

# Modeling Scholarly Communication as an Information System

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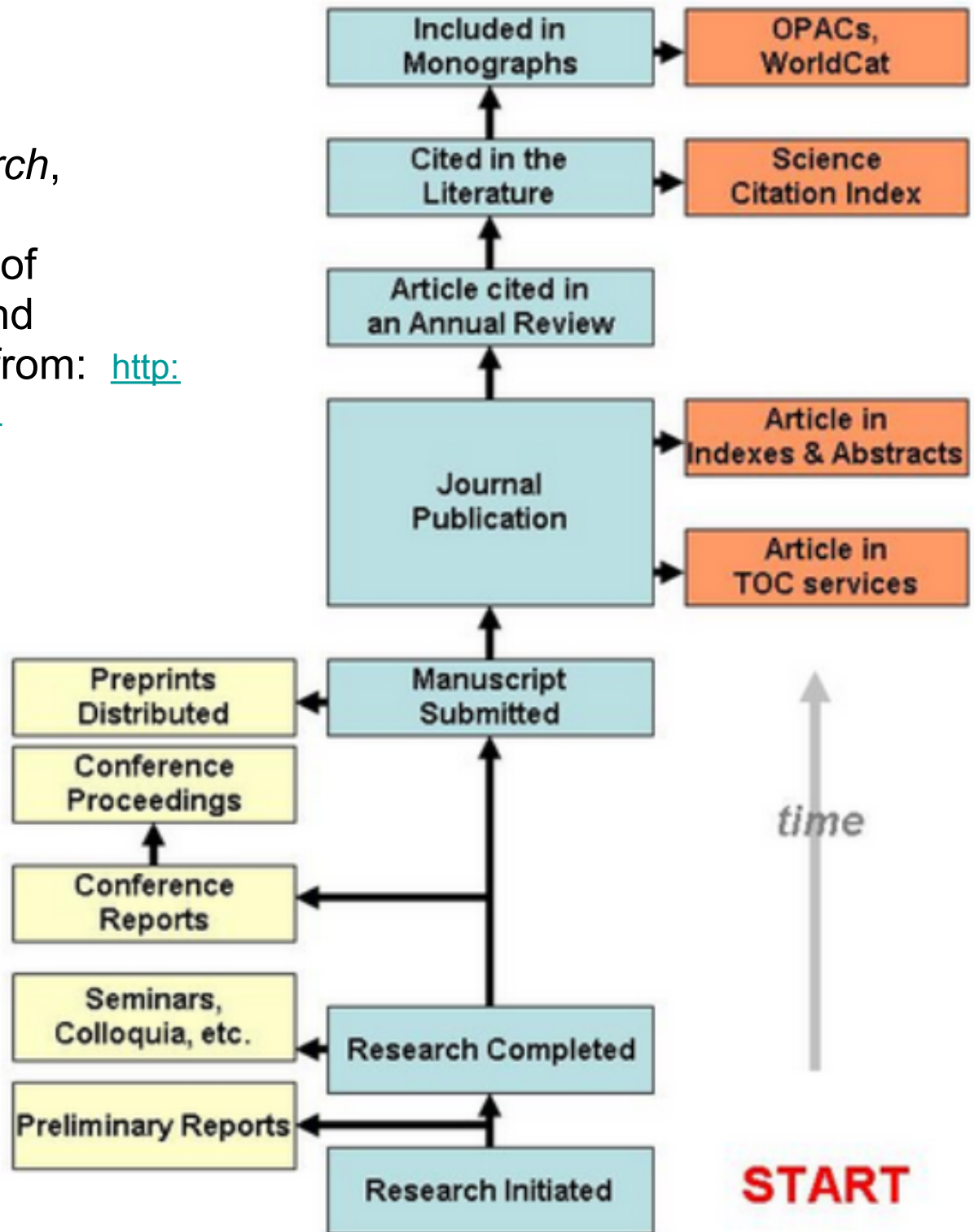
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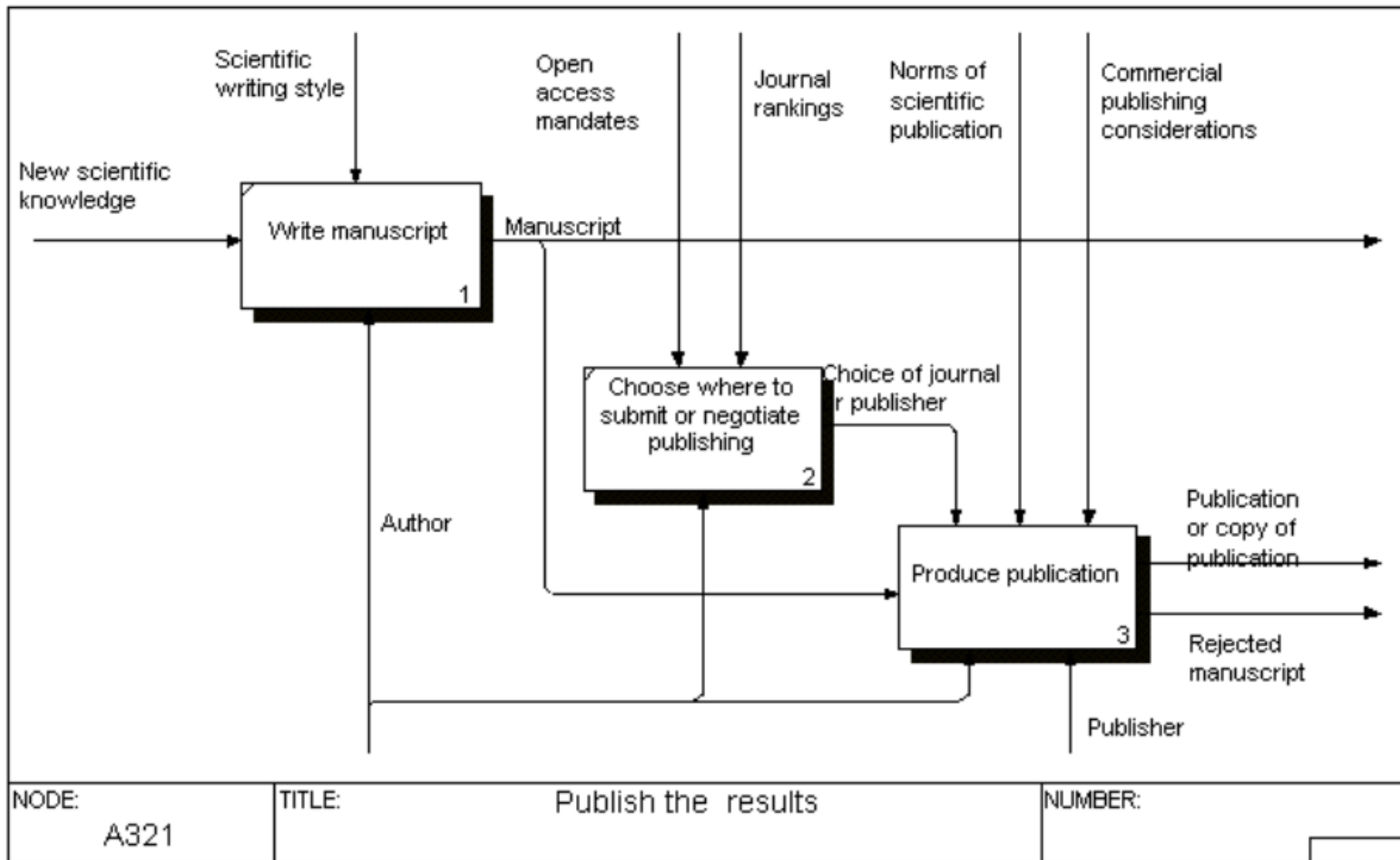
# Agenda

