e-Markets

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- definition and functions of e-markets
- classifications of e-markets
- effects of e-markets
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internet has a strong effect on transaction costs

Asset Spec// Complexity Prod. Descr.	Low	High
Low High	Market	
		→ Hierarchy

e-market

- a virtual online market
  - a network of company interactions and relationships, where buyers, suppliers, distributors, and sellers find and **exchange** information, **conduct** trade and **collaborate** with each other via an aggregation of content from multiple suppliers, trading exchanges, and member communications supported by collaboration tools
- typically offer a wide variety of ancillary services
  - authenticating buyers and sellers, and streamlining procurement workflows, risk management, settlement services, conflict resolution services, and logistics services
- provide 3 major functions
  - act as an **exchange** for business transactions - not only purchasing but also for checking prices and stock availability, invoicing, and order chasing
  - manage **catalog content**, converting product information into a common format understood by all parties
  - provide additional services to support the trading process, from shipping, payment and tax to online auctions, tendering, and vetting a company's financial status

e-business market trading model
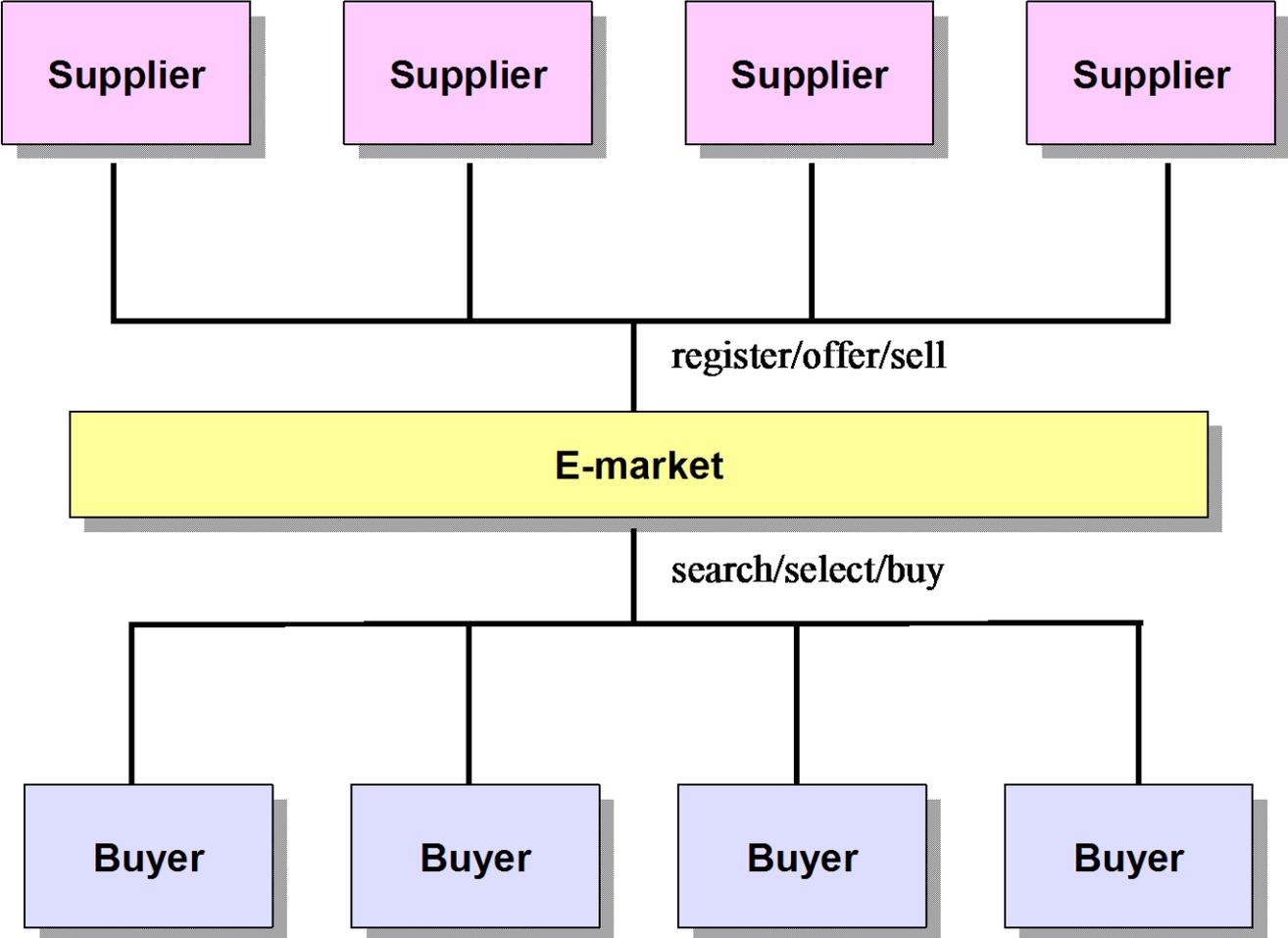
how do e-markets work?

