NBA 600
Strategy and IT
Class 2, Wed 10/17

Prof. Dan Huttenlocher

Final Assignment

- Industry or company undergoing strategic change due to information technology
- Cover competitive landscape now and how changing, what value provided to whom
  - E.g., music industry, role of labels
- Brief proposal and 3 person team description due Monday 10/29 in class

Today's Class

- Carr's position that "IT Doesn't Matter" strategically
- Metalfe's response
- Both raise issue of IT and productivity
  - Findings are complicated
  - How is productivity relevant to strategy
- To what degree are these authors talking about relationship of strategy and IT
  - What can we conclude about strategy and IT

Carr's Main Points

- Scarcity not ubiquity of strategic value
  - IT has become ubiquitous (commoditized)
- Infrastructural technologies
  - IT has become an everyday necessity "like electricity"
- Switch from offense to defense in IT
  - Spend less
  - Follow don't lead
  - Focus on vulnerabilities not opportunities
- IT spending does not improve productivity

What Carr Sees as IT

- Largely investment in PC's and communications infrastructure
  - Now cheaply available to all
- Less focus on software though does discuss commoditization of software
- Analogous to railroads, electricity
- More broadly are business processes becoming commoditized?
  - As embedded in commodity software
  - What implications for strategy beyond IT

Carr on Companies' Use of IT

- Highlights Walmart and Dell as companies that stay back from cutting edge technologies until standardized
  - Do these companies use IT strategically?
    - Walmart leader in supply chain automation, is that standardized? If so why are other companies not using it?
    - Walmart's use of RFID, technology follower?
    - Dell unique in online sales of PC's, why not widely copied?
  - Relationship between first mover and strategy?

Key Issues

- Being first not same as being strategic
  - Can go either way
- Strategy: profitable way of doing business that is not copied (for a considerable time)
  - Fedex, Walmart, Dell all good examples
  - All heavy users of IT
    - Though not necessarily biggest IT spenders, a critical point
    - IT driven by a strategic information view
      - Share info with customers, share info with suppliers

Metcalfe's Main Points

- IT matters because it is widely used
  - Misses strategic role
- Non IT execs willingly spend considerable time on IT issues, clearly important
  - Important not necessarily strategic
- Even "mature" IT still evolving quickly
  - 30 year old Ethernet still offering potential advantages with wide area gigabit
- Wide availability does not mean non-strategic, depends how used

IT and Productivity

- Both authors raise issue of productivity
  - How relevant to strategy
- Sustainable lower cost structure through IT enabled productivity
  - More effective at competing on price
    - E.g., Wal-Mart
- What is strategy about
  - Differentiation, competing on added value
    - Providing value others haven't, in a way that is profitable and sustainable

McKinsey Study Basic Findings

- Productivity acceleration of 1990's concentrated in 6 sectors
  - Semiconductors, computer manufacturing, telecommunications, wholesale, retail, securities
- IT important as enabler of innovation and competition – not alone a factor
  - Improved processes, products, services, distribution
    - Specific to industry sector and often to particular firm – no "silver bullet" or "killer app"
  - Degree of improvement not driven by IT spend

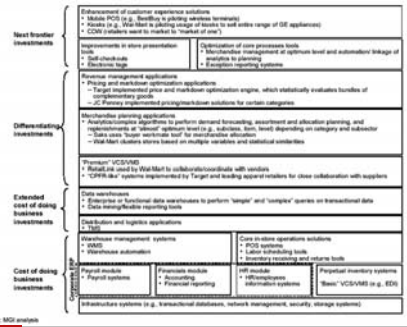
Industry Cases

- Detailed investigation of 3 sectors
  - Focus on retail and retail banking
- Consider how IT investments at sector and firm level tie to "performance levers"
  - Labor productivity
    - Capital for labor, labor efficiency, labor effectiveness
  - Goods and services
    - New, higher value, more value from current
  - Capital productivity
    - Asset utilization, non-labor costs

Tiering of IT Investments

- From necessary costs to potential strategies
- Basic cost of business
  - Necessary to be competitive
- Extended cost of business
  - Needed by leaders or larger firms
- Differentiating (strategic)
  - Allowing firms to gain cost, product or service advantage
- Next frontier (strategic)
  - Pilots of potential new differentiators

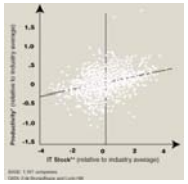
IT Tiering for Retail Sector



Source: MGI analysis

BrynjofIsson Study of IT Productivity

- Finds overall positive relation between IT investment and productivity
  - Examines nearly 1200 companies
  - Considers level of IT capital per worker
- Tremendous variability
  - Can't simply invest in IT and wait for payoff
- Catalyst for broader institutional change
  - Can increase (or potentially decrease) productivity



Rate of Adoption and Strategy

- Over time most investments become cost of business (not just true of IT)
  - Productivity increase for industry rather than competitive advantage
- Rate varies greatly
  - Extent of competition in industry
  - Complementary advantages such as scale
    - E.g., WalMart, increasingly Target
  - Ability to stay ahead through better learning
    - Virtuous cycle of advantage by out-innovating
    - E.g., WalMart (until now?), Fedex from 70's-90's

IT and Strategy

- Difficult to achieve and sustain competitive advantage through IT investment alone
  - More likely to be and remain differentiating when coupled with other advantages
    - Scale, substantial changes in business process, associated learning effects
- Sectors vary greatly in strategic value
  - Retail leaders able to turn data into valuable information for inventory, planning, pricing
    - Not yet necessary cost of business (commoditized)
  - Banking advances quickly adopted industry wide

Relation to Carr "Debate"

- Takes simplistic view of IT as a silver bullet
  - Investment provides competitive advantage
  - Used to, but doesn't any longer
- Years worth of studies have shown IT alone does not improve productivity
  - Why expect it to provide competitive advantage
- Rebuttals largely fall into same trap
  - All or none generalities rather than specifics of industry structure, company positioning, …
- Strategic analysis critical for IT investment

Necessary vs. Differentiating

- Two different roles for IT
  - Necessary for doing business ("infrastructural")
  - Enabling differentiation ("proprietary")
- Necessary IT managed for reliability, security, cost
  - Perhaps formerly differentiating
  - Industry standards or shared resources
- Differentiating IT requires clear strategic understanding
  - In service of strategy, not strategy itself

Either Necessary or Differentiating

- Strategic value depends on sector and specific company
  - Information-based businesses
    - Software
    - Including those becoming so, such as digital goods
  - Retailing
    - Customer and supply chain
  - Shipping and logistics
    - How much potential for advantage remains?
  - Oil and gas

Next Time

- The Internet and Economics of Networks
  - Legg Mason research report as some background on network economics