

Business Models

406.306 Management Information Systems

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pressures forcing business changes

- two emerging trends
 - **integration of product and service offerings**
 - e.g., travel package: airlines, hotels, travel agents, tour operators, car rental companies
 - concentration on **core competences**
- companies' success in today's market will depend on their ability to **set up cross-industry partner networks** to provide high-quality, cost-efficient products reflecting customers' needs
- internet and related ITs can reduce coordination costs and transaction costs

business models: 3 existing definitions

- in terms of **participants in a joint business venture**
 - **BM: a method of doing business by which a company can generate revenue to sustain itself**
 - describes **how** the enterprise produces, sells and delivers products and services, thus showing how it delivers value to the customers and how it creates wealth
- in terms of **processes** and **structure** of a business organization
 - **BM: structures** and **processes** in place to operationalize the business strategy
 - describes an architecture for the product, service and information flows, including a description of the various business actors and their roles, a description of the potential benefits, and a description of the sources of revenues
- in terms of how business models are **seen from the perspective of a marketplace**
 - is the company involved in B2B activities, B2C activities or both?
 - which position does the company have in the value chain?
 - which is its value proposition, and which are its target customers?
 - which are the specific revenue models that will generate its various income streams?
 - how is it represented: physical? virtual? mixture?

business model defined

- a descriptive representation of the **planned activities** of an enterprise
- involves
 - **internal** aspects of a business venture
 - type of **relationships** of the enterprise with its external business environment and its effective knowledge regarding these relationships
 - how a company's **information assets** (e.g., IS, BPs, CRM, SCM, ...) are embedded in the business venture
- also defines the potential benefits for the actors involved
- BM is at the center of company's **e-Business plan** which consolidates its purpose and goals to outline all kinds of aspects relating to e-business including: **marketing plan, competition, sales strategy, operations plan, management plan and financial plan**
- cf: business strategies specify **how a business model can be applied** to differentiate a company from its competitors [Elliot, 1999]

example

- Barnes & Noble
 - targeted customers' reading needs are satisfied through the business activities of stocking the store shelves with desirable products at affordable prices



issues in BM development

- value proposition
 - defines how a company's products or services fulfill the needs of customers
- revenue model
 - describes how the company will earn revenue, generate profits and produce a superior return on invested capital
- market opportunity
 - refers to the company's **intended marketplace** and overall potential financial opportunities available to the company
- competitive advantage
 - superior products, lower price, ...
- market strategy
 - plan that a company puts together that details its intended approach to penetrate a new market and attract new customers
- organizational development
- management: most important

elements that need to be defined internally for BM

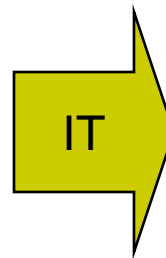
- **product** or **service** that a company delivers to its customers
- sources of **revenue** that indicate how and to what extent a business is economically viable
- **activities** to deliver products or services and realize strategic objectives
- **organization** a company has established to realize its objectives

networked business model

- internet makes new business models possible through its effect on **inter-company relationships**
- networked business model
 - based on an appropriate technology environment to support **electronic linkages in the value chain**
 - needs interoperable systems
- e-Business model: a descriptive representation of the fundamental components of a business that operates partially or completely on the internet

organizational structure

- traditional
 - vertical and hierarchical
 - function-based
 - product-based
 - geography-based
 - matrix-based
 - high coordination costs (costs of sending, storing and retrieving information)
 - seller- or product-driven, aiming to generate value at the of line-of -business level
- new
 - hierarchical, procedural and other new coordination mechanisms wich leads to network based business models
 - team-based structure
 - customer focused: value is generated at the relations level, across products and channels.
 - creation of internet based business models



