ICS 132: Organizational Information Systems

Performance and Competition

today's topic

- information systems and economic performance
  - how can information systems make an organisation more competitive?
  - what does it mean for an organisation to be competitive, anyway?
  - where do information and information systems fit into the processes that make an organsation effective?
- so we'll look at:
  - economics: competition and markets
  - information systems and strategies

some basic economics

- economics is about the allocation of scarce resources amongst possible uses
- individual behaviour
  - basic model of allocation
  - two key features
    - opportunism
    - rationality
  - note the opposition between these!
    - remember the notion of BOUNDED rationality
      - limits of information
      - limits of time

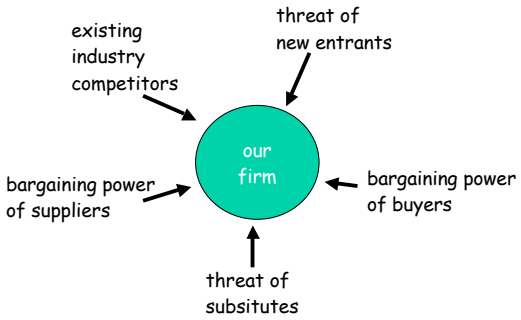
some basic economics

- economics talks about iteration
  - the outcomes of repeated events
  - it's the steady state that matters
- *marginality* is the effect of iteration
  - utility
    - the benefit an individual receives
  - marginal utility
    - the amount of utility gained by adding one unit
    - marginal utility often decreases with numbers
  - similarly:
    - cost & marginal cost

supply, demand, markets

- availability from all suppliers is *supply*
- amount acquired by all consumers is *demand*
- supply and demand are balanced through
  - price mechanisms
  - in a market where goods are exchanged
- price-*elasticity*
  - demand for an elastic good falls as price rises
    - and rises as price falls
  - demand for an inelastic good remains the same

competitive pressures



competition

- a perfect market
  - many buyers and sellers, all small w.r.t the market
  - homogeneous product
  - no barriers to entry and exit
  - perfect information amongst customers
    - information about products and prices
  - no switching costs
- in perfect markets…
  - prices driven down to marginal cost of production
  - suppliers forced to be very efficient
  - customers win through low prices

back to the real world

- the most important thing about perfect markets?

back to the real world

- the most important thing about perfect markets?
  - they don't exist (or, at best rarely and fleetingly)
    - perfect information amongst customers?
      - hard to achieve, and hard to exercise
    - no barriers to entry and exit?
      - inertia; advertising; brand; production facilities; skill set
    - no large players?
      - dominant companies and conglomerates
        - » Microsoft, Starbucks
    - no switching costs?
      - economic ones?
      - psychological?

information systems

- information systems and competition
  - information is a resource that can be leveraged
  - information systems incorporate information into organisational processes
  - the goal is to improve performance in competition
    - knowing more about customers…
    - improving efficiency of internal processes…
    - giving a competitive advantage
- customer-focused view
  - rational agent with discretion

competition

- competitive strategies
  - you create and sell software development environments (like Visual Café, BlueJ, etc).
  - you have a number of competitors making similar tools
  - how are you going to compete?

competition

- competitive strategies
  - *cost leadership* strategy
    - Kia, Target
  - *product differentiation* strategy
    - Apple, Bang & Olufsen
  - *focus* strategy
    - first edition books
- what are the risks of each?
  - one is probably not enough…

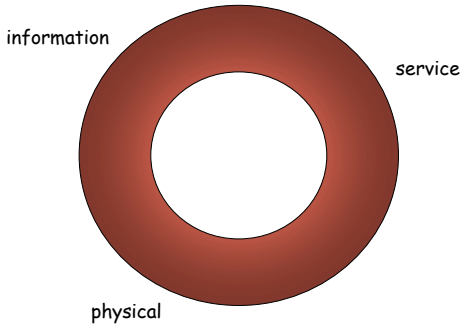
competitive strategies

- create barriers to entry
- increase customer's switching costs
- change competition
  - new services and products
- alliances
- Bakos and Treacy
  - gain bargaining power
  - achieve comparative efficiency

competitive advantage

- Bakos and Treacy's model
  - gaining bargaining power
    - search-related costs
    - unique product features
    - switching costs
  - increasing comparative efficiency
    - internal efficiency
    - interorganisational efficiency

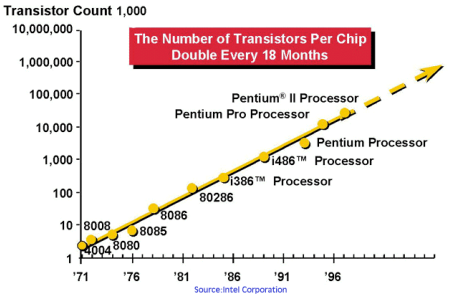
product, in three parts



product, in three parts

- one strategy for increasing value
  - combine elements from the model
    - add service or information to a physical product
      - examples…
    - add physical or service component to information
      - examples…
    - add information or physical component to service
      - examples…

information-based products



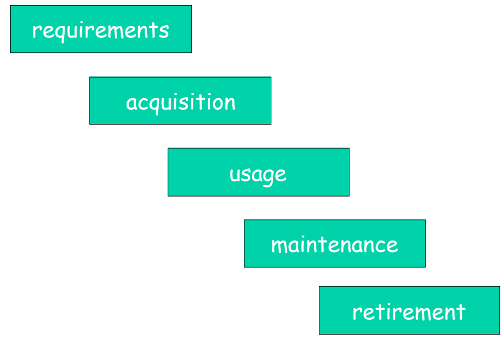
customisation

- information integration supports customisation
  - easy access to a historical record
  - tightly integrate sales with manufacturing
- ecommerce can support massive customisation
  - everybody sees a different home page on Amazon.com
  - marginal cost of a dynamic web page approaches zero!
- when customisation goes wrong…
  - individual pricing?
  - "price transparency"

