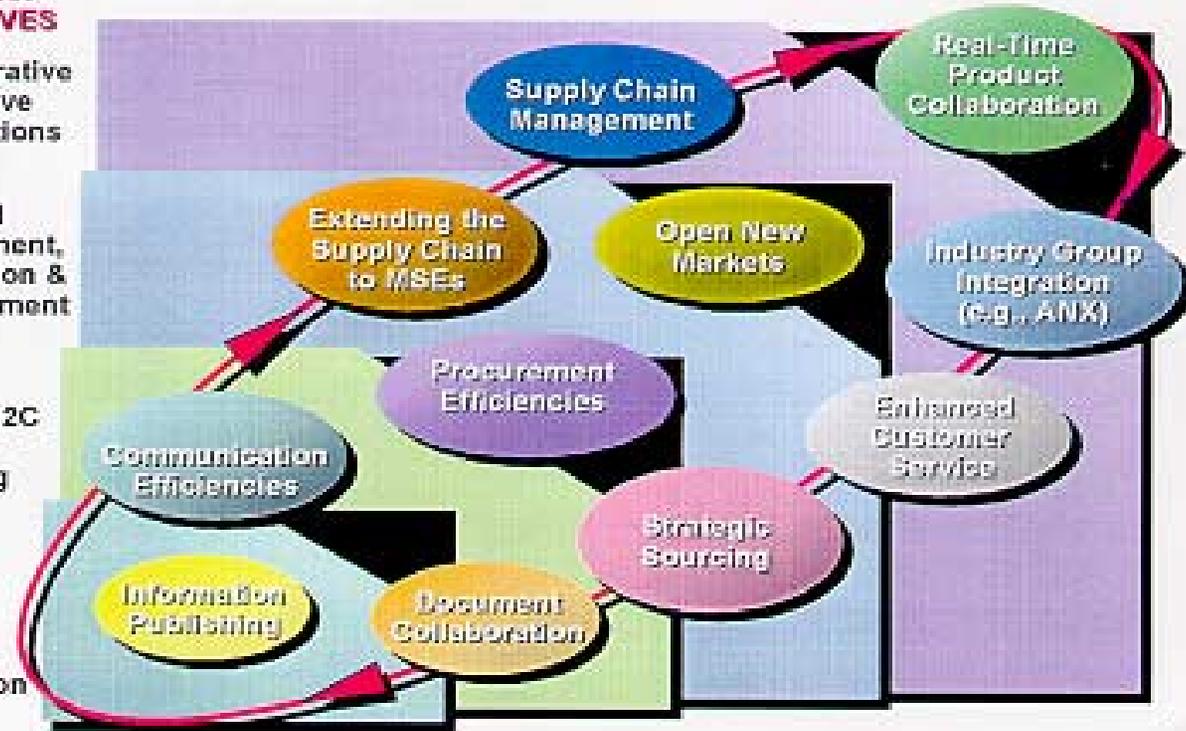
1998 Tactical ———————→ Strategic 2003

Source: GartnerGroup

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Supply Chained

- **A study of 861 firms over 11 years indicates any supply-chain glitch can hammer a company's stock value.   On average, the stock tumbles 9% after a problem is announced.**

- **Over six months, the stock can fall 20%.**

- **On average, the market cap drops $120M per company.**

  Source: Georgia Institute of Technology, Atlanta

The extended enterprise contains:

- Traditional enterprise resource planning (ERP) package as backbone

- Customer facing systems under the umbrella of Customer Relationship management (CRM)

- Supplier facing systems under Supply Chain Management (SCM)

- The complete connectivity between SCM and CRM will manifest itself into a complete "value chain".

Supply Chain Management is About . . .

- Efficiently moving goods from the raw materials stage through to the end user

- Outsourcing inefficient processes

- Eliminating "stack and admire" inventory

- Shortening cycle time

- Shifting from stocks to flows within the chain

- Improving information flows and customer service

Supply Chain

Customer

Transportation
- transportation management system

E2E D-Business Integration

- Online Ordering - Online Tracking - Status & Account Management

Management Control
- visual messages
- common-sense throughput
- visual EIS
- report writer
- customer service impact

- Electronic Data Interchange - Trading Exchange Integration

Front Office
- digital relationship management
- sales forecasting
- quotes & estimates
- order entry
- advanced planning & scheduling
- vendor management

Warehouse
- distribution management
- automated material tracking system
- return material authorization
- interbranch authorization
- shipping

