# NCLC 475 Multimedia Research and Project Development

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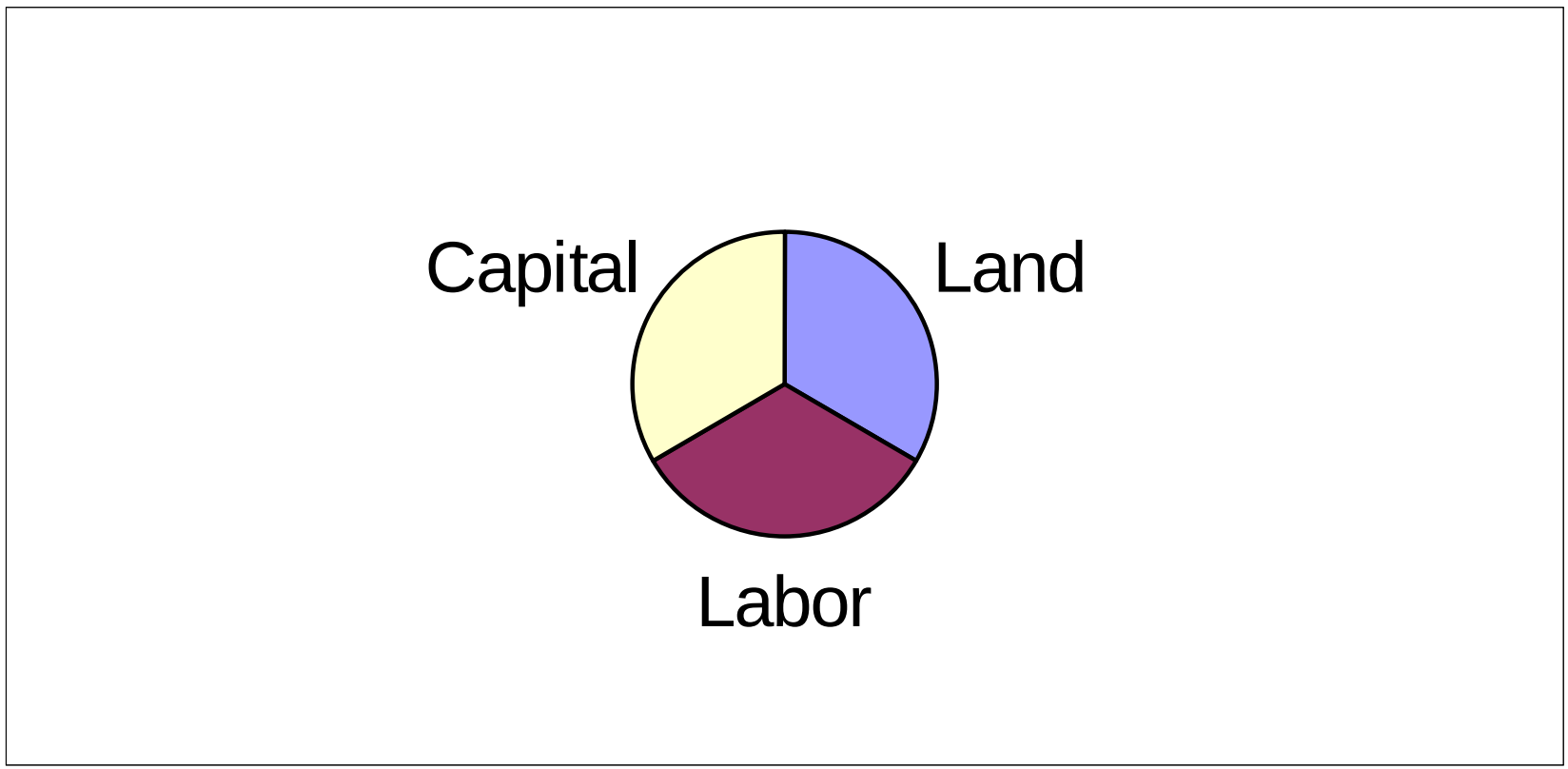
