

# Managing the Innovation Process

Technical Communication

# Overview

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

# Take-Away

- Innovation can be fostered in R&D labs
- Innovation is driven by scientists and engineers
- Innovation requires organizational boundary roles
- Innovation benefits from technical communication

# (Allen, 1977)

- *“Managing the flow of technology – Chapter 3: The communication system in technology: An overview”*
- Scientists vs Engineers  
(learning for learning’s sake vs professional preparation)
- Science vs Technology  
(literature-based knowledge vs firm-based knowledge)
- Gap-Filling Science  
(reduce delay of technical communication between science and technology)

# (Tushman, 1977)

- *“Special boundary roles in the innovation process”*
- Boundary Roles  
(link internal network to external sources of information)
- Internal Communication Stars  
(consulted most frequently on technical matters)
- Two-Step Process  
(technical staff communicate with internal stars, who in turn communicate outside of the organization)

# (Ebadi & Utterback, 1984)

- *“The effects of communication on technological innovation”*
- Technological Innovation  
(projects funded by National Sea Grant Office)
- Researcher Communication  
(higher individual frequency of communication across projects associated with greater project success)
- Project Centrality  
(higher project centrality scores associated with greater project success)

# (Pelz & Andrews, 1966)

- *“Scientists in organizations: Productive climates for research and development – Chapter 3: Communication”*
- R&D Labs  
(services/equipment or interacting scientists?)
- Effective Scientists  
(sought and received more contact with colleagues)
- Controlling for...  
(experience, supervisory status, PhD, and lab type)

# (Sosa, Eppinger, et al. (2002))

- *“Factors that influence technical communication in distributed product development”*
- Communication Drivers  
(interdependence, organizational bond)
- Communication Barriers  
(physical distance, *overlapping time, cultural differences*)
- Communication Media  
(preferences shift depending on physical distance)

# Caveats

- How are scientists and engineers similar?
- When are boundary roles counter-productive?
- What if nobody wants to communicate with you?
- Does the content of communication differ by media?