

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?