



**NBA 600: IT and Competitive Strategy**  
First Class Session, Mon 10/15

Prof. Dan Huttenlocher

### Goals of the Course

- How IT can be used strategically
  - Computing, communications and software for sustainable competitive advantage
- Coping with high pace of change in global economy
  - Strategies that survive or even benefit from new generations of IT
  - Identifying strategies that are threatened
- Analyzing new technologies
  - Navigating between disruptive hype and head-in-sand wishful thinking



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### Premises/Assumptions of Course

- The most successful strategic uses of IT are
  - Driven by both domain (business) and technology expertise
    - Individuals and small teams
  - In service of a clear business strategy
    - Defining scope of what is undertaken
  - Delivered incrementally
    - Refined based on experience
- IT can be a necessary cost or strategic
  - Makes analysis difficult



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### What You Should Take Away

- Examples of how IT has been used strategically in a range of industries
- Means for considering the potential strategic role of IT in an industry or company
  - Including effects of technological change
- Exposure to some current and emerging technology trends and their use
  - E.g., digital goods, DRM, social networking, search



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### Backgrounds

- Huttenlocher
  - PhD in 1988
  - Computer Science faculty member on and off since then
  - Researcher and manager at Xerox PARC
  - Founder and former CTO of Intelligent Markets
  - Joint appointment in Johnson School and Computer Science past 5 years
- Students



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### Class Schedule

- M 10/15 – Intro/Overview
- W 10/17 – When is IT Strategic – Carr, Metcalfe
- M 10/22 – The Internet and Economics of Networks
- W 10/24 – Internet and Strategy
- M 10/29 – Digital Goods and Versioning
- W 10/31 – Digital Music and Video
- M 11/5 – Digital Rights Management and Darknets
- W 11/7 – Online Retail, Customer Experience and Long Tail
- M 11/12 – Search, Keyword Ads, Beyond Google
- W 11/14 – Internet-X, VOIP, IPTV
- M 11/19 – Online Communities and Social Networking
- M 11/26 – Open Source Software (Apache, Linux, ...)
- W 11/28 – Student in-class presentations



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## Overview of Topics

- When IT is strategic versus necessary cost of business
  - Can be both, teasing apart and making appropriate investment decisions
  - Carr's position that IT is commoditized so of little strategic value, Metcalfe's response
- Background on economic characteristics of networks and structure of the Internet
  - Network effect, small worlds, power laws and an overview of how the Internet works

## Overview of Topics (2)

- Internet and strategy
  - Porter and responses in 2001, still relevant today, "Web 2.0"
- Digital (information) goods and services
  - Implications of change from physical to digital delivery, music industry as an example
    - Economic models
  - Strategic questions, what value are studios and labels providing
  - Role of copy protection

## Overview of Topics (3)

- Online living
  - Retailing, communication, search, communities and entertainment
    - How online differs and how the online world is changing them in general
    - Strategies that have been successful
    - Trends such as "long tail"
    - Protecting digital content, delicate balance
    - Moving search beyond naming things
    - Digital telephony, VOIP
- Open source software

## Requirements

- Preparation for class
  - Read actively, think about topics before class
    - A few short (approx. 10 min) quizzes
- Form teams of 3 for final project
  - Team background and proposed industry and/or company for strategic analysis due 10/29
- Individual short paper
  - Posted 10/29, due 11/12
- Final project presentation or paper
  - Selection for in-class presentation 11/5

## Grading

- Class participation and quizzes 30%
- Individual written assignment 20%
- Final group project 50%
  - Consider whether your team-mates are taking for grade or S/U
- What's an A?
  - The class and I learn from you
- Re-grades will only be considered within one week of an assignment being returned
  - Hand in a concise explanation to me

## Questions

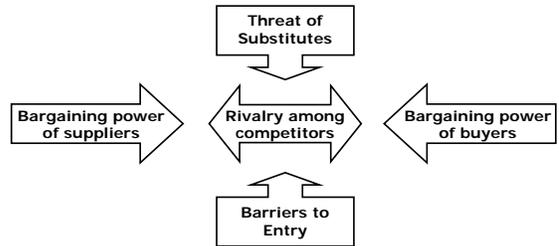
- Course goals, structure, administration?