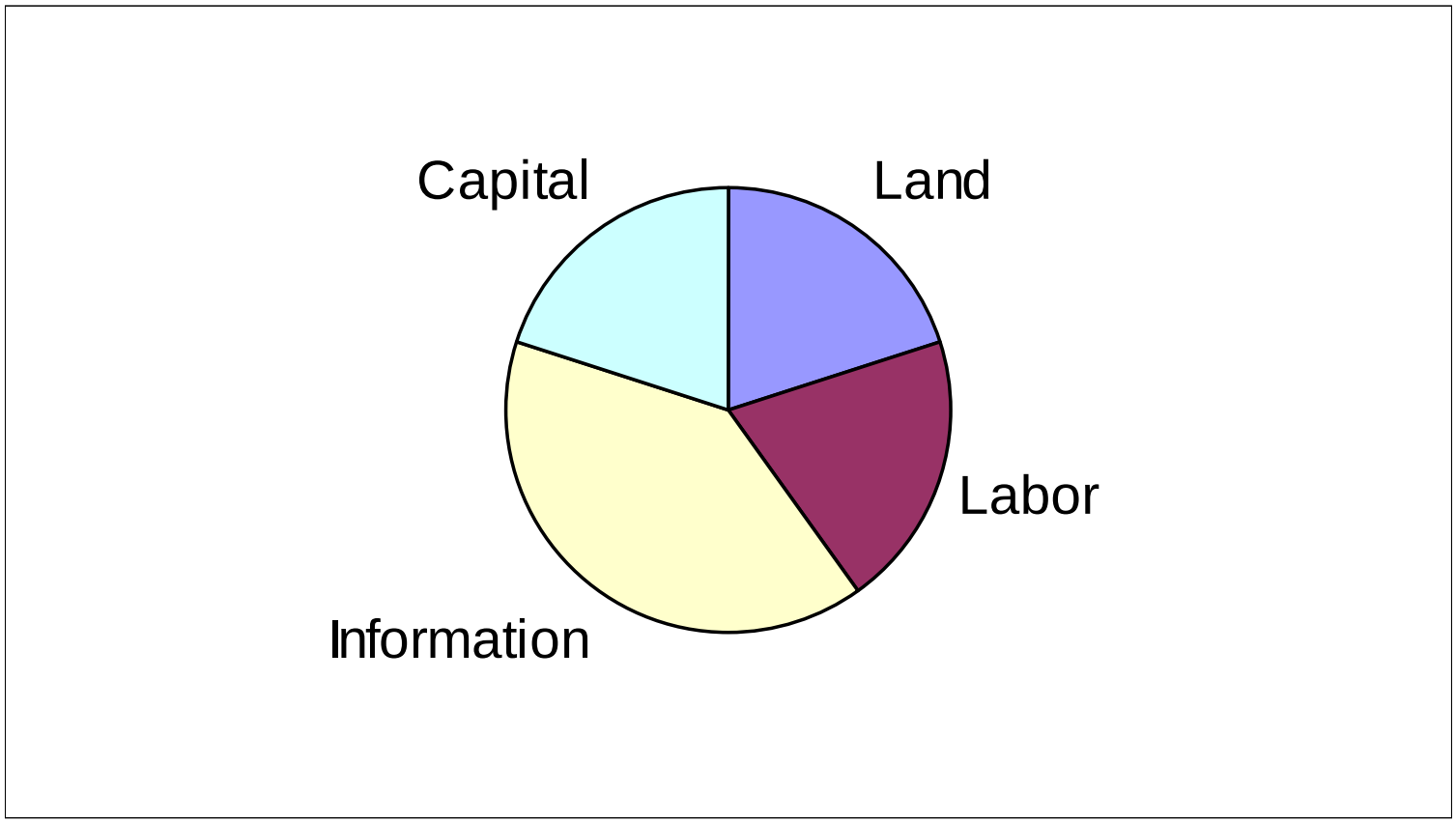
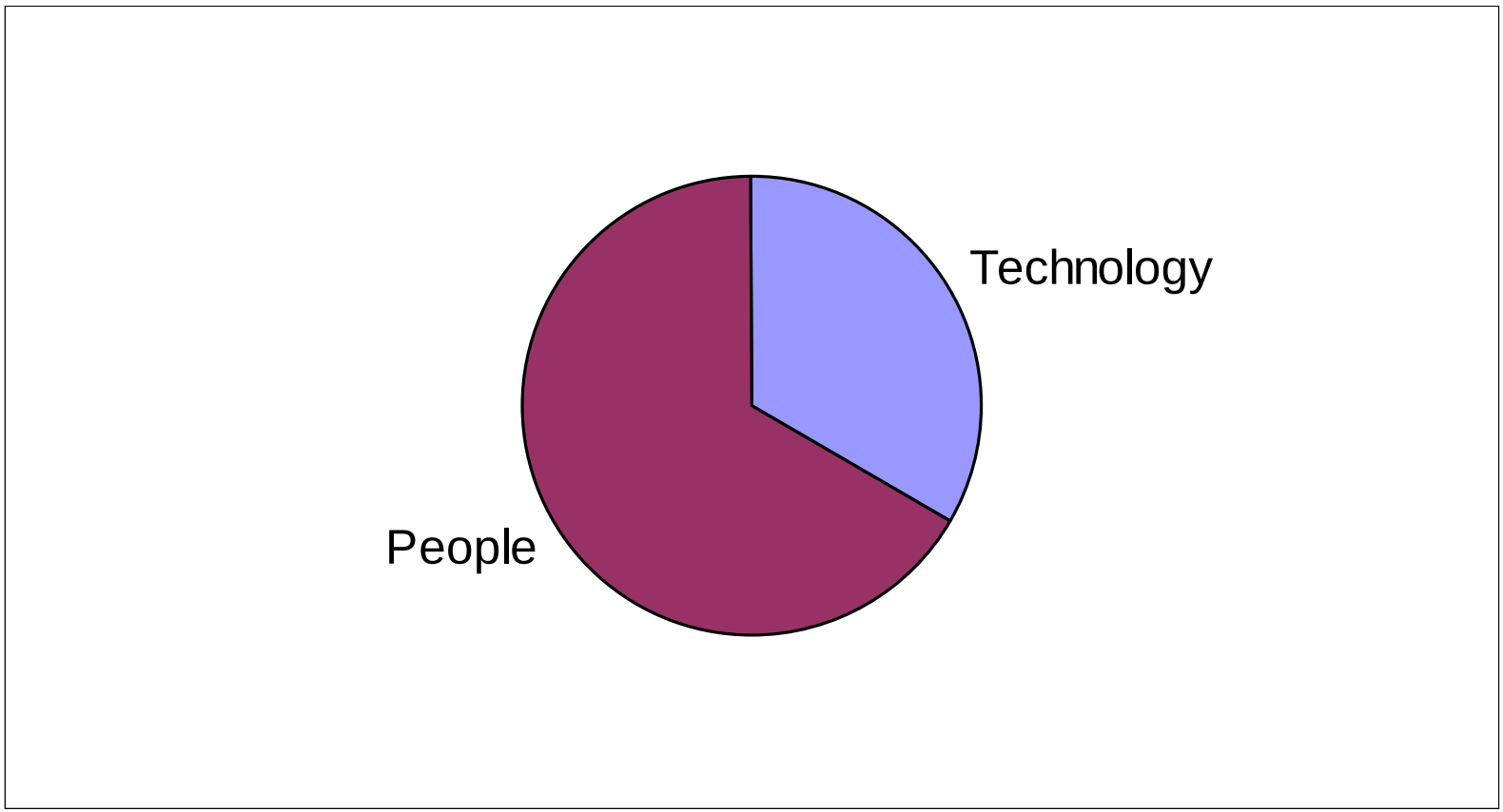
# Fundamental Human Resources (Pre-Internet)