Plant
- shop floor control
- finite "what if" scheduling
- engineering definition & control
- concurrent scheduling
- job/order status manager
- plant & equipment management
- visual quality
- labor & material bar code
- CAD integration

Manufacturing
- inventory control
- enterprise maintenance
- material planning
- lot and serial traceability
- master production scheduling
- material requirements planning
- dimensional inventory

External Warehouses

Enterprise

Back Office
- accounting
- purchasing
- invoicing
- general ledger
- accounts payable
- accounts receivable
- payroll
- human resources

Suppliers

Parent Company

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Flurry of SCM Attention - Why?
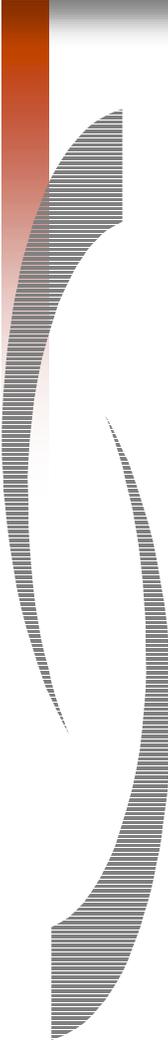
- Global competition/co-opetition

- Need for better supply chain planning

- Collaboration requirements

- E-supply chain emergence

- Need for mass customization

- Better technology available

- Buzzzzzz

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Benefits Of EC For SCM

- Reduced cycle time
- Better inventory management
- Increased productivity
- Reduced costs
- Improved accuracy
- Improved business relationships
- Enhanced customer service
- Increased sales

Supply Chain Management Performance Measure (VIT Corp)
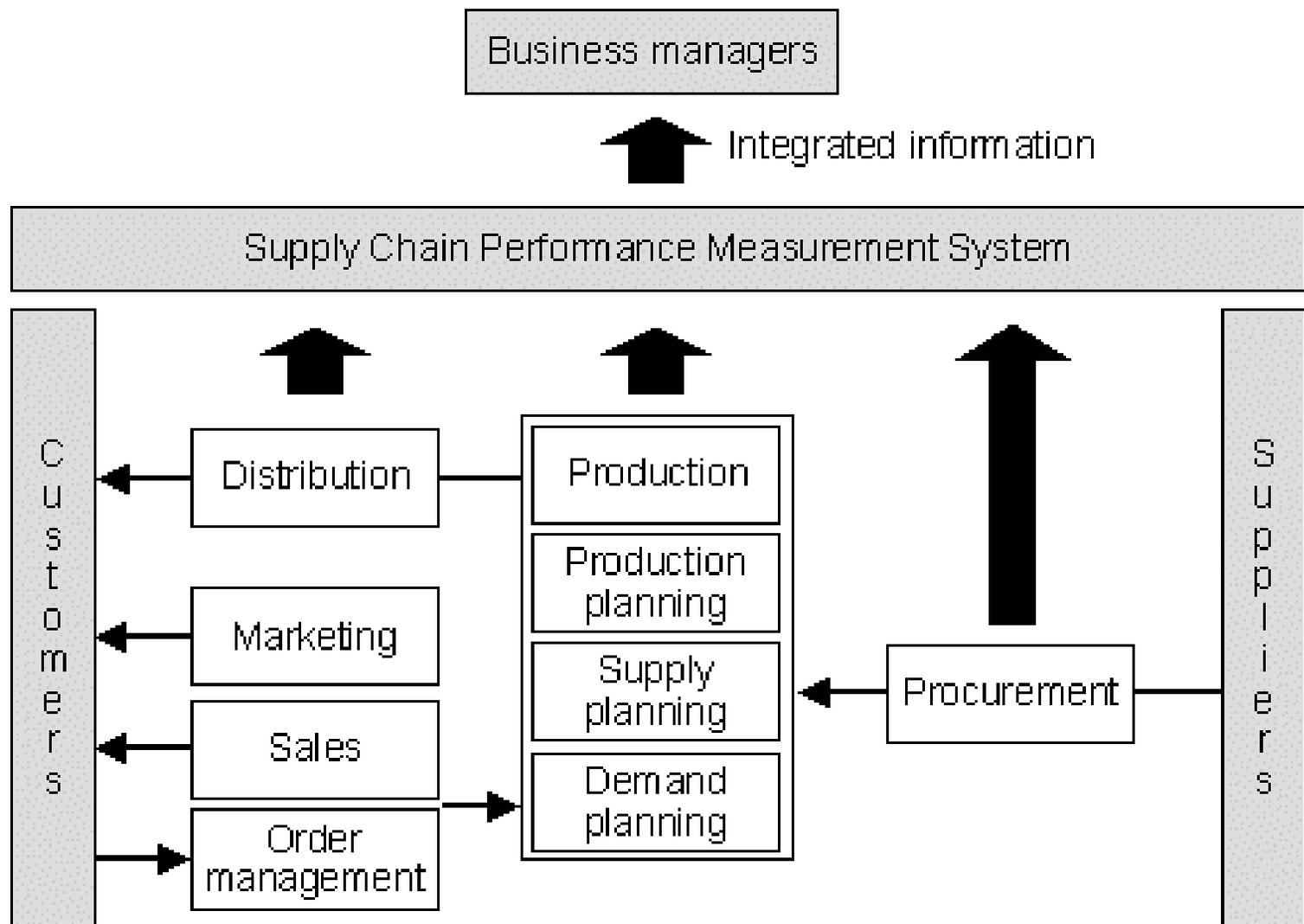
The Supply Chain Advantage:
% of Revenue Spent on Supply Chain Activities