- most common scenario: an electronic **catalogue service** that features the products and services of many suppliers in a **common industry** sector
  - sellers register their products
  - buyers use browser
  - electronic forms for ordering
  - orders are passed thro the messaging system
  - orders are sent to appropriate suppliers
- key elements
  - an **EP** that provides users with a personalized, web browser based work environment that offers everything they need to do their work
  - **e-market**, an open electronic B2B hub that enables inter-company relationships for buying, selling, communicating, and acquiring information by employing web services

typical functions in an e-market

Marketplace

Search

Register

Select

Offer

Information flow

Business process flow

Buyer

Seller

Front end

Front end

Receive

Transact

Cash-in

Buy

Sell

Back office
Financials &
Logistics & HR

Back office
Financials &
Logistics & HR

Company/organization
boundary
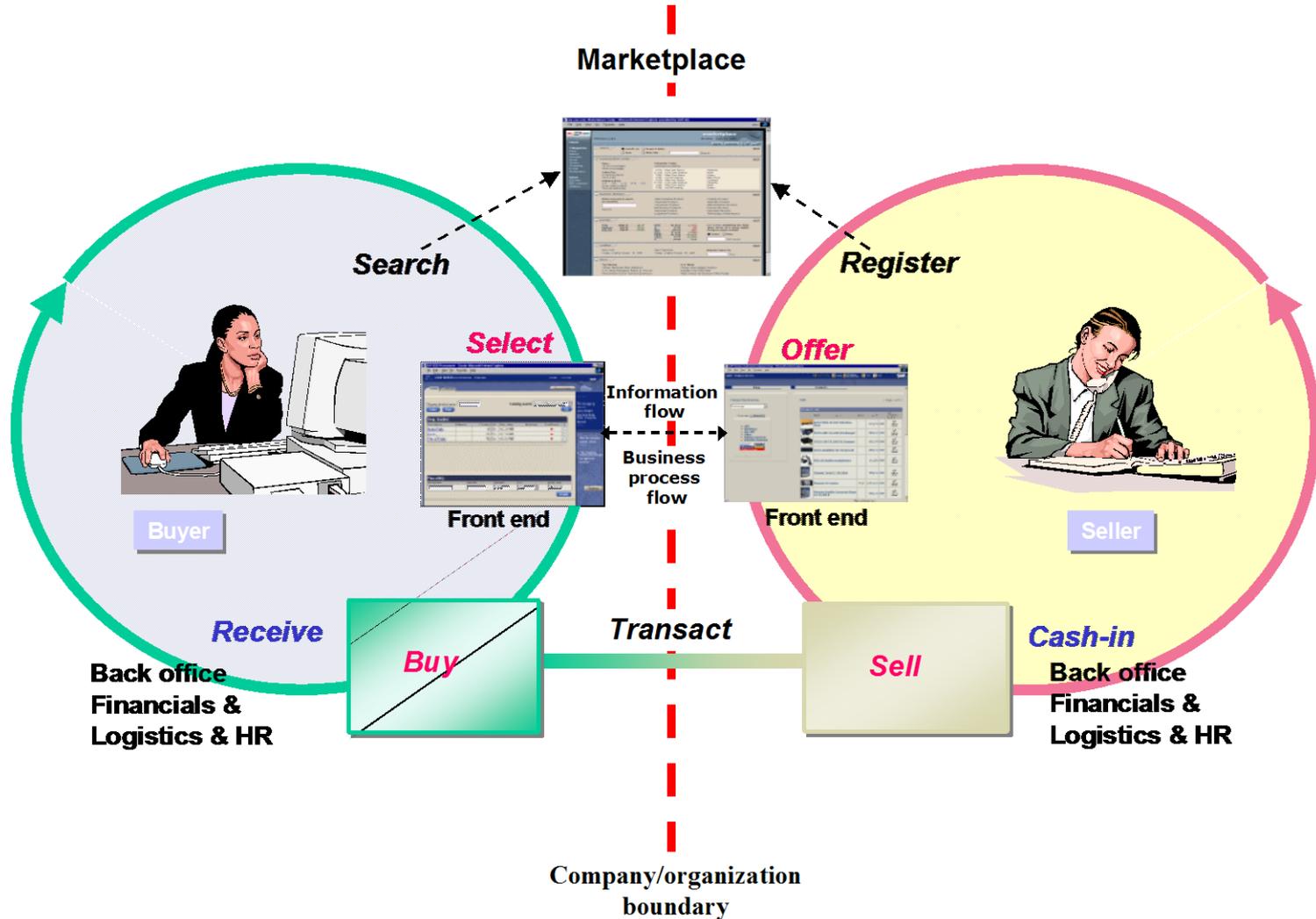
services from market makers (intermediaries)

