

The Current State of E-Business



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Introduction



- E-Business is:
 - Business that makes smart use of technology
 - Business made possible by selected technology
- Institutions can be both primitive and advanced in embracing E-Business
- E-Business is first and foremost efficient systems
- WWW based E-Business is a dynamic hydra
 - Cookies, wallets, and branding
 - Auctions, reverse auctions, and collaborative filtering
 - Infomediaries, portals, and vortals

Starting Conclusion

- There are a half dozen categories of players:
 1. Physical support infrastructure (Fed-Ex, Mail Boxes Etc)
 2. Software and hardware infrastructure (Inktomi, CISCO)
 3. End user equipment (DELL)
 4. Internet Service Providers (AOL)
 5. E-Businesses (General Motors, General Electric, McKesson)
 6. E-Services (Ariba, VerticalNet, Yahoo)
 7. E-tailers (Amazon, Ebay, Vehix)
- The lowest numbers are the most profitable
- The highest numbers get the most press
- Number 5 is the most important

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Overview

- Definitions
 - E-Commerce
 - E-Business
- Concepts
 - Being Digital
 - E-Markets
 - The fourth wave
- Forms
 - Business to Business
 - Business to Consumer
 - Peer to Peer
- Technologies
 - Networks
 - Internal Systems
 - Communications Protocols
 - Data Protocols
 - Security
- Conclusions

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Defining E-Commerce: What everyone knows

- “the buying and selling of goods and services on the World Wide Web” (whatis.com)
- “sites created for the purpose of selling goods and services over the Internet, regardless of whether the actual sale takes place on the Internet or via fax, phone or another means provided by the website” (Janice Anne Rohn, Siebel Systems, Inc.)

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Defining E-Commerce Looking for generalization

A dictionary definition

1. Social intercourse: interchange of ideas opinions and sentiments
2. The exchange or buying and selling of commodities on a large scale involving transportation from place to place

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Defining E-Commerce: A business perspectives

Electronic Commerce - A Manager's Guide Kalakota and Whinston

- The delivery of information and services by electronic means (communications perspective)
- The application of technology to business transactions and workflow (business perspective)
- Tools to cut the cost of, and improve the quality of, services (service/customer perspective)
- The buying and selling of products and information on the internet (online perspective)

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Defining E-Business A consolidated perspective

- Electronic commerce is the application of technology to the automation of business transactions
- Electronic business is the transformation of the spectrum of business processes using technology. It includes:
 - Enterprise Resource Planning
 - Supply Chain Management
 - Workflow and document management
 - Process reengineering and knowledge management
 - Web-based processes and customer relations management

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Key Concepts Underlying E-Business

- Atoms versus Bits
- E-markets
- Fourth Wave

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Key Concept: Atoms to Bits

- The use of atoms to hold bits
- The economics of bits
 - PC banking (\$.01)
 - ATM (\$.27)
 - Teller (\$1.07)
- Bit commodities versus atom commodities
 - Singularity of ownership
 - Cost of duplication
 - Impact of usage

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Key Concept Electronic Markets

- The growth of markets
 - Bazaars and port cities
 - Brokered global markets
 - Digital or E-markets
- E-markets are quantitatively and qualitatively different
 - Network externality -- $N*(N-1)/2$
 - Global span
 - Collaborative intelligence for seller and product
 - Brokerless access -- disintermediation

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Key Concept The Fourth Wave

- Toffler identifies three major revolutions, or waves:
 - The agricultural revolution
 - The industrial revolution
 - The information revolution
- Some suggest networks may induce a fourth wave
 - The value chain may become user driven
- Waves have primary, secondary and tertiary effects
 - Cars → roads → suburbs → dysfunctional families
 - steam engines → factories → unions → social alienation

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Categories of E-Business

- **Business to Business (B2B)**
 - Electronic purchase order submission
 - Just in time inventory control agreements
- **Business to Consumer (B2C)**
 - Provision of product information online
 - System for product ordering online
 - Updates, help, and product documentation
- **Peer to Peer (P2P)**
 - On-line auctions
 - Job announcements

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Evolution of E-Businesses

- **E-Businesses emerge in several ways**
 - the expansion of electronic management systems to embrace the supply chain
 - The expansion of internal information systems to public systems of increasing sophistication
 - The resale of either of the above
 - The development of new channel opportunities
 - The development of new products optimized for new channels

