NBA 600: Day 6
The End of IT Strategy?
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Daniel Huttenlocher
Today’s Class

- Moving beyond Internet to information technology more broadly
  - Carr article counters both Porter and Tapscott
    - Denounces strategic role of IT
      - Just a necessary cost of doing business like electricity, manage conservatively
    - Responses from Hagel & Seely Brown, McFarlan & Nolan, Strassman

- Importance of how claims are justified
  - Level of understanding of the technology and its potential
IT No Longer Strategic

- Carr’s main claims
  - Competitive advantage is about scarcity
  - IT used to be scarce but not any longer
    - Cheap networks of PC’s are commoditized
  - Thus concludes IT is no longer strategic
    - Should be managed like any other necessary cost of business such as electricity

- Parallel to other infrastructures
  - Says these were strategic during build-out but not once universally available
    - Railroads, electrical grid
Role of Scarcity

- Does scarcity provide competitive advantage?
  - Limited availability of raw materials
  - Patents and proprietary technologies/processes
  - What about railroads example Carr uses?
  - Other?

- Effect on those that don’t control scarce resource and thus pay high costs?

- Competitive advantage without scarcity?
  - Carr’s arguments based importance of scarcity
Back to Copier Example

- Role of scarcity in Xerox’ competitive advantage
  - Patents that limited others’ ability in the plain paper copier business
    - But Kodak, Canon others did compete in 1970’s
  - Xerox’ revenue and market share
    - Countered threat in 1980’s from Kodak, Canon
    - Sharp decline not until late 1990’s
  - What changed?
    - Not loss of patents (scarcity), new substitutes
      - Role of networks, desktop printers, convenience
Strategy and Scarcity

- Several companies have excelled in the past decade
  - Dell, Amazon, WalMart
  - IBM turn-around
- Were these successes strategic?
- If strategic, did scarcity play key role?
  - If not scarcity then what?
- Were these companies leaders or laggards in IT spending?
  - Did they control and watch their IT spend?
What Does Carr Mean by IT?

- Carr claims IT is fundamentally a transport mechanism
  - Carries digital info like railroads carry goods and power grid carries electricity
- Certainly true for IP networks such as Internet
  - But what about all of IT?
  - What about applications on Internet?
    - Internet applications: Email, IM
    - Online banking, retail, auctions?
    - Enterprise software systems?
Impact of New Infrastructure

- Carr argues railroads fundamentally changed business
  - Made long distance shipping of finished goods economical, not just raw materials
    - Enabling mass production
  - Strategic advantage only during build-out?
    - How useful prior to large scale rail networks?

- Sees IT as similar
  - Makes it economical to “ship information” that could not be sent economically before
    - Only advantage in limited window, which is past
Is IT “An Infrastructure”? 

- Railroads and electrical grids took several decades to build out
  - Were “bubbles” associated with investment in these new infrastructures
- Each such infrastructure addressed a particular aspect of industrial production
  - Power for running machinery, illuminating workplace
  - Transportation of materials and finished goods
- What aspects of business addressed by IT?
Parallels in IT Build-Out

- What are reasonable comparisons?
  - Capacity measure, increasing quickly and then leveling off
    - Electricity: megawatts, miles of wires
    - Railroads: tonnage, miles of track
  - Carr uses number of Internet servers as measure of IT capacity
    - What does this measure?
    - What about total megahertz of CPU and bandwidth of network?
    - Is any hardware measure adequate for IT?
      - Relationship of capacity to usage and value?
Hardware “Capacity” of IT

- Exponential growth in power
  - Build-out of electrical or rail changed who was connected and how much they could use
    - Underlying capability did not change much
    - Cost structures improved but by small factors
  - Computing and communications hardware capability changes almost incomprehensible
    - Large quantitative change becomes qualitative
      - 10,000x change in cost of computing (per MIP) since 1965
      - 10x per decade and still happening
      - Similar trends in storage, bandwidth
Qualitative Hardware Changes

- When quantitative change enables new compelling application at acceptable price
  - Predictable advances, get there ahead of time
- Desktop computer powerful enough to run spreadsheet
  - VisiCalc was driving application for initial PC sales ("IBM PC")
- Storage for 1,000 songs in small handheld device
  - Initial i-pod
- Others?
Software “Capacity” of IT

- Largely ignored by Carr’s article
  - Focuses primarily on networked PC’s
    - But what provides the value?

- Views software as making business activities replicable and commoditized
  - Removes capability for competitive advantage as all companies adopt same software

- Fundamental question of what software is
  - Solving particular problems versus providing “canvas” for creative problem solving
    - What specific business problem in spreadsheet?
Is IT a “Strategic Leveler”?

- How often is IT alone the solution?
  - Does software provide what is needed or support the work that is being done?
  - What about total automation?
    - E.g., online trading
  - When is software a commodity?
    - A commodity is widely available and widely used

- Are standard business processes captured in software a threat to strategic ability?
  - What are your experiences with ERP deployments versus commodities like Excel?
Carr’s Recommendations

- All this critical infrastructure poses risks
  - Little chance of new investment providing competitive advantage
- Change from “offensive” (strategic) to “defensive” (risk management) posture on IT investments
  - Spend less
  - Don’t lead
  - Focus on vulnerabilities not opportunities
- From exciting (big bang) to boring (incremental)
About Carr’s Recommendations

- Has IT investment alone ever provided strategic advantage?
- Have big bang IT projects ever been successful?
  - Steps with measurable progress and ability to correct?
- Isn’t attention to vulnerabilities and risks part of any good business planning?
  - Leader or follower?
- Are these arguments against strategy or against wishful thinking and magic bullets?
Hagel & Seely Brown Response

- Extracting value from IT requires innovations in business practices
- IT is inherently strategic because it creates new possibilities
  - Indirect effects that must be exploited to obtain advantage
  - Insight for harnessing is the differentiator
- E.g., broader notion of transaction costs
  - Friction in getting business done
    - Building trust
    - Developing and disseminating knowledge
Hagel & Seely Brown

- Incremental tactics guided by driving strategy
  - Staying ahead by constantly exploiting new opportunities as arise for your business
  - E.g., WalMart leader in using IT to drive down costs
    - Innovative thinking about how to use new technologies not just applying vendor offerings
- IT breaking down walls of the enterprise
  - New forms of corporate relationships
  - What about customers?
Strassman Response

- Refutes each of what he sees as major points of Carr’s article
  - IT has lost its strategic value
    - Argument by analogy based on flawed comparisons to railroads, electricity
  - IT is commodity that does not provide competitive advantage
    - Competitive advantage is result of effective management by skilled, motivated people
    - His studies have repeatedly shown profitability and IT spending unrelated
      - Even if identical technologies are used
Strassman Response

- Additional main points
  - IT is primarily a transport technology
    - Complete misunderstanding; value is in the message not the means of conveyance
      - How IT used for improving “knowledge capital”
  - Corporations will adopt generic applications, leading to uniform business practices
    - Completely counter to experience deploying systems such as SAP
  - IT reaching end of its growth
    - After 50 years of exponential growth, underlying hardware continues improving at same rates
For Next Week

- Read McKinsey report on how IT enables productivity growth
  - http://www.mckinsey.com/knowledge/mgi/IT/ (free registration required)
    - 5 of 6 sections (all but semi-conductor case)
  - While reading consider Hagel & Seely Brown claim that in sectors with growth or more companies used IT for significant innovation in business practices
    - To what degree strategic?

- Discuss IT as enabler and relationship to business strategy