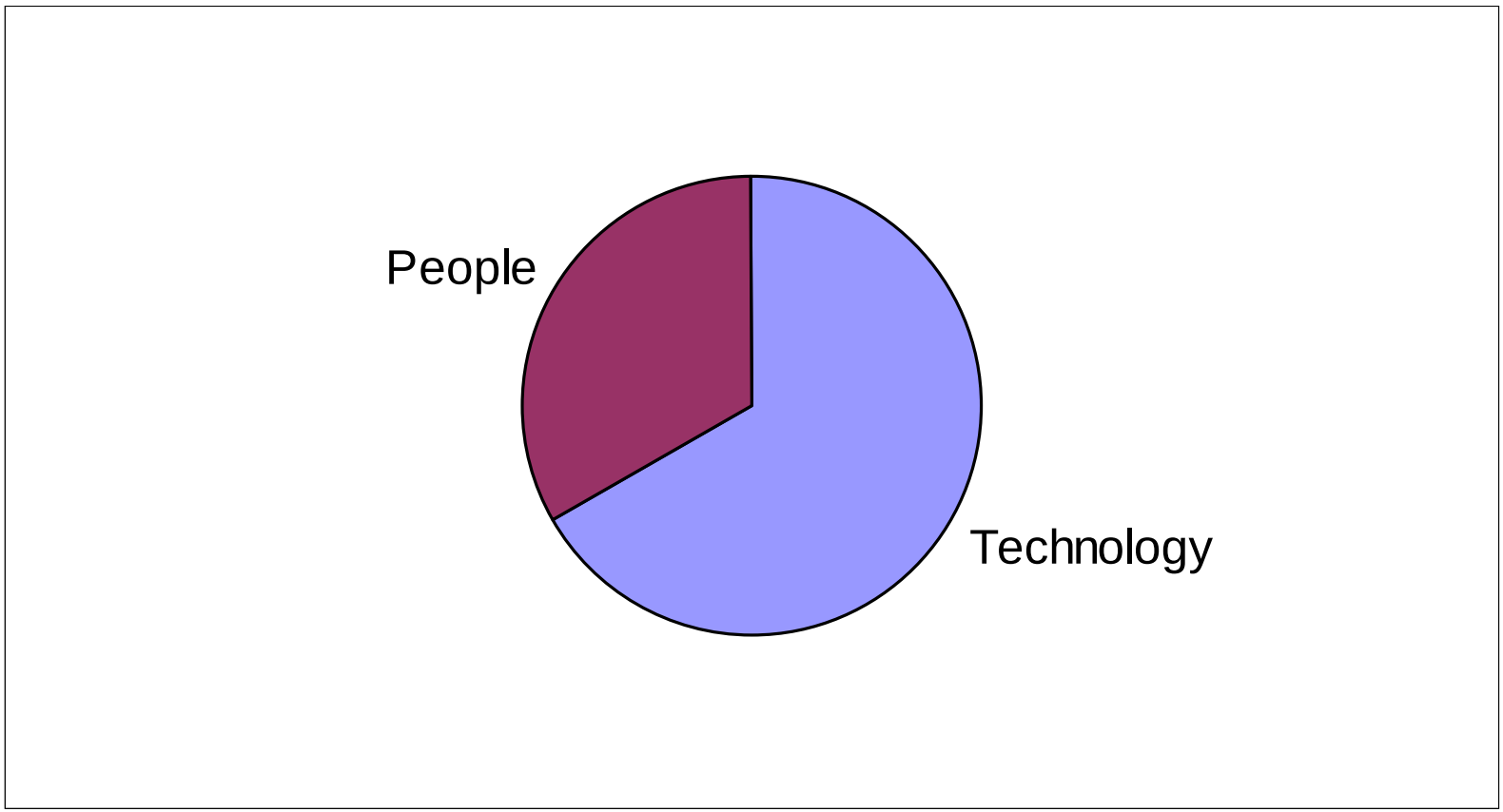
# Fundamental Human Resources (Post-Internet)