Industry	Best-In-Class	Average
Telecomm	7.42%	14.09%
Semiconductor	5.80%	10.40%
Pharmaceutical	3.87%	9.06%
Packaged Goods	6.52%	11.85%
Computer	7.29%	13.28%
Chemical	6.35%	11.96%
Appliances	8.08%	14.06%
Automotive	4.32%	8.77%
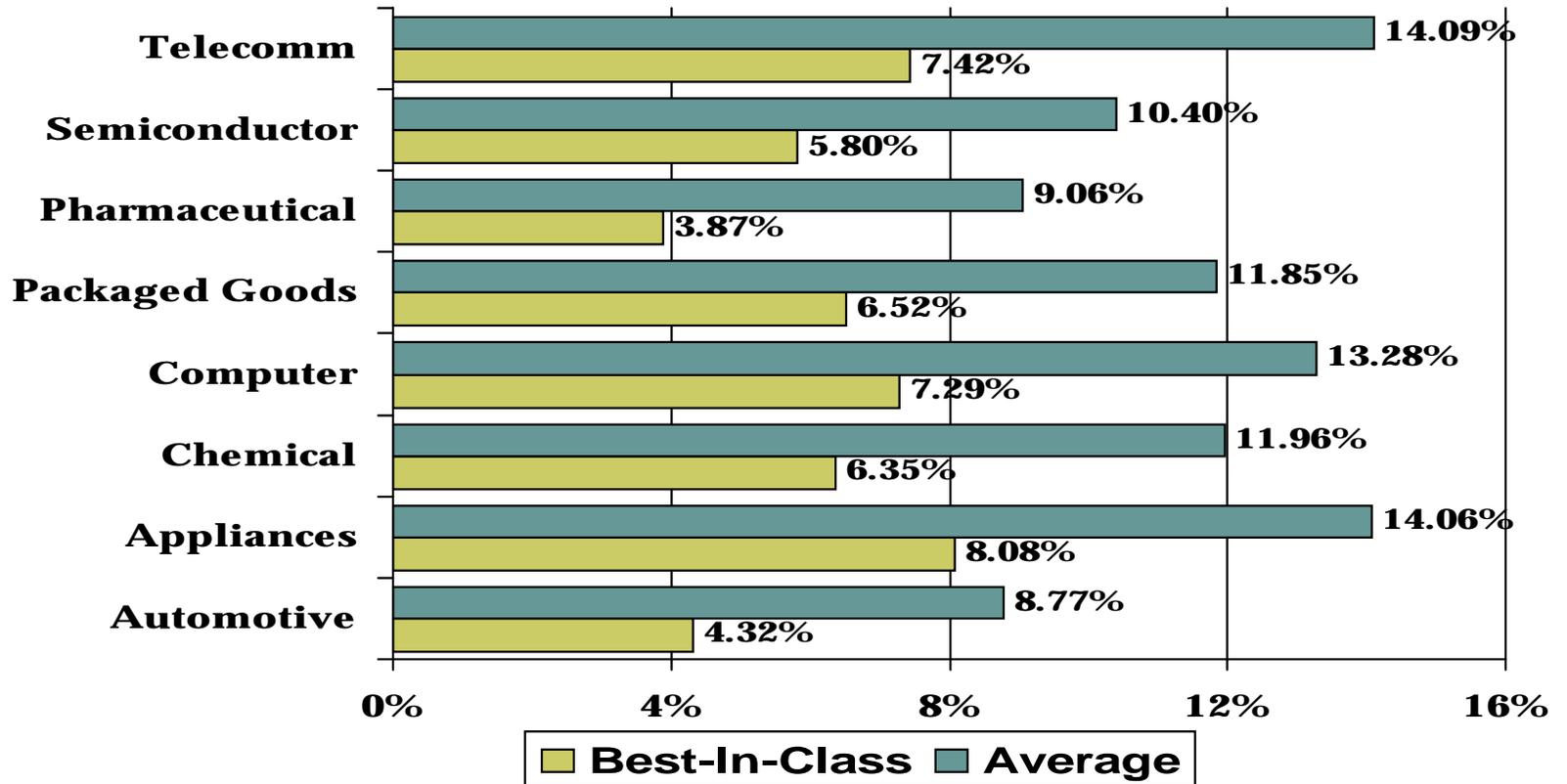
Source: PRTM