- Existing scholarly communications models
- The i\* framework
- Case study: economics
- Simple case: researcher / publisher
- Zoom out to full model

# Scholarly Communications Models

Swisher, B. (2005). *Electronic access to social science research*, Course LIS 5703, Lecture notes. Norman, OK: University of Oklahoma, School of Library and information studies. Retrieved from: <http://www.ou.edu/ap/lis5703/sessions/s06.htm#Notes>





Björk, B. C. (2007). A model of scientific communication as a global distributed information system. *Information Research*, 12(2). Retrieved from: <http://informationr.net/ir/12-2/paper307.html>

# Why another model?

- Other models show interactions between the system and the environment
  - Move focus to relationships between social actors
- Depict the goals and dependencies of individual actors
- Model internal motivations
- Look for efficiencies and alternate ways of satisfying goals

# The i\* framework

- Tool for early systems requirements analysis
- Describe and analyze social relationships
- i\* allows us to model the underlying motivations behind a system
- Modeling goals is important, as new systems rearrange relationships among social actors

# Case study: Economics

- Simple case

- Advancement process based heavily on article publication in prestigious journals
- Extreme time lag to publication: 2-6 years
- Book-length scholarship is rare



# Case study: Economics

- Adaptations

- Sharing of work-in-progress

- Conferences, colleague network

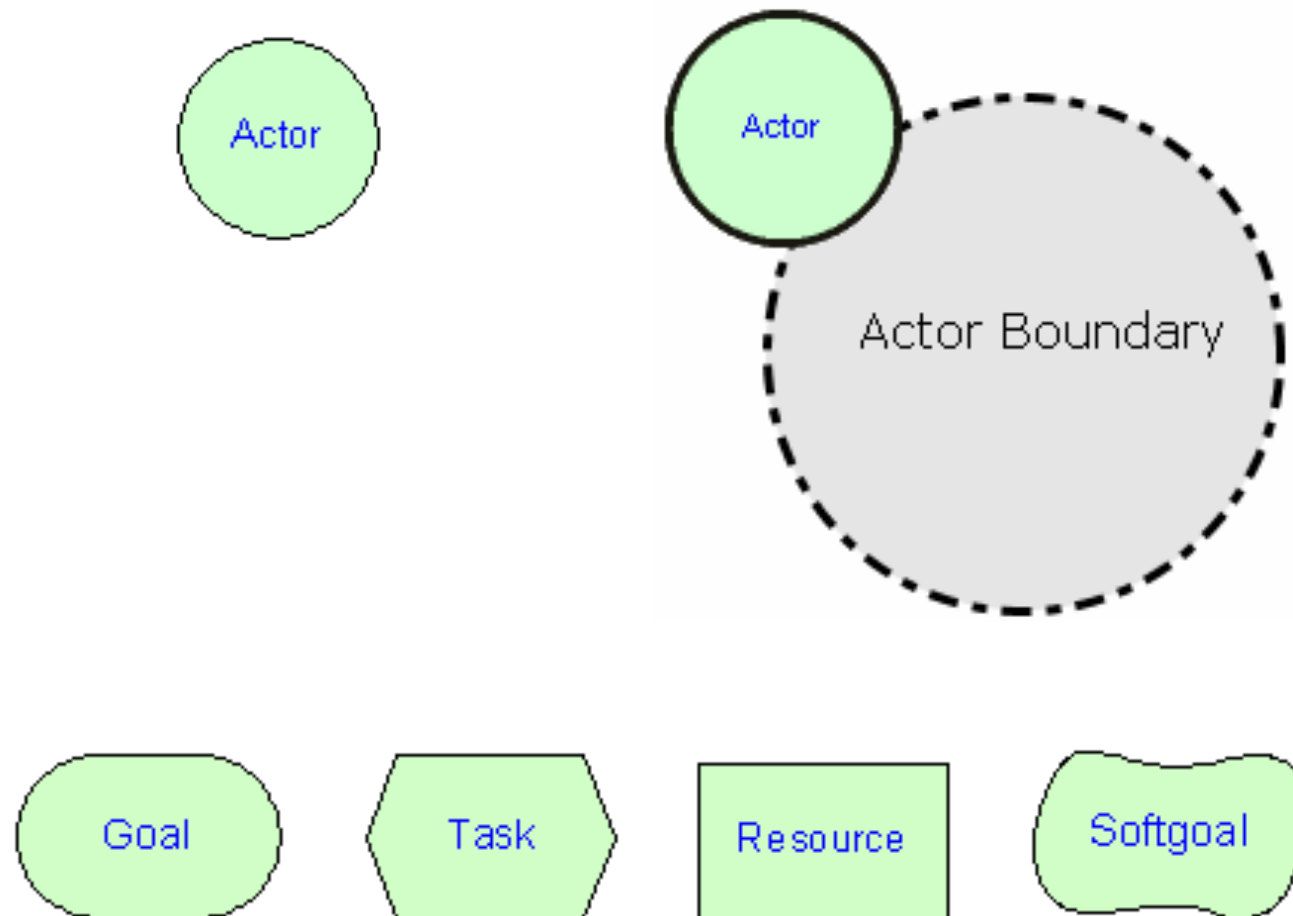
- Informal peer review

- Working paper dissemination

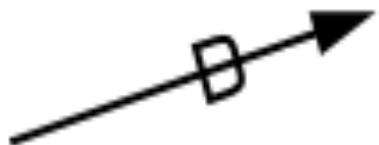
- Working paper repositories (SSRN, NBER)