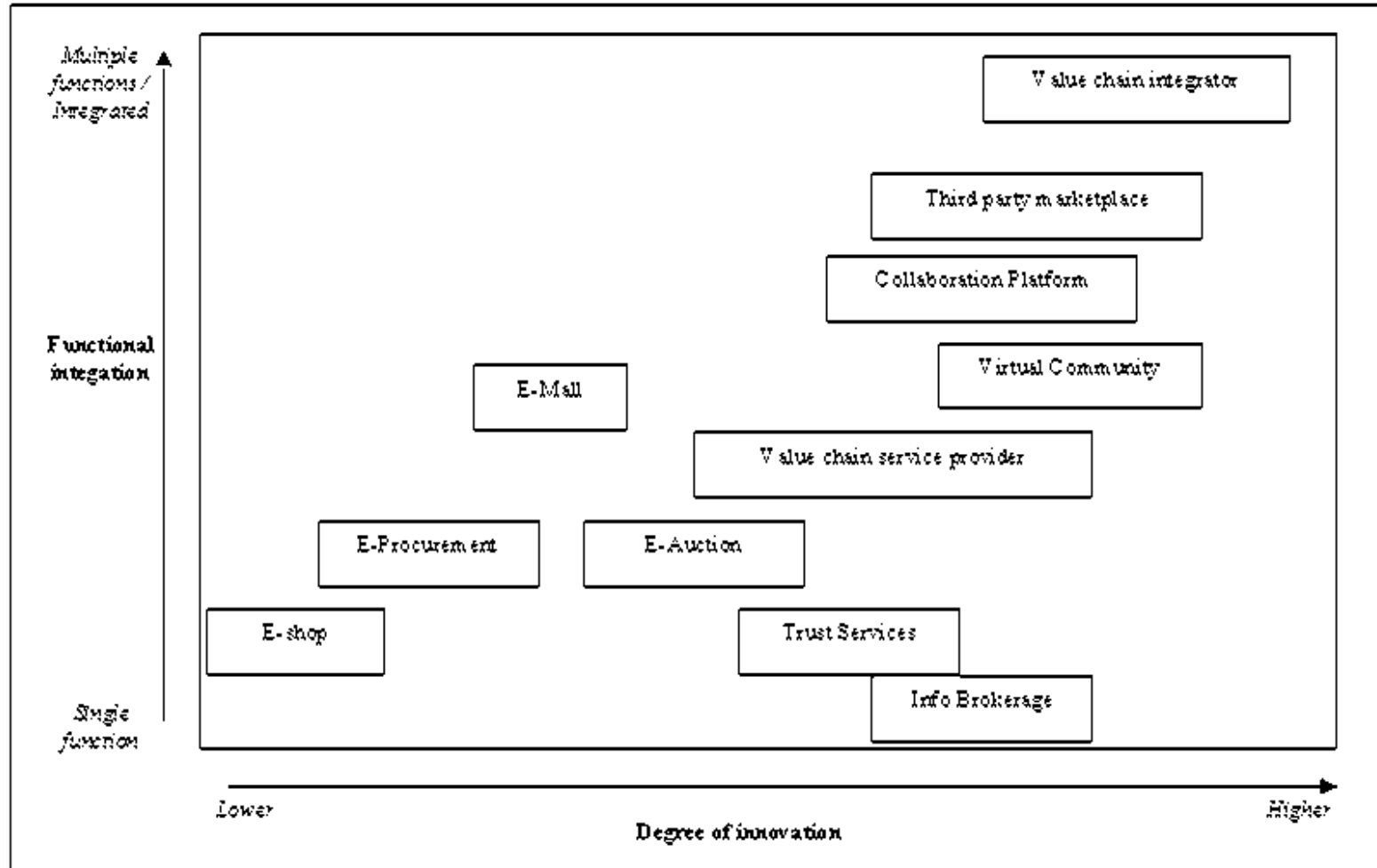
5 BM classifications

- internet-enabled BMs
- value-web BMs
- e-business enabled BMs
- market participant BMs
- cyber-intermediary BMs

internet enabled BMs

- based on analysis of Porter's value chain
- 10 different types of business models that are facilitated by the internet
- classified according to the degree of **innovation** and **functional integration** involved
 - innovation: ranges from basically applying the internet to replace a traditionally way of doing business to more innovative business models
 - functional integration: ranges from business models that encompass one function, such an e-shop, to a business model that fully integrates multiple functions

internet enabled BMs



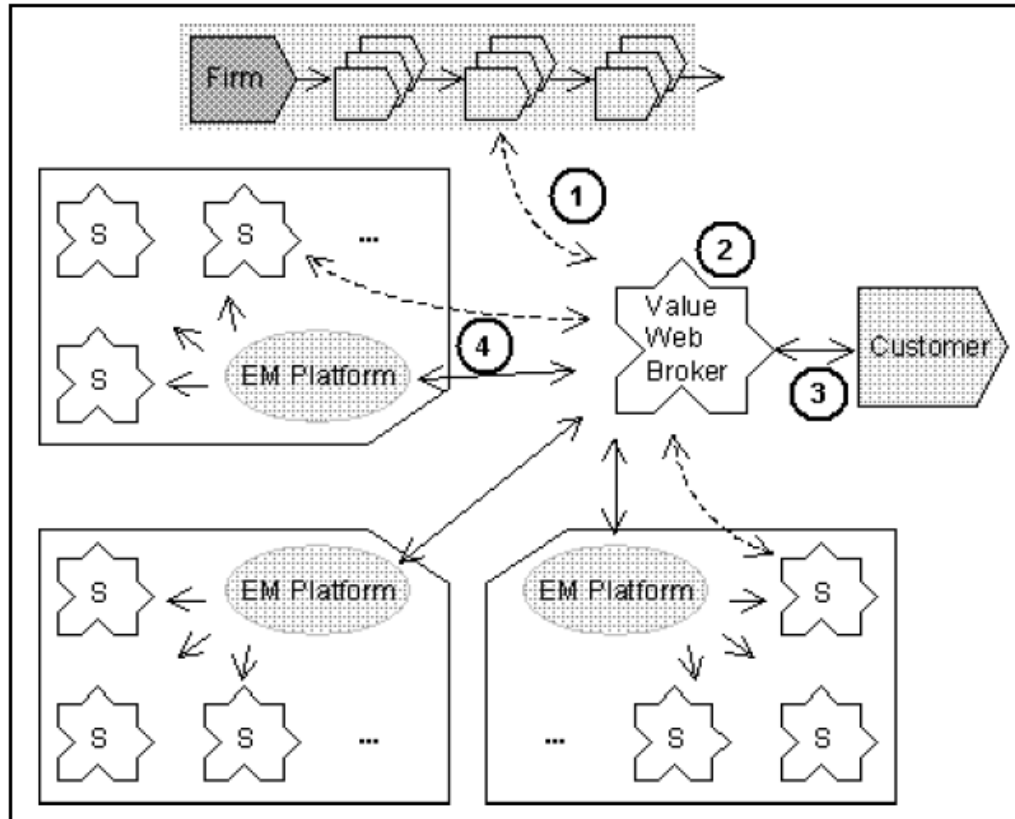
internet enabled business model

- e-shop: website used by a company to give/get information for marketing purposes
- e-procurement: process that involves purchasing goods and services through the web
- e-mall: collections of e-shops under 1 umbrella
- e-auctions: internet bidding mechanisms that can be applied to both B2B and B2C contexts
- 3rd party marketplaces: virtual marketplaces where potential suppliers and buyers interact and transact
- virtual community: offers people with a common interest, such as a profession or expertise, facilities to share information
- collaboration platforms: enable companies and individuals to work together by providing an environment and a set of collaboration tools
- value chain integrators: focus on integrating multiple steps of the value chain
- value chain service providers: specialized in providing specific functions such as electronic payments
- information brokers: provide information and help parties generate trust in one another