- industry expertise and content
- catalog aggregation
- transaction negotiation and facilitation
- shipping/logistics services
- internationalization
- procurement workflow
- financial settlement or financing
- quality assurance and rating services
- business intelligence
- customer service

auction in e-market

- forward auction
  - brings together many buyers and one seller
  - price can only increase
- reverse auction
  - brings together many sellers and few buyers
  - prices are naturally driven downward

functional characteristics of B2B e-markets

- a typical b2b exchange combines following core enterprise applications
  - enterprise resource planning (ERP)
  - supply chain management (SCM)
  - customer relationship management (CRM)
  - electronic procurement

E-market

E-market participants

| Enterprise Resource Planning | Customer Relationship Mgt | e-Procure-ment | Supply Chain Mgt |

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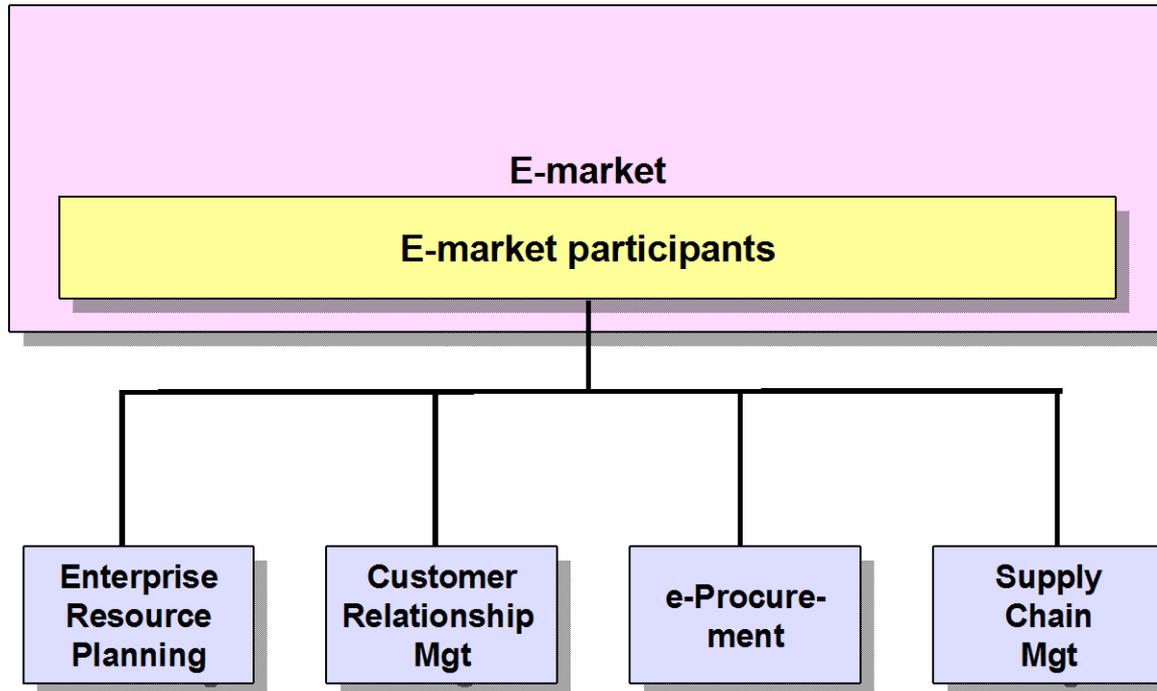
4 types of e-market