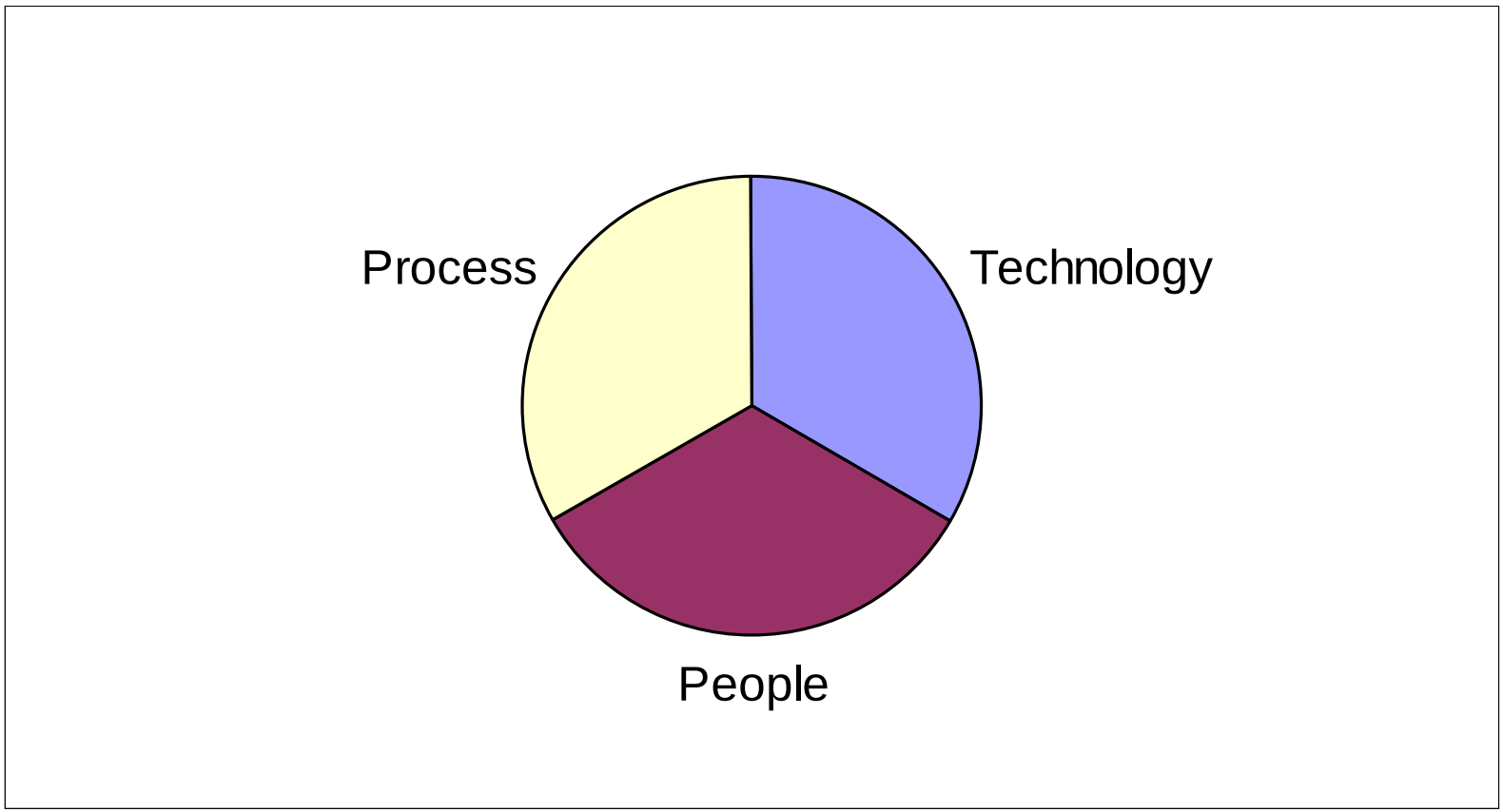
# Multimedia Development "The Early Years"