value-web business model

- a conception of an emerging form form of a fluid and flexible organization



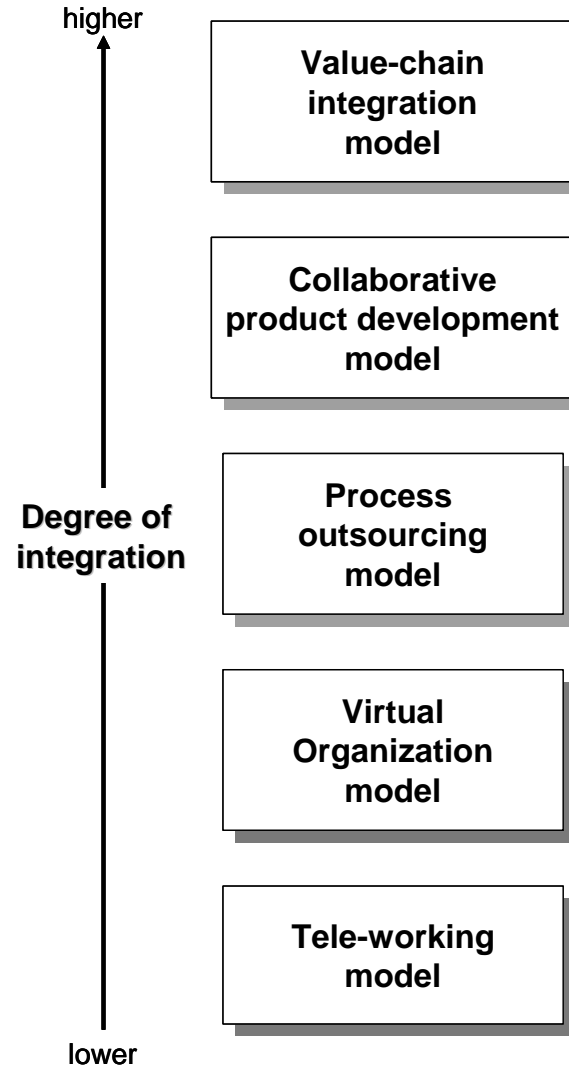
value-web business model

- creative new entrants will cherry-pick among the industry's current value systems.
 - these are traditionally integrated vertically, but newcomers will choose and configure only those value-adding activities that are meaningful for their targeted customer segment
- value web brokers will emerge
 - have the central value web function of coordinator, integrator, and interface
- the broker moves to a final position on the web, with a direct link to its customers and the possibility of establishing loyal relationships
- since brokers are rarely able to provide the entire value proposition by themselves, they make alliance, resorting to 3rd party component suppliers



family of e-business enabled BMs

- especially valid for B2B contexts



e-business enabled BMs

- teleworking model
 - involves large numbers of individuals or groups collaborating with the assistance of networking technologies
- virtual organization model
 - temporary or permanent collection of geographically dispersed individuals, groups, and organizational units who are linked electronically in order to complete a collaborative production process
- process outsourcing model
 - typical candidates: HR, accounting, and logistics
 - e.g., IBM: single human resource center that operates globally
- collaborative product development model
 - coordinate product development activities that involve multiple companies or organizational units
 - requires flexible information systems
- value chain integration model
 - internet technology is used to improve communication and collaboration between all supply chain parties