- based on what merchandise businesses purchase and how they acquire it

buying method	products bought	
	operating inputs	*manufacturing inputs*
systematic sourcing	MRO hub	catalog hub
spot sourcing	yield manager	exchange

classification of e-markets

- MRO hub
  - provide value largely by **improving efficiencies** in the purchasing process
  - e.g., ariba, commerce one
- yield manager
  - for common operating resources with a **high degree of price** and **demand volatility**, such as manufacturing capacity, labor, and advertising
  - e.g., CapacityWeb.com for manufacturing capacity
- exchange
  - closely related to traditional commodity exchanges
  - e.g., e-Steel for steel industry
- catalog hub
  - for **non-commodity manufacturing inputs**, such as plastics and chemicals
  - create value by reducing transaction costs
  - industry specific (unlike MROs)
  - e.g., PlasticsNet.com for plastics industry

classification based on the degree of industry specialization

- vertical e-markets
  - industry specific
  - dealing with **specialized goods and services**
  - e.g., covisint for auto industry (GM, ford, renault, daimler chrysler)
- horizontal e-markets
  - a product focus instead of a industry focus (MRO goods)
  - valu proposition: delivery of goods and services at **reduced prices**
  - e.g., staples.com: for office supplies

classifications based on ownership models

- buyer-dominated marketplace
  - set up by large buyers together with technology partners
  - many-to-one
  - e.g., covisint
- supplier-dominated marketplace
  - set up by (one or a few) large sellers
  - one-to-many
  - e.g., MyAircraft.com for aerospace equipment marketplace by UTC, honeywell, and i2
- neutral marketplace
  - many-to-many via an on-line marketplace
  - has the potential to radically reduce buyers' costs, and allow sellers to reach out to new customers
  - e.g., MetalSite, eSteel

efficiency achivement in e-markets

- e-markets put a downward pressure on **purchasing prices**

- e-markets **decrease informational costs** and **expand everyone's market reach** by removing the geographic barriers to buyers and sellers efficiently discovering each other

- e-markets allow a **reduction in transaction costs** and an **improvement of inventory management**

market making mechanisms

- aggregation mechanism
  - parties involved **pre-negotiate their prices**
  - large numbers of buyers and sellers are brought together under one virtual roof
  - used for systematic sourcing
- matching mechanism
  - brings together buyers and sellers to n**egotiate prices on a dynamic and real-time basis**
  - used for spot sourcing
  - may utilize an auction

biased vs unbiased markets

- unbiased (neutral) markets
  - operated by independent **3rd parties**
  - do not favor buyers over sellers or vice versa
  - problem: buyers will only participate if there is a sufficient number of sellers, and sellers will only participate if there are enough buyers
- biased markets
  - favor either buyers or sellers
  - forward aggregators
    - favor **sellers** by bringing them together and negotiating for them under an **aggregation** mechanism
  - forward auctioneers
    - favor **sellers** by bringing them together and negotiating for them under a **matching** mechanism
  - reverse aggregators
    - attract large numbers of **buyers**, and then bargain with suppliers under an **aggregation** mechanism
  - reverse auctioneers

functions of e-markets

- **matching** buyers and sellers
  - determining product offerings
  - searching
    - buyers select their purchases from the available product offerings after considering factors such as price, product characteristics, and delivery time
    - sellers locate qualified buyers for their products
  - price discovery: auctions, negotiations, ...
- facilitating the exchange of information, goods, services, and the payment
  - settlement, logistics, trust, physical infrastructure
- providing an institutional infrastructure (laws, rules, and regulations that govern market transactions)
  - provides mechanisms for enforcing contract law, dispute resolution, IP protection, ...

how do e-markets differ from traditional markets?