Best-In-Class Supply Chain Performance

- Delivery to commit
      (% on time)

- Industry average - 76%
- Best-in-class   - 97%

- Order fill lead time
      (days)

- Industry average- 6-72
- Best-in-class   - 2-13

PRTM Study

Best-In-Class Supply Chain Performance

- Billing accuracy
  - % Error free invoices

- Days sales
  outstanding

- Industry average- 96%
- Best-in-class-   99%

- Industry average- 69
- Best-in-class-   44

PRTM Study

Best-In-Class Supply Chain Performance

- Order management costs (% of Rev)

  - Industry average- 59%
  - Best-in-class- 1.4%

- Cash to cash (days)

 - Industry average- 113
  - Best-in-class - 52

PRTM Study

Result:
(Knowledge Management October 1999)
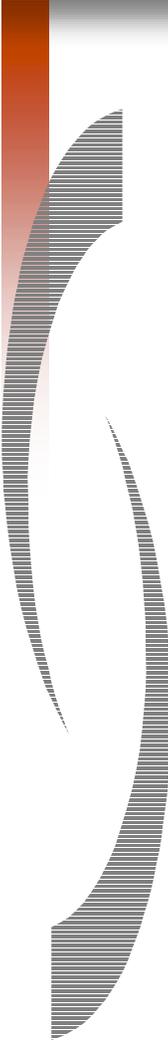
- Prepared organizations harmonizing the supply chain with:
  - product innovation cycles,
  - marketing, and
  - e-business

- were rewarded with lower costs and significant advantage over competitors.

- Unprepared organizations are beginning to feel the squeeze in:
  - slashed profit margins,
  - anemic market share, and
  - plummeting customer satisfaction.