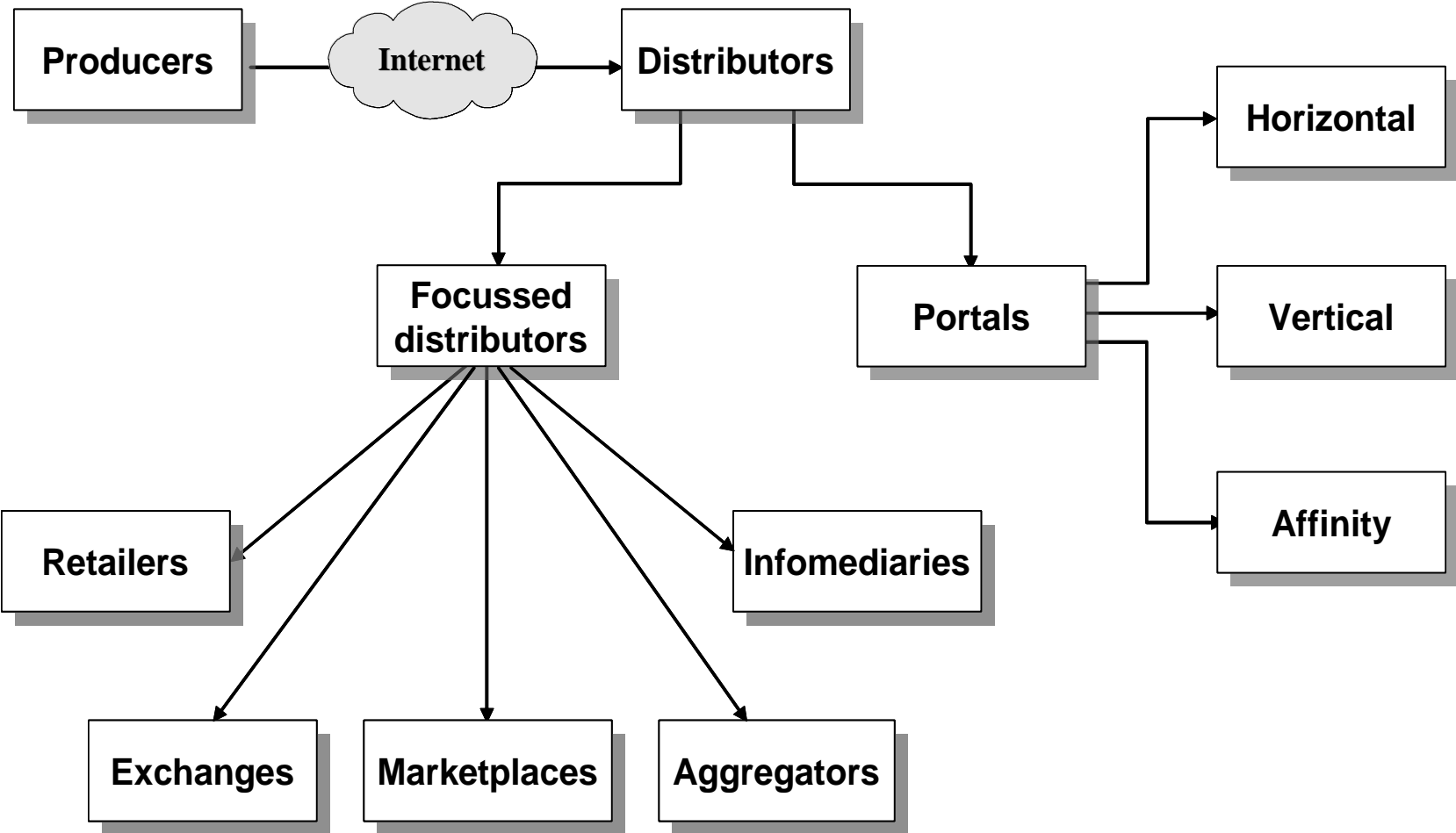


market participant BMs

- identify 2 key roles: producers & distributors
- producers: design and produce products and services
 - manufacturers of physical products
 - less physical products (such as services provisioning, education and consultancy)
- distributors
 - focused distributors
 - retailers: who sell inventory of which they have assumed control online
 - market places: without having physical control over the inventory sold
 - aggregators: who provide information on products or services sold by others in the channel
 - exchanges: who may or may not complete sales online; assume control over inventory
 - infomediaries: a type of aggregator that brings together the sellers and buyers of information-based products
 - portals

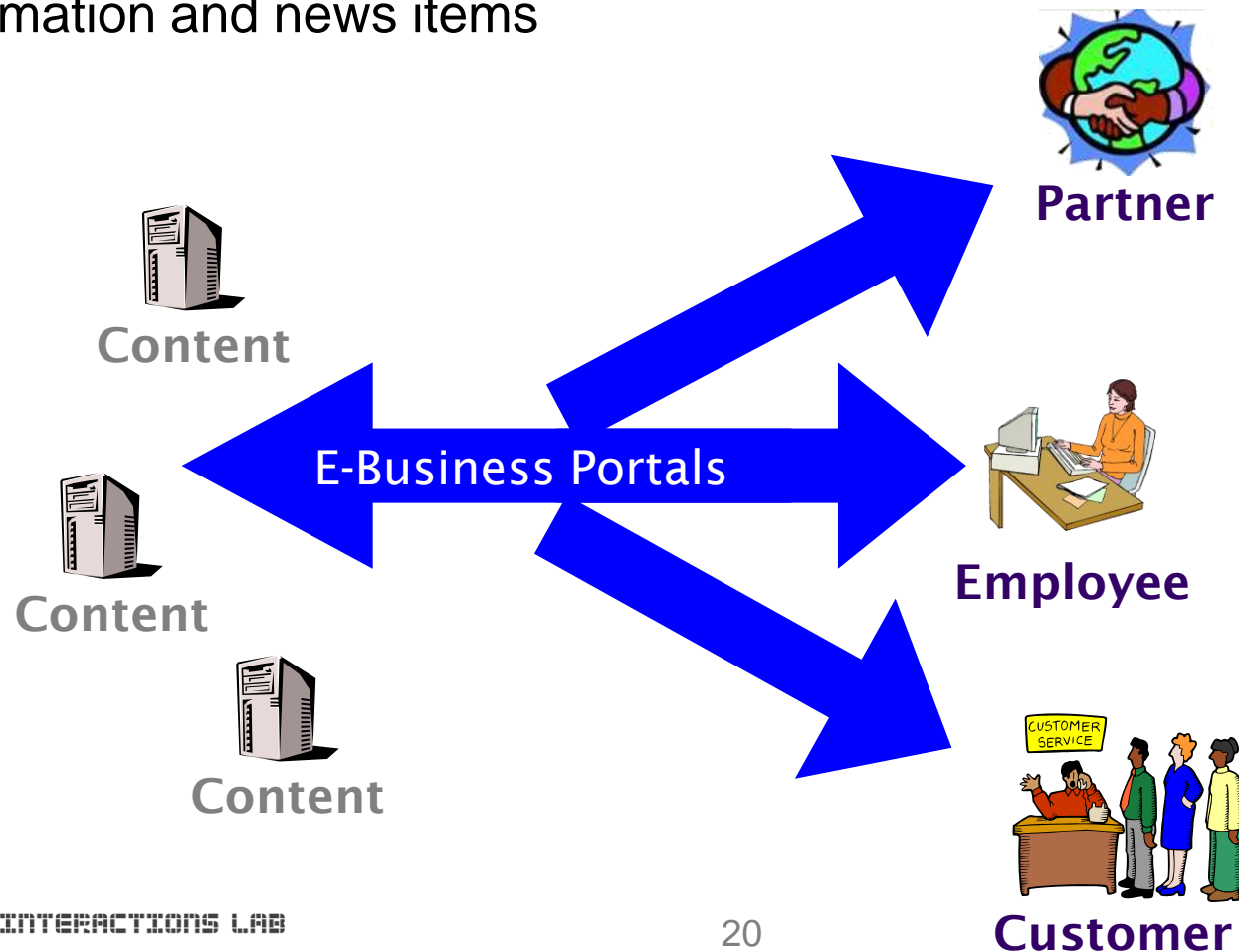


market participant BMs



portals

- websites that act as gateways to **information** and **services**, including e-markets, available on the internet that **customize**, **aggregate**, and **integrate** information for specific constituencies, and provide content management, search, and categorization capabilities, collaboration, community services, and other related services such as personalized information and news items