- Personal websites

# i\* Actors and Elements



# i\* Links and Contribution Links



Dependency



Means-Ends



Decomposition



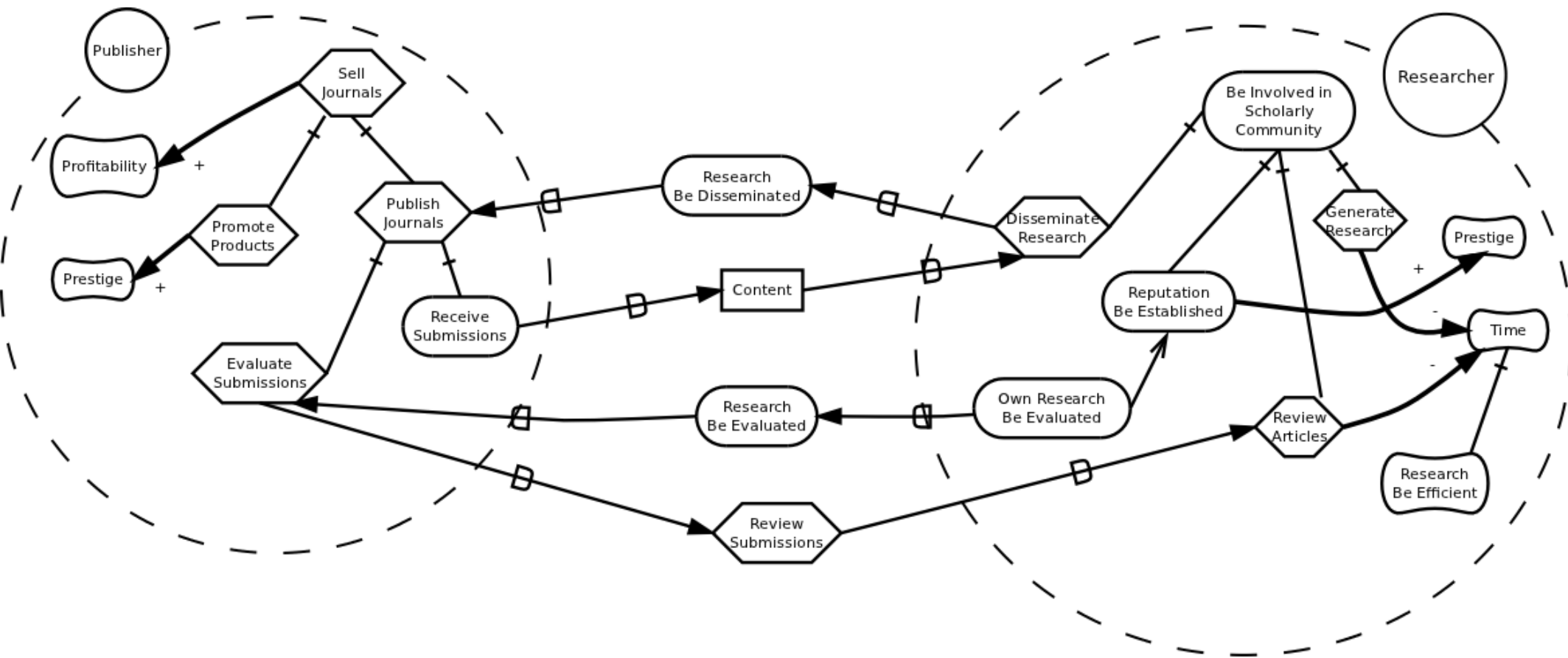
