Managing the Innovation Process
Standards, Patents, and Open Source
Overview

• Take-Away

• Required Readings

• Supplemental Readings

• Caveats
Take-Away

• Innovation may not always lead to efficiency

• Innovation process takes on many different forms

• Innovation can rise out of standards wars

• Innovation is the subject of many economic theories
(David, 1985)

- “Clio and the economics of QWERTY”

- QWERTY vs Dvorak Simplified Keyboard (DSK) (standardization on the “wrong” system)

- Possible Explanations
  (technical interrelatedness, economies of scale, and quasi-irreversibility of investment)

- Implication
  (beware that path dependence can result from chance)
(Raymond, 1999)

- "The cathedral and the bazaar"

- **Cathedral vs Bazaar**
  (carefully crafted by individuals vs large masses)

- **Examples**
  (Microsoft Windows vs Linux Kernel)
  (Qualcomm Eudora vs FetchMail)

- **19 Lessons**
  (e.g., great programmers know what to rewrite and reuse, release early and often, recognize good ideas)
(Shapiro & Varian, 1999)

• “Information Rules: A strategic guide to the network economy – Waging a standards war (pp. 261-296)”

• **Standards Wars**
  (two incompatible technologies vie for de facto standard)

• **Examples**
  (DVD vs Divx, Lotus 1-2-3 vs Excel, Netscape vs IE)

• **Key Assets**
  (control over an installed base, intellectual property rights, ability to innovate, first-mover advantage, manufacturing abilities, strength in complements, reputation and brand name)
(Teece, 1987)

• “Capturing value from technological innovation: Integration, strategic partnering, and licensing decisions”

• Innovators vs Imitator-Followers
  (innovators do not necessary hold the long-term market)

• Examples
  (RC Cola Diet vs Diet Coke, DEC vs IBM PC)

• Explanations
  (appropriability, dominant design, and complementary assets)
(von Hippel, 2001)

- "Innovation by user communities: Learning from open-source software"

- **User Innovation Communities**
  (ability to create exactly what it wants without requiring a manufacturer to act as its agent)

- **Examples**
  (Apache open-source software, high-performance windsurfing)

- **Required Incentives**
  (want to innovate, want to reveal innovations)
Caveats

• What are signs that an innovation should be killed?

• How does bureaucracy facilitate innovation?

• When do standards lead to less innovation?

• Can economic theories predict rather than explain?