portals in detail

- portals offer
 - a custom **framework** for presenting web pages and components within each page and organizing information for specific constituencies
 - **personalization** capabilities for individual users
 - a set of **portlets**: the components that integrate with data, application, content, and resources, and actually present information to the portal user
 - a **single sign-on** to the set of applications accessed via the portal
 - other features, such as search and collaboration facilities
- types
 - **horizontal**: originally created to provide search engine services, these portals focus on the entirety of the Internet, not specified audiences, from various industries
 - **vertical**: often referred to as vortals, these sites focus on targeted areas of interest, such as healthcare or financial services.
 - **affinity**: provide highly specific information, much like vertical portals but focused on specific interest groups or market segments



cybermediaries BMs

- trend might just as well be towards an increase in intermediation
- cybermediaries: organizations which operate in **e-markets** to facilitate exchanges between producers and consumers by meeting the needs of both producers and consumers

cybermediaries BMs

- directories: help consumers find producers
- search services: provide users with the capabilities for conducting keyword searches of extensive databases of web sites
- malls: any site that has more than two commercial sites linked to it
- virtual resellers: typically own inventory or sell products directly
- web site evaluators: offers some form of evaluation, which may help to reduce some of the risk to consumers
- publishers: "traffic generators" that offer content of interest to consumers
- auditors: serve the same functions as audience measurement services in traditional media
- forums, fan clubs, and user groups: play a large role in facilitating customer-producer feedback and supporting market research
- financial intermediaries: provide means of making or authorizing payments from buyer to seller
- spot market makers
- barter networks: buyers and sellers exchange goods rather than pay for them with money
- intelligent agents: future answer to user problems with navigation in the chaos of the Internet



thinking bigger: internet BMs

- e-Business
- e-Commerce
- e-Government
- e-Communities
- e-Banking
- e-Engineering
- e-Learning
- e-Research
- e-Service,
- portals
- search engines
- online games
- and, many more ...



examples of e-commerce business models

- name your price: priceline.com
- find the best price: hotwire.com
- dynamic brokering: getthere.com
- affiliate marketing: bn.com
- group purchasing: bazaare.com
- electronic bidding: gegxs.com
- online auctions: ebay.com
- customization and personalization: dell.com
- electronic marketplaces: e-steel.com
- supply chain improvers
- collaborative commerce



case study: e-tailing BMs

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characteristics of goods for online sales

- brand recognition and guarantees
- frequently purchased, inexpensive items
- well-known items with standard specifications
- digital goods
 - for physical distribution, **inventory management** becomes a critical cost issue
 - Napster experience: once had 50 million registered users in 2000
 - custom-publishing music CD sites: angelfire.com, grabware.com
 - online subscription of journals and magazines

Digital Goods		
Digital Good Category	Physical Distribution	Digital Distribution
Software	Boxed, shrink-wrapped	FTP, direct download, e-mailed
Newspapers, Magazines	Home delivery, post (mail)	Display on Web, "e-zines"
Greeting Cards	Retail stores	E-mail, URL link to recipient
Images—Clipart, Graphics	CD-ROM, magazines	Web site display, downloadable
Movies	DVD, VHS, NTSC, PAL	MPEG3, Streaming Video: RealNetwork, AVI, QuickTime, etc.
Music	CD, cassette tape	MP3, WAV, RealAudio downloads

TABLE 9-2



e-tailing business model classification

- based on **the type of sites**
 - direct marketing: disintermediation
 - dell.com, lego.com
 - pure-play e-tailers: no physical sales channel
 - Amazon.com
 - traditional retailers with web sites: multi-channel stores
 - Wal-Mart, Home Depot
- based on **the way that revenues are generated**
 - subscription models
 - transaction fee models
 - advertising-supported models
 - sponsorship models
 - ...



e-Intermediaries (aka e-brokers)

- need for e-Intermediaries arises from
 - high search costs
 - lack of privacy
 - incomplete information
 - e.g. bizrate.com, mysimon.com
 - contracting risk
 - pricing inefficiencies



online purchase decision aids

- **shopping portals**
 - offers **advice** and **ratings** of products or e-tailers
 - revenues from referral fee, selling banner ad space
 - comprehensive portals: activebuyersguide.com, shopping.yahoo.com
 - niche portals: bsilly.com (for kids), shopper.cnet.com (for computers)
- **shopbots**
 - scouts the web for **consumers that specify search criteria**
 - may need to evaluate **dozens of different SKU**
 - general: mysimon.com, pricegrabber.com, dealtime.com
 - specialized: autobytel.com (cars), zdnet.com (computers and SW), office.com
- **business rating** sites
 - rates various e-tailers and online products, based on multiple criteria supplied by user
 - bizrate.com, gomez.com
- **trust verification** sites
 - evaluates and verify the trustworthiness (e.g. privacy) of various e-tailers
 - trustee.com: e-tailers pay TRUSTe for use of **seal**
- **communities** of consumers
 - epinions.com, pricescan.com



case: eToys, amazon, toys r us

- eToys
 - could not meet the delivery requirements due to its **limited logistics capability**
 - sold to kbkids.com
- christmas season in 1999
 - amazon.com miscalculated inventory requirements, and was left with millions of toys it had to write off
 - ToysRUs.com badly bungled the operations side by creating a Web site that was unable to handle large amounts of traffic and shopping orders
 - The result: 1 in 20 children (in US) failed to get presents in time for Christmas from Toys R Us



some lessons learned from the past

- profitability
 - most failed e-tailers lose money on every sale as they try to grow to profitable size
 - amazon.com generates \$5 per book order, but lost about \$7 per sale on non-book sales at the beginning
 - “if it doesn’t make cents, it doesn’t make sense”
- branding
 - an upstart e-tailer spent over 50% of its venture capital funding on one 30-sec TV ad during Superbowl game
 - most online customers come to a Web site from affiliate links, search engines, or personal recommendations
- dynamic design
 - Web sites without dynamic content will bore returning visitors