## Competitive Strategy

- Gain sustainable competitive advantage
- Clear understanding of distinguishing value for the customer
  - Value that can persist over time
  - How to maintain distinguishing nature of value
  - How to profit from that value
- What not to do as much as what to do
- Porter's 5 forces model, SWOT analysis
  - Analyzing viability/sustainability of strategic advantage

## Porters Five Forces Model

- Sustainability of a strategy



## Strategy and IT

- Competitive advantage should persist across (some) generations of technology
- Technological change can facilitate or enable new strategies
- IT is in service of the strategy not the strategy itself
  - Terminology can be confusing, an "IT strategy" need not be strategic in competitive sense
- Strategies that exploit continued IT advances – rapid pace of change

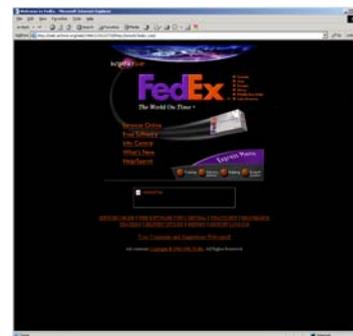
## Example of Federal Express

- In 1970's package freight was not a time sensitive business
- Fedex founded with idea of guaranteed delivery: "absolutely, positively overnight"
  - Two changes enabled this
    - Regulatory changes in air freight that allowed Fedex to establish its hub system
    - IT systems that enabled rapid entry of shipping forms and tracking of packages
- Strategy: what to do and not to do
  - Focus on value of guarantee rather than volume

## Fedex Information Systems

- As early as 1979 founder Fred Smith said
  - "The information about a package is as important as the delivery of the package itself."
- Systems designed to share information with the customer not just for internal use
  - Technology costs limited to customers who did substantial business
    - In 1980's Fedex developed and distributed custom PC based software
      - Gave 100,000 PC's, modems to large customers making customer base into an electronic network
    - Exponential growth from '81-'86

## Fedex.com in 1996



## Internet and Fedex Strategy

- Change in Fedex strategy?
- Just provided a lower cost way of reaching customers – expanding the base
  - Strategy indicated aggressive deployment
- In 1994 became first Web site to enable customers to track status of packages
  - Rudimentary software “scripts” to tie site to mainframe package tracking system
  - Quickly evolved into full shipping, tracking and billing
  - Tracking became valuable to end consumers

## Internet and Fedex Strategy (2)

- Online retailers increased need for small package shipping
  - At about same time as document shipping became less necessary due to email
- Accurate tracking an important part of the online experience
  - But overnight delivery often not as important as predictability
    - Refinement of strategy from overnight to accurate – but not outright change
      - “The world on time”

## Role of IT at Fedex

- Viewed as critical to business both strategically and operationally
  - Enables strategy that information about a package is as important as the package
    - Creates competitive advantage
    - Drives excellence (no hiding from customer)
  - Was critical to rapid growth
  - Sub-committee of board specifically on IT
- In contrast many companies see IT as operational but not strategic
  - Is package delivery special?

## Fedex and UPS

- UPS is the largest package delivery service in North America
- While Fedex has tended to be information technology leader UPS is aggressive competitor
  - Rapidly rolls out new information services
- Both companies have air and ground services
  - Until recently different emphases
- High cost business for others to enter

## Fedex Today

- Do they have clear value proposition over other package freight companies?
  - What untapped strategic advantage remains in the business?
- How do expansions into new businesses fit with original strategy or a new strategy?
  - Logistics business
  - Ground delivery business
  - Kinko's

## Fedex Competitive Advantage

- From differentiating to necessary IT
  - Took 25 years for Fedex to lose their clear IT enabled advantage over UPS
- Continued differentiation required substantial ongoing innovation
  - Large changes in technology every few years
- During that time gained them
  - Clear value – “absolutely, positively”
  - Higher customer value and loyalty
  - Market segmentation revenue opportunities

## Competitive Advantage from IT

- Any competitive advantage tends to get competed away over time
  - Degree of advantage, duration, relative to costs
  - Path for continued innovation
  - Scale or other more sustainable advantage
- Depends on industry structure
  - Package freight: FedEx had lead for decades
  - Retail: Wal-Mart has sustained IT-enabled lead
  - Banking: fast industry-wide adoption
    - No strategic advantage doesn't mean unimportant

## Next Class

- When is IT strategic
  - Carr and Metcalfe readings
  - Syllabus with links on Blackboard site
- For those who have not taken strategy core
  - “What is Strategy?” by Michael Porter, HBR, Nov. 1996