Electronic Implementation of Business Processes

Supply Chain Technology News, 3/2000
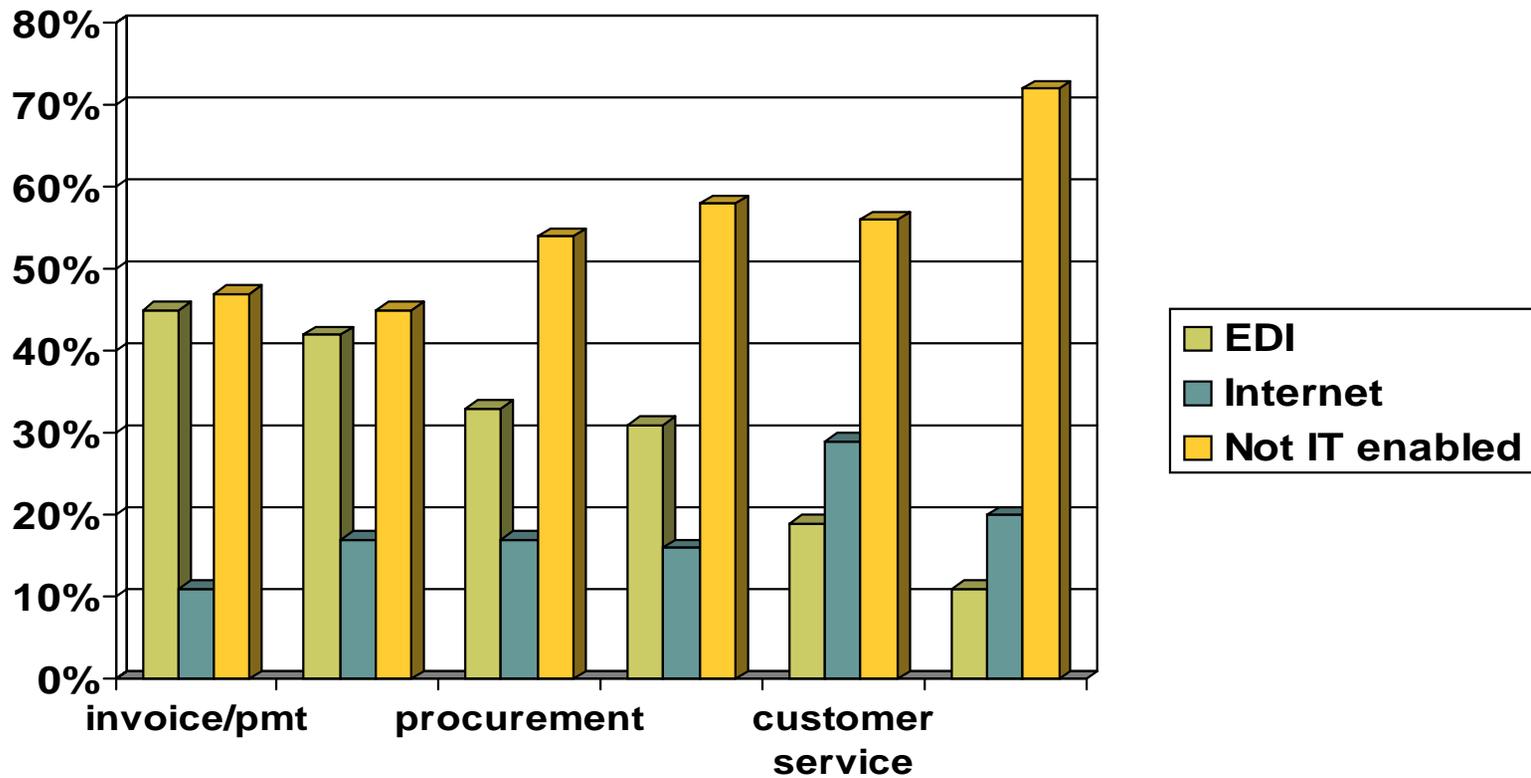
Electronic Procurement Growing

- VISA USA survey showed that 67% of respondents currently engage in electronic purchasing and 85% will in the next 6 months

- 76% use EDI

- 55% order directly from supplier web page

- 36% make orders via intranet

Electronic Old Method of Purchasing Inefficient

- Another VISA survey at the NAPM show revealed that
  - 83% order goods <$5,000 via phone, fax and mail
  - 86% continue to use these methods for >$5,000
  - 73% pay by check for <$5,000
  - 83% pay by check for >$5,000

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Leveraging the Web

- Large companies use ERP software to replenish production supplies automatically

- Non-production supplies can account for 30-60 percent of of a company's material spending

- Paperwork for non-production spending = 80% of purchasing transactions

Leveraging the Web

- Sell-side catalogs
- Buy-side catalogs
- Electronic marketplaces
- Web-based tools

What is an E-Marketplace?

- "An online exchange where organizations and their communities come together to conduct commerce, access content, and collaborate to improve business performance."

Digital Marketplaces

- Horizontal
  - companies across industries
  - primarily maintenance, operations and repair items (MRO)
  - seamless automated purchasing from requisition to invoice payment
  - can aggregate product catalogs from multiple vendors

Digital Marketplaces

- Vertical
  - industry specific
  - on-line catalogs
  - auctions of surplus goods
  - spot market trading
  - Examples
    www.chemconnect.com
    www.metalsite.com
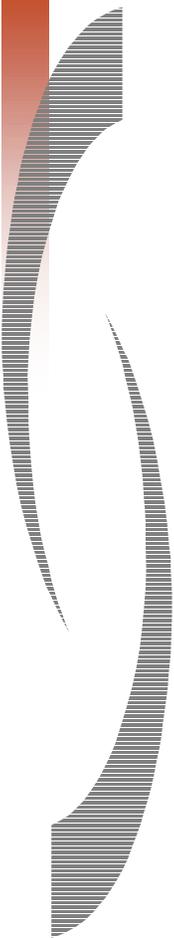
Industry-Leading B2B e-Applications and Services for Enterprises

- Automates procurement across all spend areas

- Streamlines trading between buyers and sellers

- Maximizes trade efficiency across the entire supply chain

- Delivers strategic e-Commerce capabilities in Internet time

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Auction Services

- Real-time bidding functionality with Web-based Interface

- Flexible System Administration with Powerful Reporting Tools

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Types of E-Business Process Integration