case study: B2B BMs

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characteristics of B2B EC

- B2B: a transaction conducted electronically **between businesses** over the Internet, extranets, intranets, or private networks
- goal of B2B: to **automate** the trading process
- market size: 10 trillion dollars in 2005 (10% of total on and offline B2B commerce)
- leading items in B2B: chemicals, computing electronics, utilities, agriculture, shipping and warehousing, motor vehicles, petrochemicals, paper and office products, and food
- benefits: elimination of paper-based systems, expedited cycle time, reduced errors, increased employee productivity, reduced costs, increased customer service and partner relationship management



types of B2B

- private (one-to-many) / public (many-to-many) e-marketplace
- direct / indirect (via intermediary)
- spot buying / strategic sourcing
 - spot buying: the purchasing of goods and services at market prices (e.g. stock, oil, sugar)
 - strategic sourcing: based on long-term contracts
- vertical / horizontal marketplace
 - vertical: dealing with one industry segment (e.g. cars)
 - horizontal: product or service for all types of industries (e.g. PCs)



entities of B2B

- selling companies
- buying companies
- e-intermediaries
- pricing and negotiation protocols
- payment services
- logistics providers
- backend integration
- network platforms & communication protocols
- directory
- matching
- security
- ...



B2B BMs

- company-centric models
 - sell-side marketplace (one-to-many)
 - buy-side marketplace (one-from-many)
- exchange models
 - many-to-many
 - e-marketplaces, trading exchanges
- c-commerce
 - more than just selling or buying
 - value-chain integration, value-chain service providers

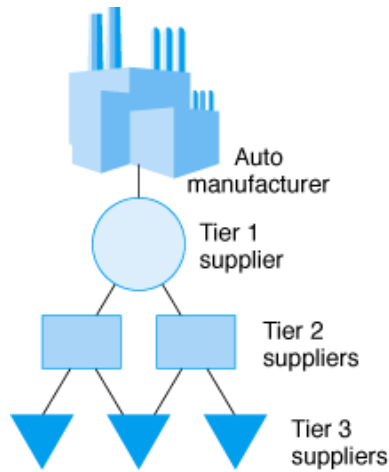
sell-side marketplaces

- single seller (e.g., manufacturers, distributors, wholesalers)
- major methods
 - direct selling from e-commerce site: e.g., Dell, IBM
 - selling via forward auctions: e.g., covinst.com (direct), fairmarket.com (indirect)
 - e.g. eight 75-ton stamping presses from GM
 - one-to-one selling under a long-term contract
 - sell-side intermediaries: <http://www.em.avnet.com/>
- can be successful if
 - the supplier has superb reputation and a sufficient # of loyal biz customers
 - the products are well known
 - the price is not the major purchasing criteria

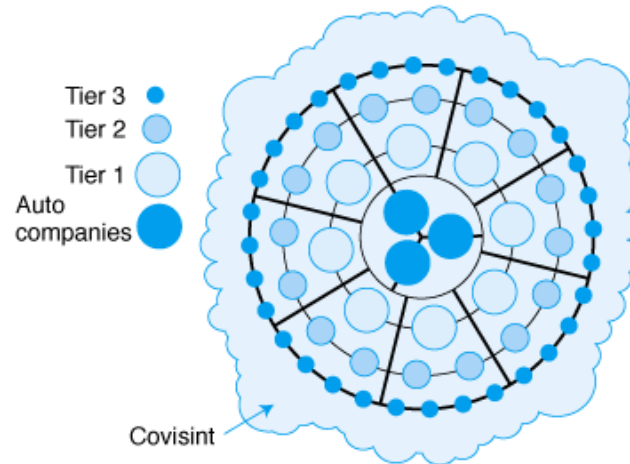


covisint

- GM + Ford + DaimlerChrysler with 30,000 suppliers
 - \$50 billion exchange in transactions
- B2B integrated buy-side marketplace
 - co: connectivity, collaboration, communication, vis: visibility, int: integrated solutions, international scope
- needs to integrate thousands of different software systems into a common network
- result: less need for costly inventory at all levels of the supply chain and an increased ability to respond quickly to market changes



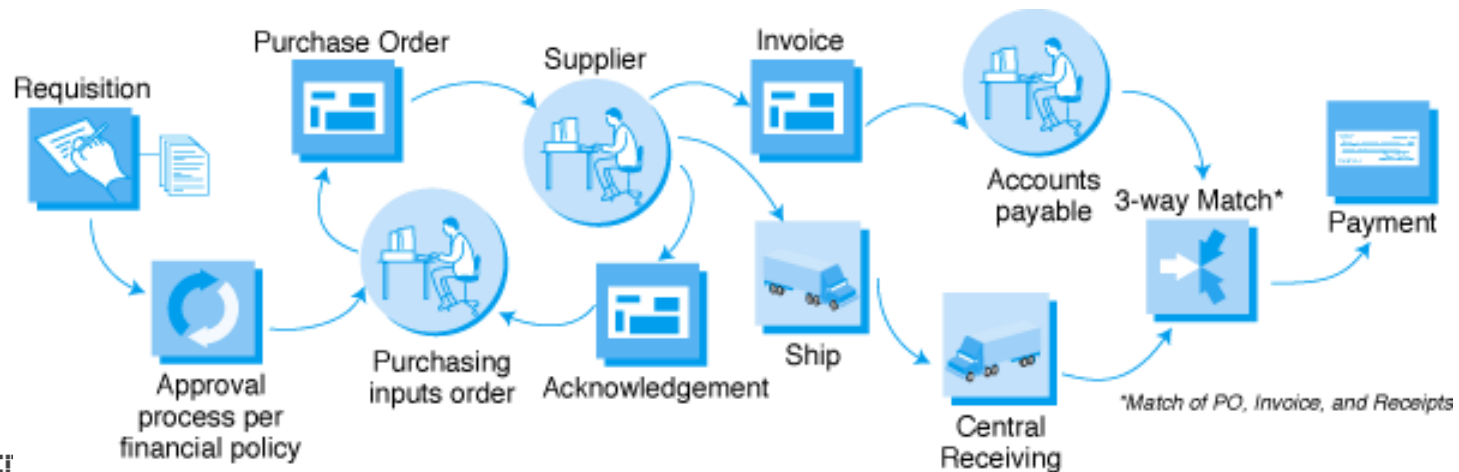
a. Before Covisint a linear supply chain



b. Covisint's hub concept

buy-side marketplaces

- single (but, large) buyer: unique to B2B
- motivation
 - searching for suppliers and products can be very slow and costly
 - buyer has to manually enter the order information to its own IS
- direct materials (production materials)
 - go directly to the manufacture of a product or the creation of a service
 - material use is scheduled
 - non-shelf items
 - purchased in large volume and after negotiation and contracting
- indirect materials (nonproduction materials)
 - used in maintenance, repairs, and operations (MROs)