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Size of the B2B and B2C Markets

	1998	1999	2000	2001	2003
\$12T Market B2B (BCG)	\$671B \$92B HTML \$579B EDI			(25%)→	\$2.8T 2T HTML 800B EDI
B2B (GG)			\$237B		\$4T
B2B (FR)	\$43B				\$1.3T
\$3T Market B2C (BCG)	\$14.1B	\$33.1B (1.4%)		(2%)→	\$61B
B2C (GG)					\$400B
B2C (FR)					\$108B

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Business to Business (B2B)

- Based on existing EDI/MRP/ERP systems
- B2B efforts are directed toward
 - Reducing procurement and distribution costs
 - Facilitating tighter inventory control
 - Allowing better supply chain management
 - Implementing customer relations management
- Are looking to exploit
 - Client server system interface flexibility
 - Expanded in-place browser capability (XML)

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Business to Business Support

- SAP, Baan, Oracle and others provide the basic structure within which organizations gain better control of their data
- RosettaNet, Oasis-open, and CommerceNet provide the infrastructure for exchange
- CommerceOne, Ariba, i2, and other provide the capability to build marketplaces
- Anticipated growth is expansion to SMEs

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Business to Consumer (B2C)

- Organizations sell a product or service directly to the consumer
 - Complete electronic transactions – software
 - Transaction less product delivery – books
 - Informational shopping – cars
- Spurred by and dependent upon the existence of web protocol

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Peer to Peer (P2P)

- On-line auctions (Ebay averages 1.7 million visitors per day)
 - Timed auctions
 - Reverse auctions
- Collaborative information exchanges
 - Chat rooms
 - News groups

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State of the Technologies

- Networking Technologies
- Internal Systems
- Communications Protocols
- Data Protocols
- Certification and Authentication

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Networks

- Addressing and IPv6
 - Ratio of users to devices
- Network Firewalls (routers and proxies)
 - Provision of security for corporate resources
 - Protocol and domain filtering
 - Message monitoring
- Virtual Private Networks
 - Authenticated membership
 - Directory Services
- Wireless technologies

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Internal Systems

- Common Gateway Interface
- Three tier client server systems
 - Web clients and applets
 - Relational DBMS's
 - Component technologies and application servers
 - ASP, OCX, and DCOM
 - CORBA and Object Request Brokers
 - Servlets, JSP, EJB and Java application server
- Thin clients and component transaction monitors
 - .NET, jxta, and e-speak

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Communication Protocols

- Web protocols (http 1.0 and http 1.1)
 - WebDAV (Web Distributed Authoring and Versioning)
- Dynamic (application specific) protocols
 - DCOM, RPC, and RMI
- Component protocols
 - Naming Services and CTMs
 - NDS, LDAP and JNDI
 - MTS, EJB, and E-speak

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Data Protocols

- EDI
- HTML
- XML
 - Datatypes and Schema
 - XSL and XSLT
 - XPath, XPointer, and XLL
- Component Technology “Interfaces”

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Certification and Authentication

- Encryption
 - DES, single key encryption
 - RSA, dual key encryption
 - SSL (https is automated SSL)
- Authentication
 - Knowledge – Passwords
 - Possession – Smartcards
 - Being – Biometrics (iris, retina, thermal image)
- Certificates and Certificate Authorities

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Preliminary Conclusion

- E-Business is the next step in the evolution of business management using technology
- E-Businesses strive to:
 - Manage large operations with attention to detail both temporally and functionally
 - Reach new customers via e-channels
 - Develop new bit based product forms
 - Develop new communication based services

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The State of E-Business

- E-Business is maturing
 - The revolution is turning to evolution
 - The cost to benefit ratio is decreasing (SMEs)
- The network has achieved critical mass
 - Proctor and Gamble rule
 - The S-curve of technology adoption
- Models are emerging
 - Best practices, branding, and monetarizing

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Final Comment

- If you are looking to invest –
 - look to the guaranteed winners – infrastructure and services to businesses (Fed Ex and AOL)
- If you are in business –
 - understand that e-business is as much or more about logistics than it is about web sites
- If you are a netrepreneur –
 - pay attention to opportunities related to the secondary and tertiary effects (reuniting families)

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