# Multimedia Development "In the 90s"



# Multimedia Development - Moving Forward



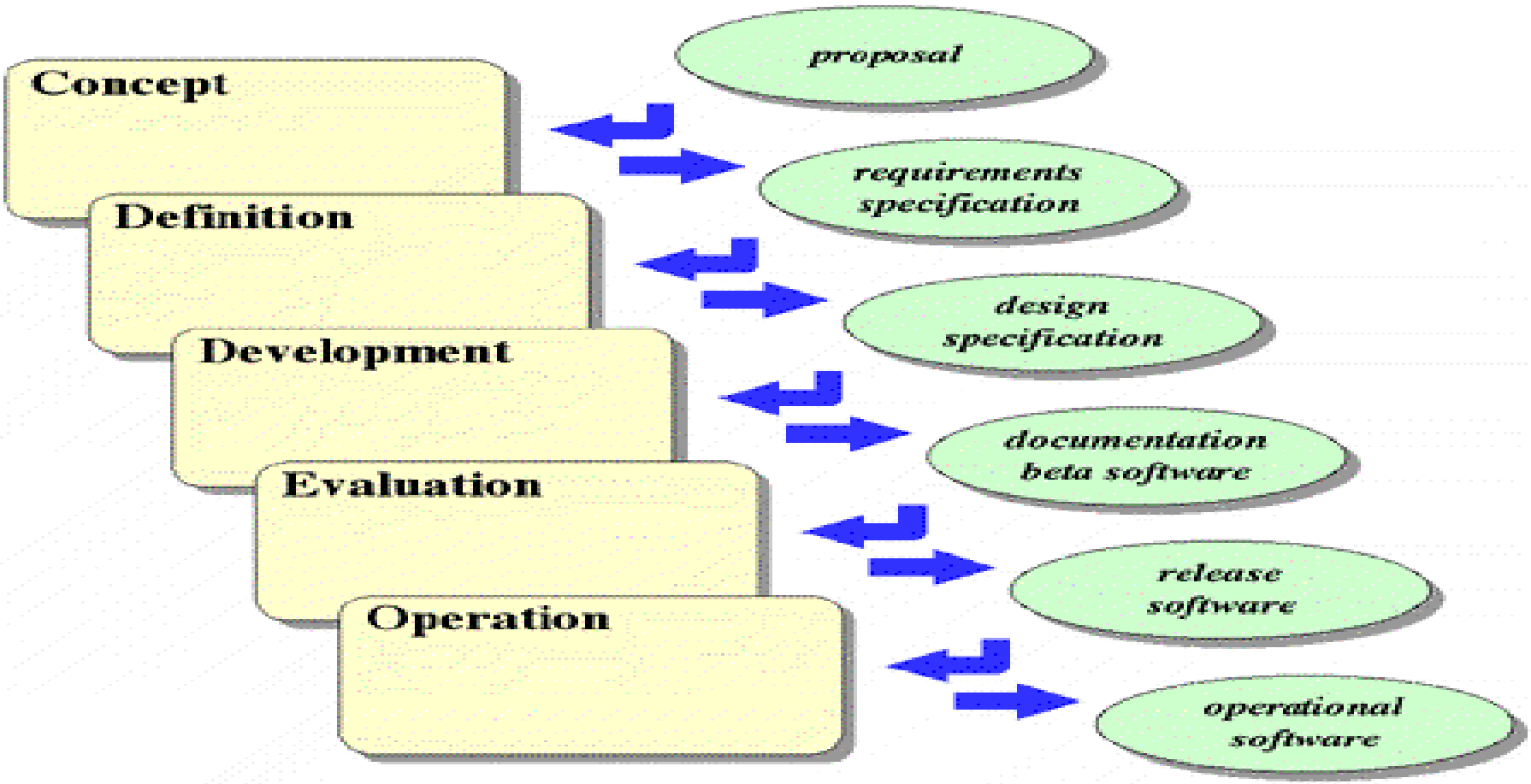
# Why is the Process Important

- “If the process is weak, the product will undoubtedly suffer” (Davis, 48)
- Technology will begin to dictate the direction of the project
  - Y2K bug - who knew?
  - SDI - feasibility
- Technology does not have a contingency plan . . . What’s next?
  - OS/2
  - Design Issues in Multimedia (Retirement?)