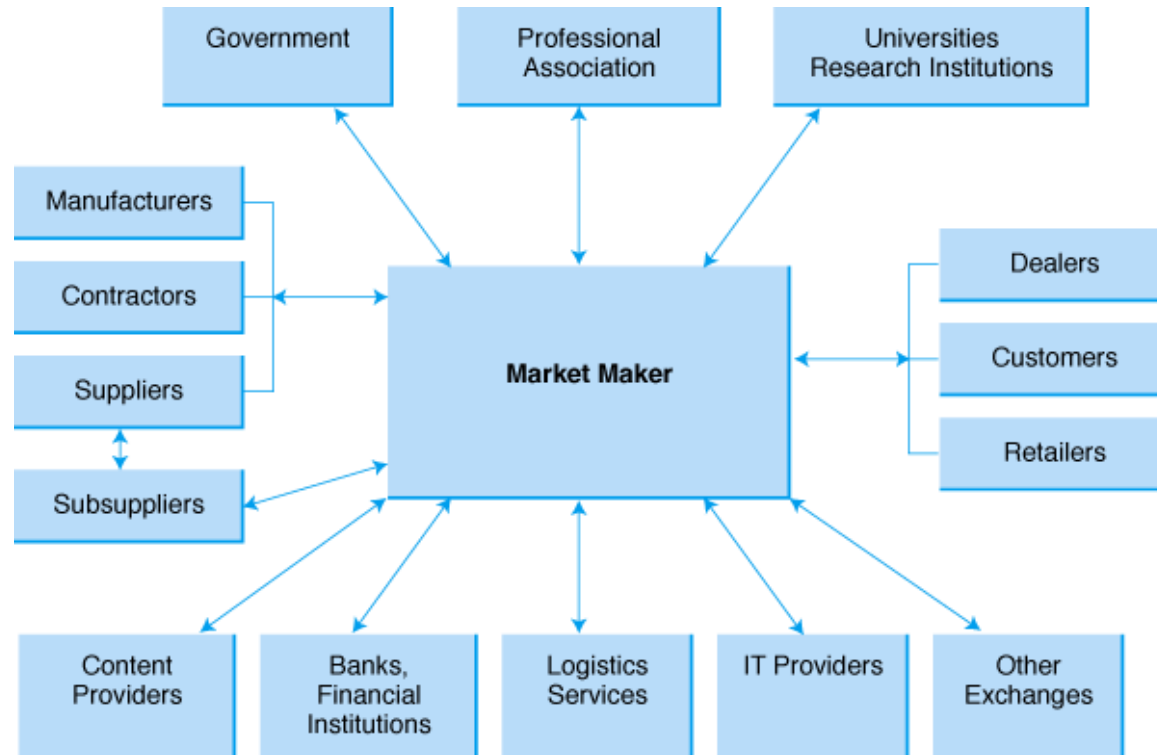
characteristics of buy-side marketplaces

- relatively easy to implement
 - no channel conflicts, minimal resistance to change
- models
 - reverse auction (tendering, bidding): a buyer opens an e-market on its own server and invites potential suppliers to bid on the items the buyer needs
 - aggregation of suppliers' catalogs
 - joining a group purchasing plan
 - bartering
- sourcing types
 - indirect goods
 - the earliest and biggest trend in e-procurement adoption to automate processes (e.g. ariba.com)
 - focused on getting standard goods at the lowest possible
 - direct goods: mission-critical
 - may account for 80% of manufacturers' expenses
 - requires a long-term relationship
 - **tight integration** with major suppliers along the supply chain is a must



B2B exchanges (e-marketplaces)

- An electronic trading community meeting place for any buyers and many sellers
- 50% of B2B activities by 2004 (AMR research)



classification of exchanges

Classification of B2B Marketplaces		
TABLE 7-1	Direct Material (Services)	Indirect MROs
Systematic Sourcing	Vertical Distributors (Catalog hubs) Interplastic.com Paperexchange.com Methods: Aggregation, fixed/negotiated prices	Horizontal Distributors MRO.com Methods: Aggregation, fixed/negotiated prices
Spot Sourcing (buying)	Vertical Exchanges e-Steel.com ChemConnect.com Methods: Matching, dynamic pricing	Functional Exchanges (yield managers) EmployEase.com Methods: Matching, dynamic pricing

PIX Index Values (February 04, 2003)