- **Enterprise Application Integration**
  - Optimization of internal processes and backend integration

- **Web Application Integration:**
  - Web front end to business backend integration

- **E-Marketplace Integration:**
  - Linking multiple e-marketplaces with existing business backend applications

- **Direct Business Partner Integration**
  - Tight integration with selected key-partners, directly connecting to partner back-end applications (a.ka. Real Time Integration)

E-Business Integration Solutions
E-Business Integration Server

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Firewall

Internet

SYSTEM MANAGEMENT
Common U/I, Tracking, Notification, Monitoring, Audit and Billing

Business Process Modeling

Standards Based Gateway (GENTRAN)

Firewall

E- Marketplace Integration

Web Browser

XML Documents

API

Business Process Integration

B2B SERVER

Profile Server

Data Exchange	B2B Envelopes	Data Enveloping RosettaNet BizTalk ....
Web Extension	Security	SSL, S/MIME, X.509
Application to Application		
Shared Processes	Internet Protocos	HTTP, FTP, SMTP

Secure Repository

E-BUSINESS BROKER

Business Rules & Routing

XML Translation

TRANSACTIONS

Data Warehouse

INTEGRATION ADAPTERS

APPLICATION (ERP, CRM)

TECHNOLOGY (FTP, Database)

MESSAGING (MQ Series)

PROGRAMATIC (Custom)

Secure Data Delivery Gateway (CONNECT)

SYSTEM FRAMEWORK
JAVA, EJB, Component-based, Scaleable, Fault Tolerant, Load Balancing, Transactions

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What Makes This All Work

- GOOD CONTENT !!!

- "Content is king in e-business...Whether content is provided by locally hosted procurement catalogs, directly by suppliers, or by intermediaries such as content resellers or Independent Trading Exchanges (ITEs), its availability, usability, and accuracy is critical."

- AMR Research, May 2000

Content Types

Supplier Product Content:
- Part Numbers
- Descriptions
- Public "List" Pricing
- Unit of Measure

Attachments:
- URLs
- Images
- MSDS
- Spec Sheets

Contract Pricing: Customer, Agreement

3rd Party Catalog Content

Reviews, Ratings, Regulations etc.

Categorization: UN/SPSC, Supplier, Others

Services, Warranty, Logistic information

The Problem

- Buyers need their indirect and direct goods available on-line in a format that can be easily searched and compared

- Suppliers either do not have all their products easily available in electronic form, are not aware of what good e-procurement quality content is, or are not excited about another procurement program.

- You Can't Manage it if you Don't Have it.

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What is Quality Content?

- Short description with searchable keywords and key attributes

Unit	Item Description	Unit Price	Manufacturer	Part Number
CS	Hammermill Copy Plus Copy Paper, 8-1/2" x 11"	$22.95	IBRANDS/HAMMERMILL PAPER	347005

- Expanded descriptions and marketing-oriented information

"Get the most from your high speed copier with this specially designed white paper. Documents printed from all copiers and printers will consistently look their best on this acid-free bond."

What is Quality Content?

- Product picture linked to a single SKU

- *Printed catalog content requires transactional data for electronic commerce*

Unit	Item Description	Unit Price	Manufacturer	Part Number
CS	Hammermill Copy Plus Copy Paper, 8-1/2" x 11"	$22.95	IBRANDS/HAMMERMILL PAPER	347005

Select View: Picture ▼ GO

Get the most from your high-speed copier with this specially designed white paper. Documents printed from all copiers and printers will consistently look their best on this acid-free bond.

Benefits to Buyers
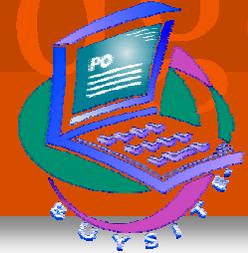
❑ Better and faster purchasing decision

❑ Improved sourcing capabilities

❑ Comparison shopping

❑ Ease of use ("ease of finding")

❑ Reduce costs / time to market

❑ Single content source

High quality, up to date content

Access to content from various sources and marketplaces

Normalized, categorized content in unified view

High quality, parameterized

Subscription to efficiently managed content

Portal based content management approach

Benefits to Suppliers

Improved content presentation - 'differentiation'

> Support supplier branding and search services (e.g. configurators)

Ability to offer enhanced information about products

> Content enhancement service

Dramatically expand sales channel

> Connect once and offer content to multiple marketplaces

Reduce costs for content management

> Publish once and connect once model

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