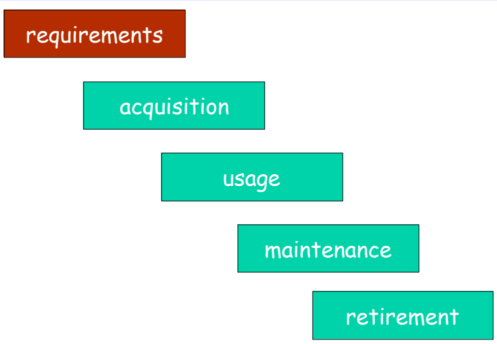
product and value

- we've been taking the organisation's view
  - but *value* is assessed by customers
- facets of customer product value
  - cost
    - not just price; also time, effort, etc.
  - quality
    - function, aesthetics, correctness, completeness, etc.
  - responsiveness
    - well matched to timeframe of needs
  - reliability
    - dependability; correctness of information
  - conformance
    - ensuring that it'll be usable

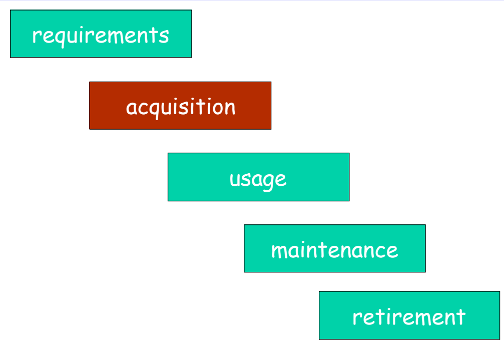
customer lifecycle



customer lifecycle



customer lifecycle



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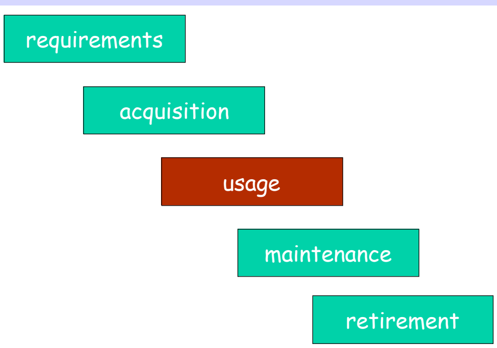

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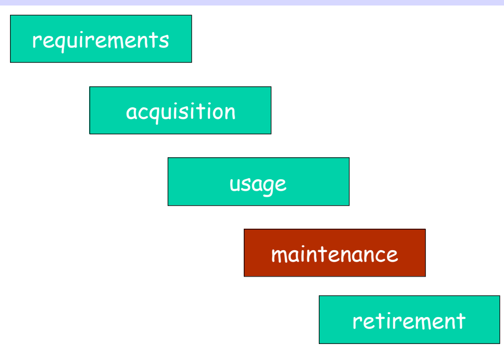

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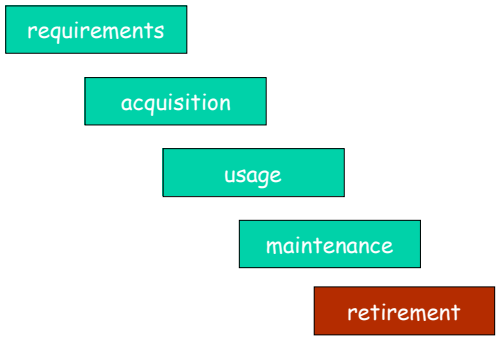
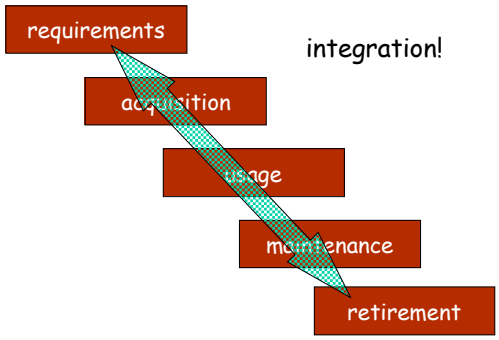


customer lifecycle



integrating information

- how does Amazon.com compete with traditional booksellers?
- how do the booksellers fight back?
- how does Amazon.com compete with other "e-tailors"?

e-commerce

- e-commerce is one means to integration
  - the full product cycle
  - organisations control their own channel
- e-commerce is an information strategy
  - much easier way to collect information!
    - and the information is more reliable, too
- e-commerce risks
  - customer reluctance
  - financial transactions are still external to the system
  - low cost of entry
    - easier to masquerade as Amazon.com than Barnes&Noble

summary

- information systems in support of competition
  - improving organisational efficiency
  - improving bargaining power
- product elements
  - information, physical, service
- customer lifecycle
  - requirements, acquisition, use, maintenance, retirement
  - information systems also critical to integrating them

what's coming up

- from today's lecture:
  - look at the Bakos & Treacy paper on the web
  - http://www.ics.uci.edu/~jpd/classes/ics132w03
- tuesday:
  - information and "institutional circuitry"
    - read paper on the the website
    - discussion in class
- thursday:
  - start talking about processes and workflow