Product	PIX	Change from previous week*	Change from start of year*
Pulp NBSK	USD 456.64	↑ 10.95	16.64
Pulp BRKP	EUR 432.82	↑ 3.89	-2.75
Pulp BRKP	USD 468.01	↑ 6.95	16.80
Paper LWK (80 g/m2)	EUR 721.12	↑ 1.19	-8.25
Paper Clr Wf (100 g/m2)	EUR 774.61	↓ -0.99	-8.03



gains and risks in B2B exchanges

Gains and Risks in B2B Exchanges

TABLE 7-2

	Potential Gains	Potential Risks
For Buyers	<ul style="list-style-type: none"> • One-stop shopping, huge variety • Search and comparison shopping • Volume discounts • 24/7 ordering from any location • Make one order from several suppliers • Unlimited, detailed information • Access to new suppliers • Status review and easy reordering • Speedy delivery is likely • Less maverick buying 	<ul style="list-style-type: none"> • Unknown vendors; may not be reliable • Loss of customer service quality (inability to compare all services)
For Sellers	<ul style="list-style-type: none"> • New channel for selling • No physical store is needed • Reduce ordering errors • Sell 24/7 • Reach new customers at little extra cost • Promote your business via the exchange • An outlet for surplus inventory • Can go global easier 	<ul style="list-style-type: none"> • Loss of direct CRM, and customers' experiences and practices • Price wars, to gain attention • Competition for value-added services • Pay transaction fees (including on your existing customers) • Possible loss of customers to your competitors



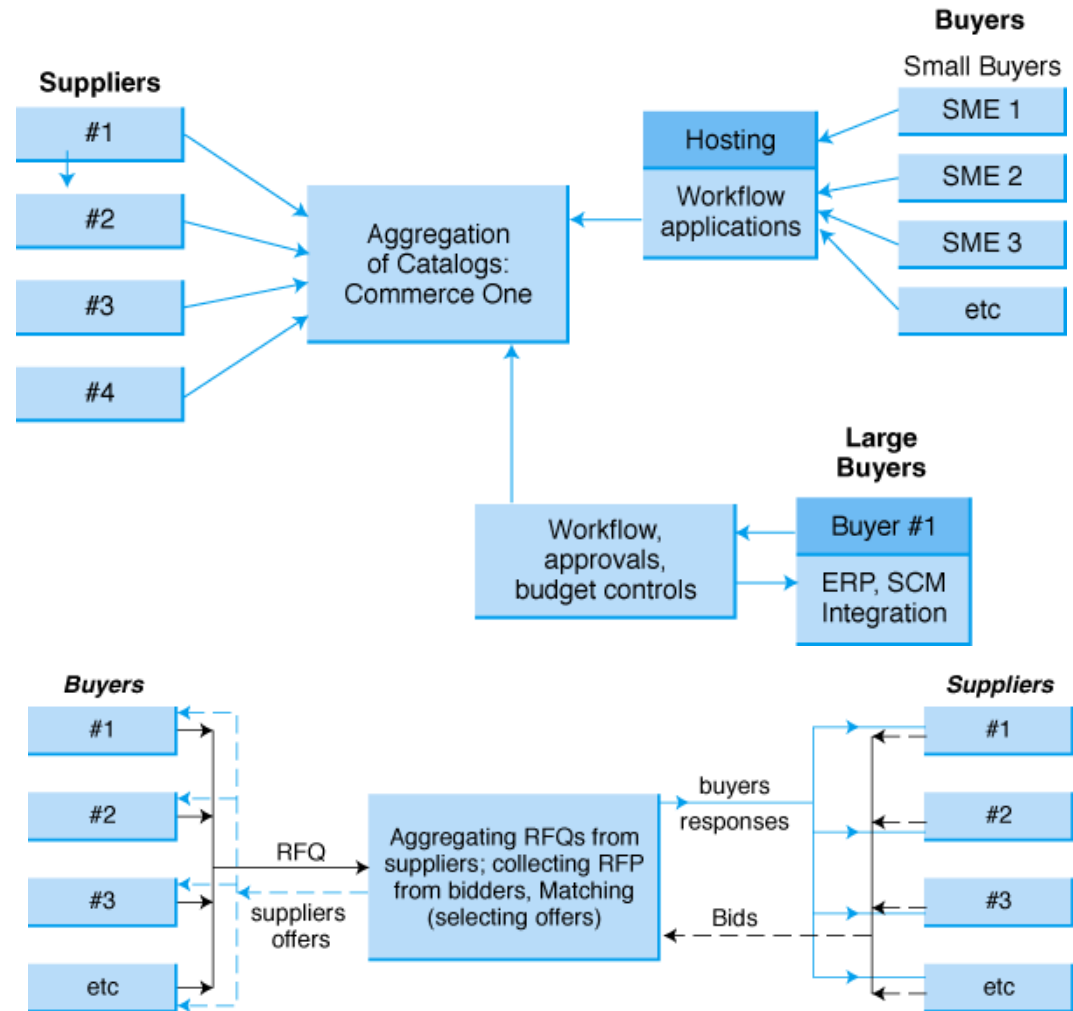
case: nte.com

- National Transportation Exchange
- about 50% of the trucks on US's roads at any one time are empty
 - While trucks are likely to be full on outbound journeys, on the way back they are often empty
- NTE uses the internet to connect shippers who have loads they want to move cheaply with fleet managers who have space to fill
- NTE creates a **daily spot market** based on the information from shippers and fleet managers
- entire process takes only a few minutes
- NTE's software can be integrated with their customer's operations and systems



issues in 3rd party (trading) exchanges

- need to **match buyers and sellers** and push them to make transactions
- supplier aggregation: standardizes, indexes, and aggregates suppliers' catalogs and make these available to buyers
- buyer aggregation: buyer's RFQs are aggregated and then linked to a pool of suppliers that are automatically notified of the RFQs



building exchanges

- leading vendors
 - Commerce One, Ariba, Oracle, IBM
- need for integration between the 3rd party exchange and back-office systems of the participants
- a buyer needs to maintain order information on its own site in order to integrate it with its internal e-procurement system
- networks of exchanges
 - connecting the vertical and horizontal exchanges to allow any customer to buy from any supplier connected to the network
 - example: Commerce One and Ariba



issues in exchanges

- problems: more than 1500 exchanges were created between Jan 1999 and Dec 2000, and only a few hundred were active by winter of 2001
- problems with public exchanges (3rd party owned)
 - increased transaction fees, reluctance to share information, not so attractive cost savings, too many available exchanges, insufficient support for supply chain integration
- problems with private exchanges
 - trust, legal problems, liquidity problems