# Software Engineering

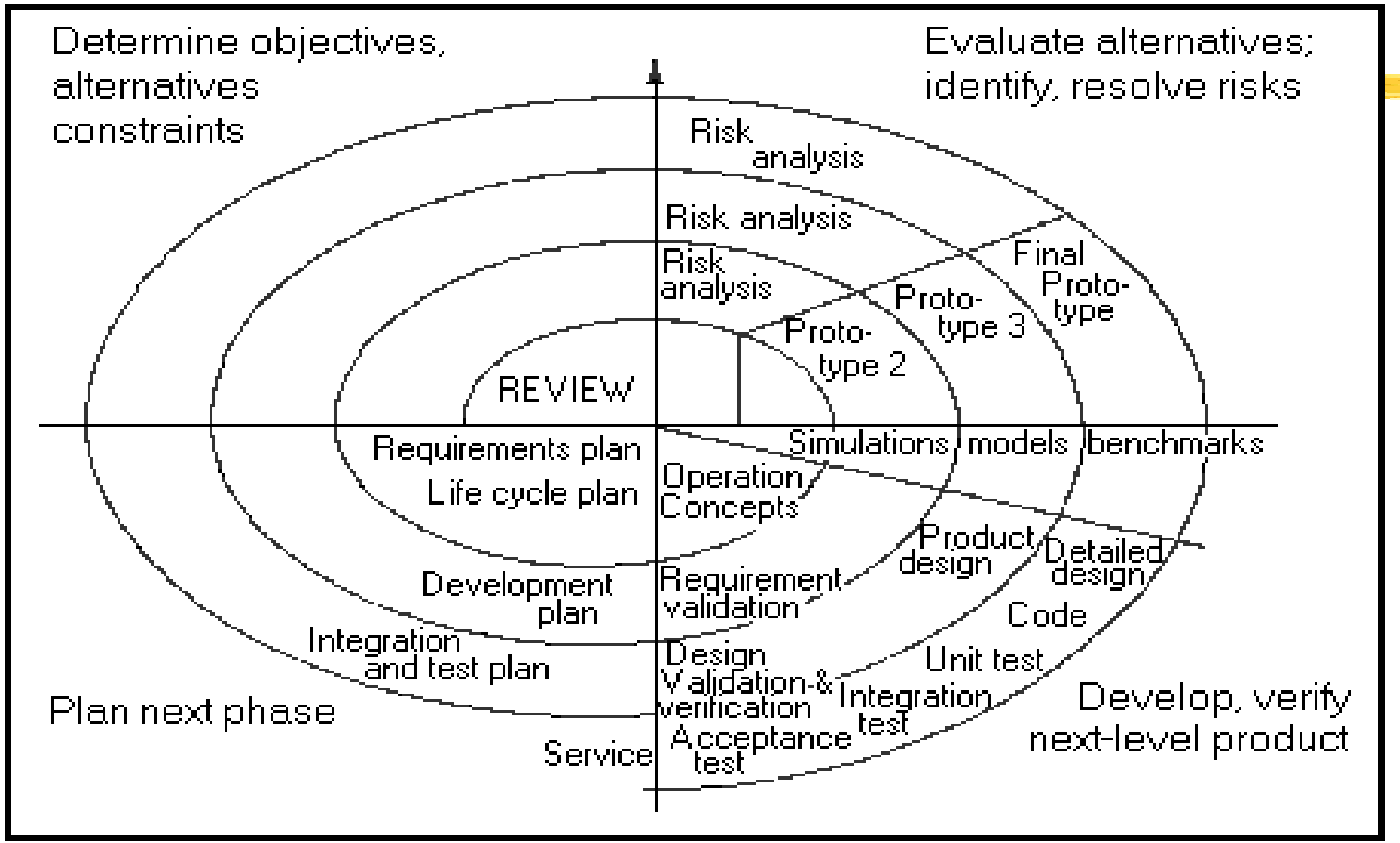
- SW. Engineering - the establishment and use of sound engineering principles in order to obtain, economically, software that is reliable and works efficiently on real machines
- SW. Engineering Models
  - Linear Sequential (Waterfall)
  - Prototyping Model (Spiral)
  - Incremental Model

