

Managing the Innovation Process

Origin of the Process

Overview

- Take-Away
- Required Readings
- Supplemental Readings
- Caveats

Take-Away

- Innovations are not created equal
- Innovations are often modified rather than original
- Innovations have costs for productivity...but also drive economic growth
- Innovations are driven by leaders (and their firms)

(Christensen, 1997)

- *“The innovator's dilemma - Chapter 1: How can great firms fail? Insights from the hard disk drive industry”*
- Innovator's Dilemma
(keeping close to customers – sometimes to the fatal end)
- Sustaining vs Disruptive Technologies
(increased rate vs redefined performance trajectory)
- Established vs Entrant Firms
(founded before vs after advent of the technology)

(Morison, 1966)

- *“Gunfire at sea: A case study of innovation”*
- Continuous-Aim Firing
(keep sight and gun barrel on target throughout ship roll)
- Basic Invention vs Combined Elements
(gun, elevating gear, and telescope were combined)
- Scott -> Sims -> Teddy Roosevelt
(personality / status / determination + innovation = adoption)

(Hounshell, 1984)

- *“From the American system to mass production, 1800-1932 - Introduction”*
- Mass Production
(assembly line manufacturing techniques)
- Examples
(Henry Ford’s Model T, Eli Whitney’s cotton gin)
- Productivity Dilemma
(increase product changes = decrease productivity)

(Mowery & Rosenberg, 1998)

- *“Paths of innovation: Technological change in 20th century America - Introduction”*
- Alfred North Whitehead
(“The greatest invention of the 19th century was the invention of the method of invention”)
- Institutionalization of Scientific Method (R&D)
(incremental learning, modification, and refinement)
- Economic Growth
(a consequence of technological change...)

(Tedlow, 2001)

- *“Giants of enterprise: seven business innovators and the empires they built - Introduction: The big picture”*
- Founding and Building New Businesses
(Americans do best???)
- Innovators
(Carnegie, Eastman, Ford, Watson, Revson, Walton, Noyce)
- Innovators vs Innovating Companies
(business leaders who become inseparable from their firms)

Caveats

- How often do disruptive technologies come along?
- How often do innovators have access to President?
- What about small firms with little R&D budget?
- What about all of the businesses leaders that fail?