- personalization and customization
  - identification of individual buyers: demographics, consumer profiles, preferences, ...
  - one-to-one marketing
  - product bundling
    - seller's decision on which product components or features will be included in each product, and whether they will be marketed and priced individually or as a package
    - costs of different product bundles
      - production costs: for producing additional features for inclusion in the bundle
      - transaction and distribution costs: for distributing a bundle of goods and administering the transactions involved
      - binding costs
      - menu costs: for administering numerous prices for the components offered in different combinations

how do e-markets differ from traditional markets? (cont)

- information goods
  - digital images, music, ...
  - **marginal production and distribution costs** are dramatically reduced
  - creates new opportunities for repackaging content by **bundling**, site licensing, subscriptions, rentals, differential pricing, per-use fees, etc
- search
  - lower the costs for obtaining information about prices and product features, and also costs for advertising
  - search engines, hierarchical directories, and specific tools (e.g., PriceWatch), recommendation, personalization, ...
- facilitation
  - e-markets improve information sharing between buyers and sellers, which helps lower logistics costs and promotes JIT delivery which in turn leads to reduced inventories

how do e-markets differ from traditional markets? (cont)

- transaction mechanisms
  - standard price offering: fixed price, contract
  - auctions
  - RFQs (Request for Quote): reverse auctions
    - buyers create RFQs if the product they are interested in does not exist in e-market or if they want to solicit for a better price for an existing product
    - buyers review the responses and select a possible winner
  - exchanges
    - **match bid offers with ask offers** based on e-market rules, and inform the parties involved of the potential match
- price discovery
  - real-time price discovery becomes possible
  - e.g., last minute auction for unsold flight seats
- e-payment and e-invoicing
  - automate procurement, contract administration, fulfillment, financing, credit ratings, shipment validation, order marching, payment authorization, remittance matching, and general ledger accounting

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e-market's impact on market structure and efficiency

- cost reduction
  - reduce the costs of obtaining information on the prices and products
  - reduce the costs of advertising price and product information
- network externalities
  - benefits for individual participants increase as more businesses join their interorganizational information systems
- switching costs
  - e-markets may require sizeable investments from their participants, for hardware, software, employee training, and organizational transformations
- economies of scale and scope
  - small incremental costs for additional transactions
- technological uncertainty
  - potential participants face substantial uncertainty regarding the actual benefits of joining an e-market

stakeholders of e-market

- participants who affect or are affected by the market's development and implementation
  - buyers and sellers
  - investors
    - external investors: e.g., investment on PaperExchage, CommerceX, and Logistics.com by Internet Capital Group
    - internal investors: e.g., Proctor & Gamble's investment on Transora, an e-market for packaged consumer goods
  - service providers
    - e.g., ariba for e-market infrastructure
    - e.g., DHL for logistics services

e-market success factors

- critical mass
  - the minimal number of users of an interactive innovation for the further rate of adoption to be self-sustaining
  - the benefits realized by individual participants in an e-market increase as more organizations join the system
  - cf. **network externalities**: a quality of certain goods and services is such that they become more valuable to a user as the number of users increases
- factors that contribute to critical mass
  - context-related success factors
  - process-related success factors

context-related success factors

- stakeholder motives
  - opposite motives of key stakeholders is a serious threat
- products traded
  - complexity of product description
    - items with simple product descriptions are more suitable for e-markets
    - e.g., Eumedix failed as a market place because its initiators underestimated the complexity of products sold (e.g., medical gloves used in hospitals)
  - asset specificity
    - e-markets are best suited for sourcing goods with a low asset specificity

process-related success factors

- functionality and support
  - must match the requirements of the users
- learning costs
  - high learning costs are barriers to adoption
- trust: critical element for screen based trading
- quality of information: availability of correct information on products, trading partners, and contracts
- information security: safeguard of integrity and confidentiality of information
- geographic location: dependent on the perceived risks for the participants, localized e-markets will evolve
- partnerships: with industry leaders and domain experts can contribute to perceived trust

e-market technology solutions

- aim to facilitate direct integration with trading partners
- hosted by the market maker organization or via an ASP model
- can also be realized by use of web services