# Waterfall Model



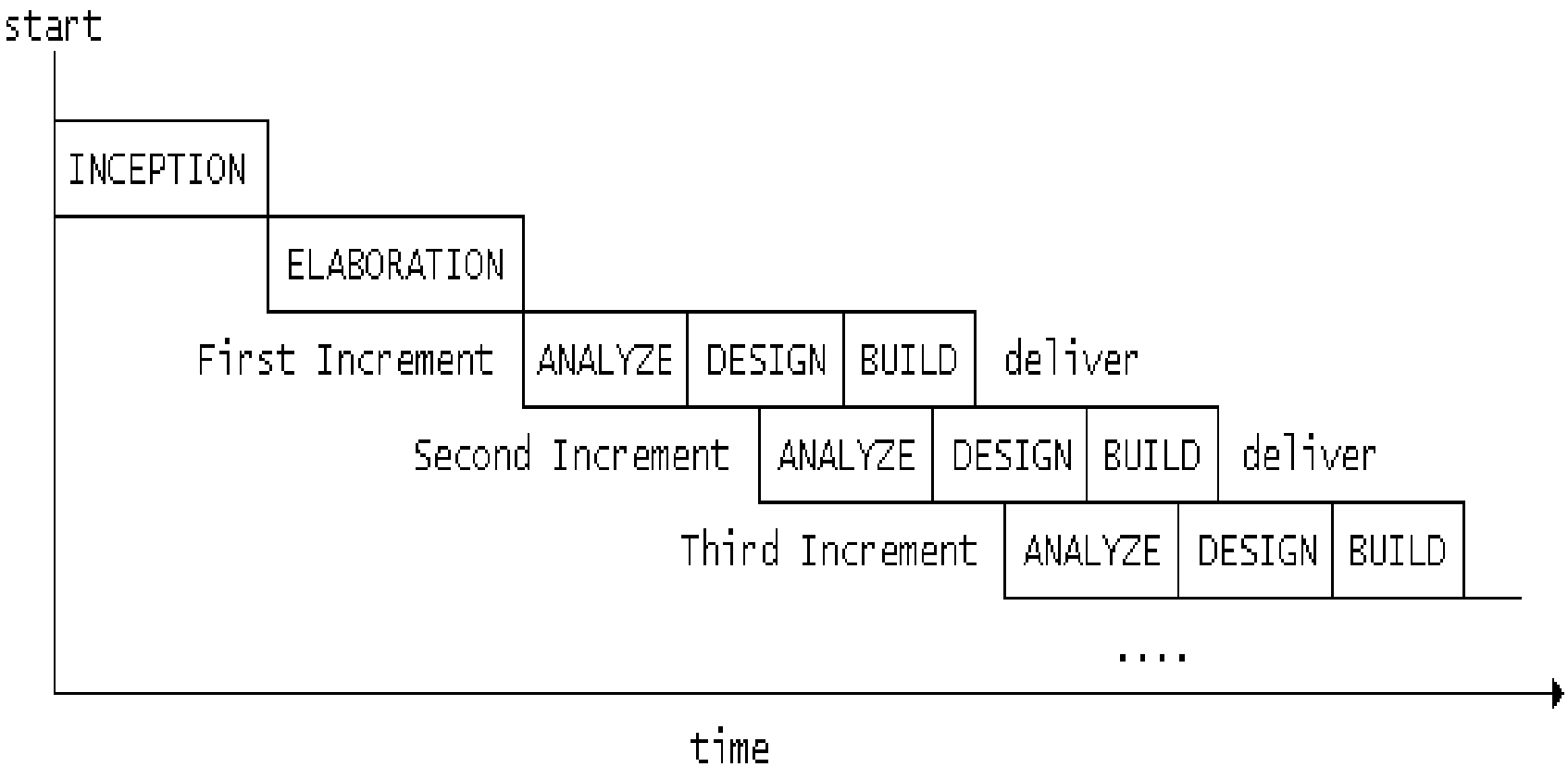

http://www.cs.colorado.edu/~sanders/cs4308/class/guide/lifecycle/lifecycle.html

# Spiral Model




Example of a Spiral Development Process [Boehm] p.434

# Incremental Model




http://www4.allencol.edu/~dlm1/it532/class03/devincre.html

# In Class Assignment

- The USPS has contracted your team to redesign their postal sorting system (packages and flat mail). Without discussing ‘how’, describe how your model would be used to build this system. What are the benefits? Drawbacks?

# Multimedia Development

- Follows the spiral model
  - Repeated cycles of consideration, examination, revision and re-testing)
- Differences
  - Multimedia productions face fiscal realities
  - Marketplace rules (Olympics/video games)
  - Testing is more difficult

# Usability is Missing from SW Eng. Models

- The market is dominated by products that are technically sophisticated to use. These products reflect the process by which it was developed. When developing a product, engineers typically start by deciding what functionality should be provided with the bulk of the time spent on designing and implementing these features . . . User interface is seen only as a front end.
  - Isaacs et al.

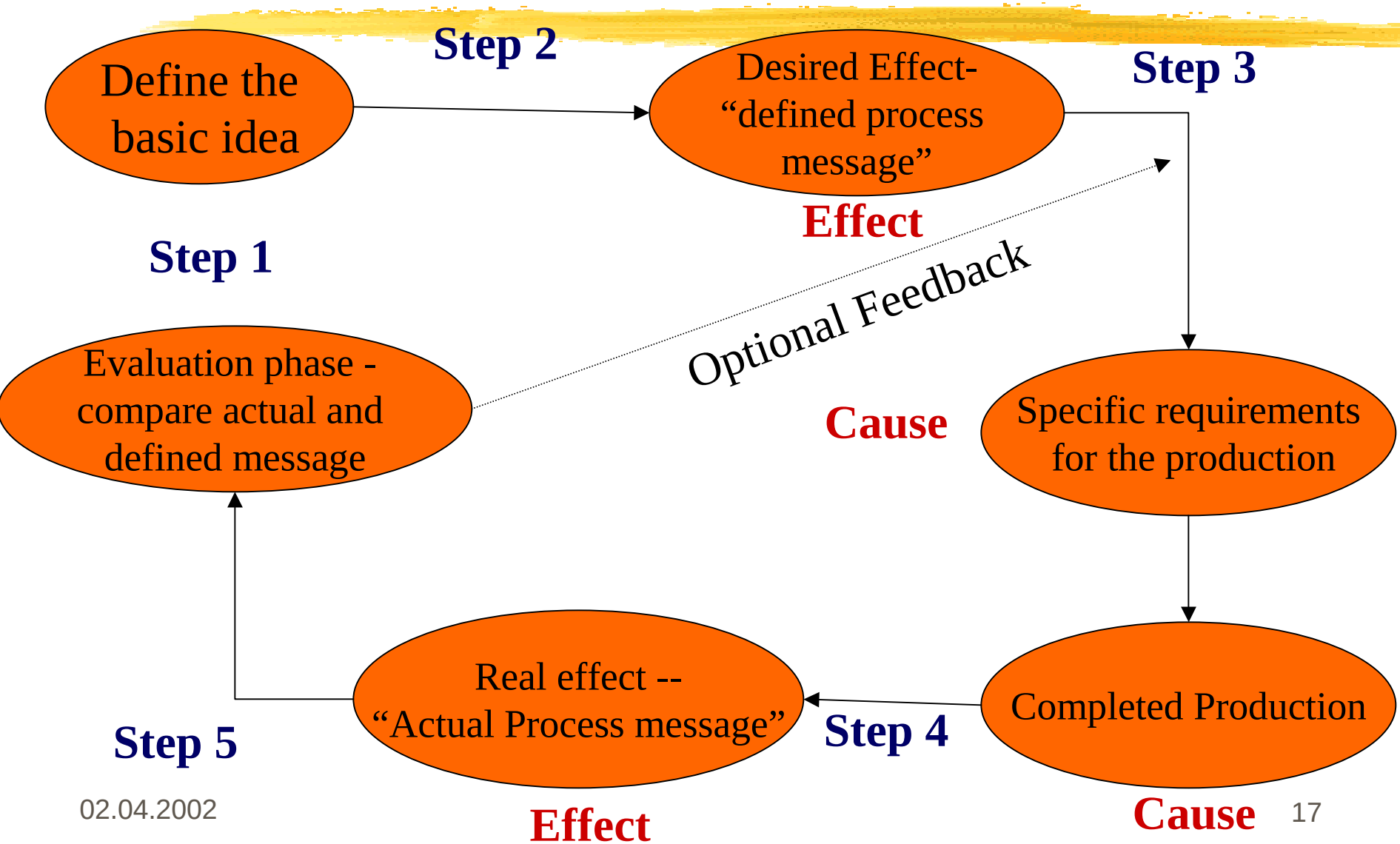
# Effect to Cause Model

- Entails thinking in terms of the effect that the developer wants to produce in the user
- First attempt to define the message that should be received by a viewer (the effect) and then deciding what content and production techniques will be needed to create the message (the cause)

# Effect to Cause Model (con'd)

- Step 1: An idea is translated into a statement of which effects are desired in the user of a multimedia production
- Step 2: A determination is made of the sort of multimedia production that would cause those effects and what would be required to create such a production
- Step 3: The finished production is tested with actual users to determine the effect that is actually produced
- Step 4: The actual effect is compared with the desired effect (validation and verification)
- Step 5: In an evaluation phase, the actual process message is compared with the defined message (V&V). The closer they are, the more successful the product is considered.

# Effect to Cause Model (Zettl)



# For next week

- Your team has been approached by a client who wants you to produce a multimedia tour of a new mall, including interactive visits to the major stores and other attractions.  Think about how you would proceed with this commission by performing steps 1 through 4 of the Effect-to-Cause model.

# References


- [Boehm86] Boehm, "A Spiral Model of Software Development and Enhancement" in ACM Software Engineering Notes, August 1986 pp.14-24
- Davis, M.J. “Process and Product: Dichotomy or Duality,” Software Engineering Notes, ACM Press, vol. 20, no. 2, April 1995, pp. 17-18
- Isaacs, Ellen et al. “Lessons Learned from a Successful Collaboration Between Software Engineers and Human Interface Engineers” In Taylor and Coutaz (1995) pp. 232-240
- Pressman, Roger S. “Software Engineering: A Practitioners Approach” NY:McGraw Hill 1997.
- Tannebaum, Robert S. “Theoretical Foundations of Multimedia” NY:Computer Science Press 1998.
- Zettl, Robert. “Video Basics” Belmont, CA: Wadsworth 1995.