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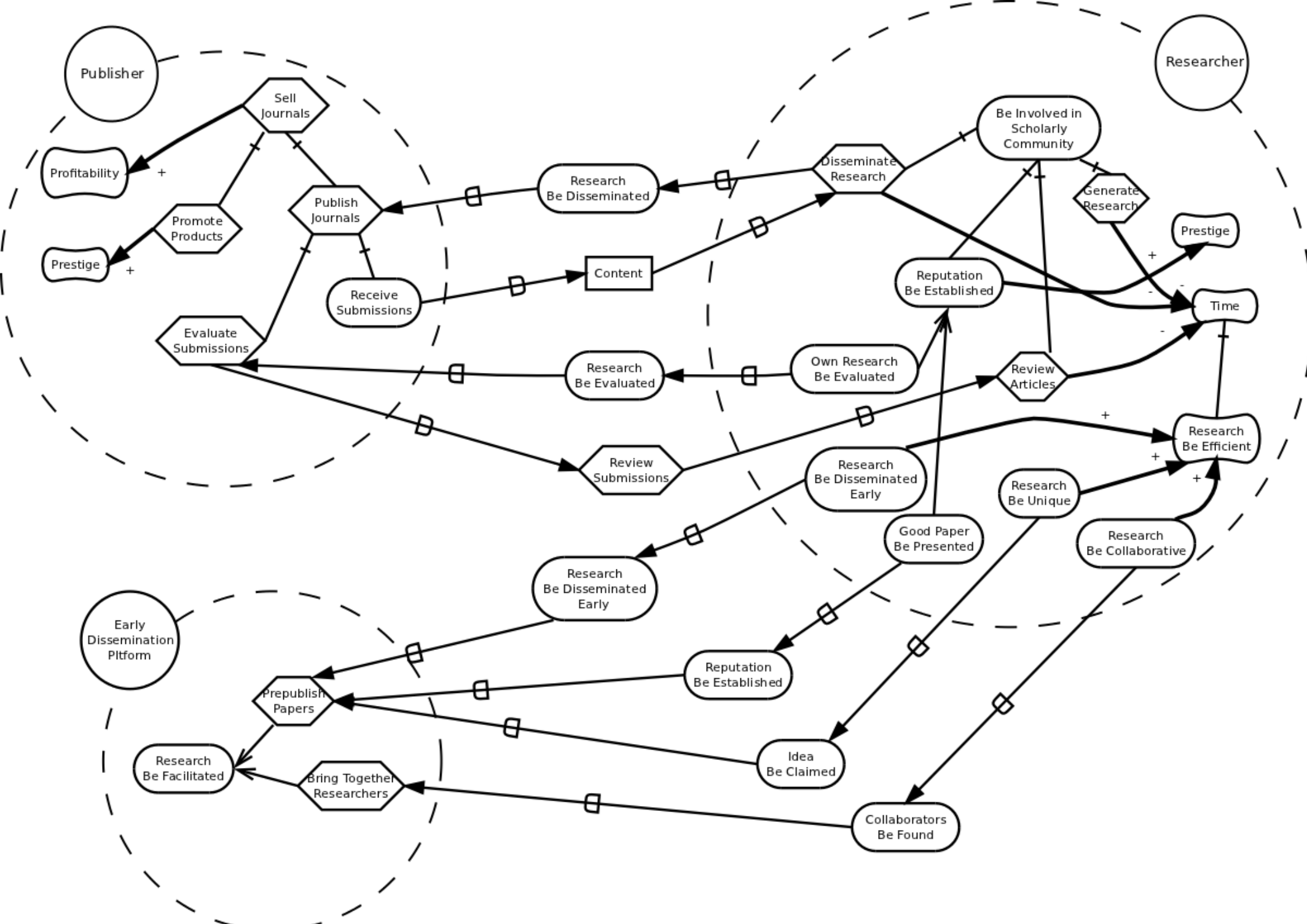
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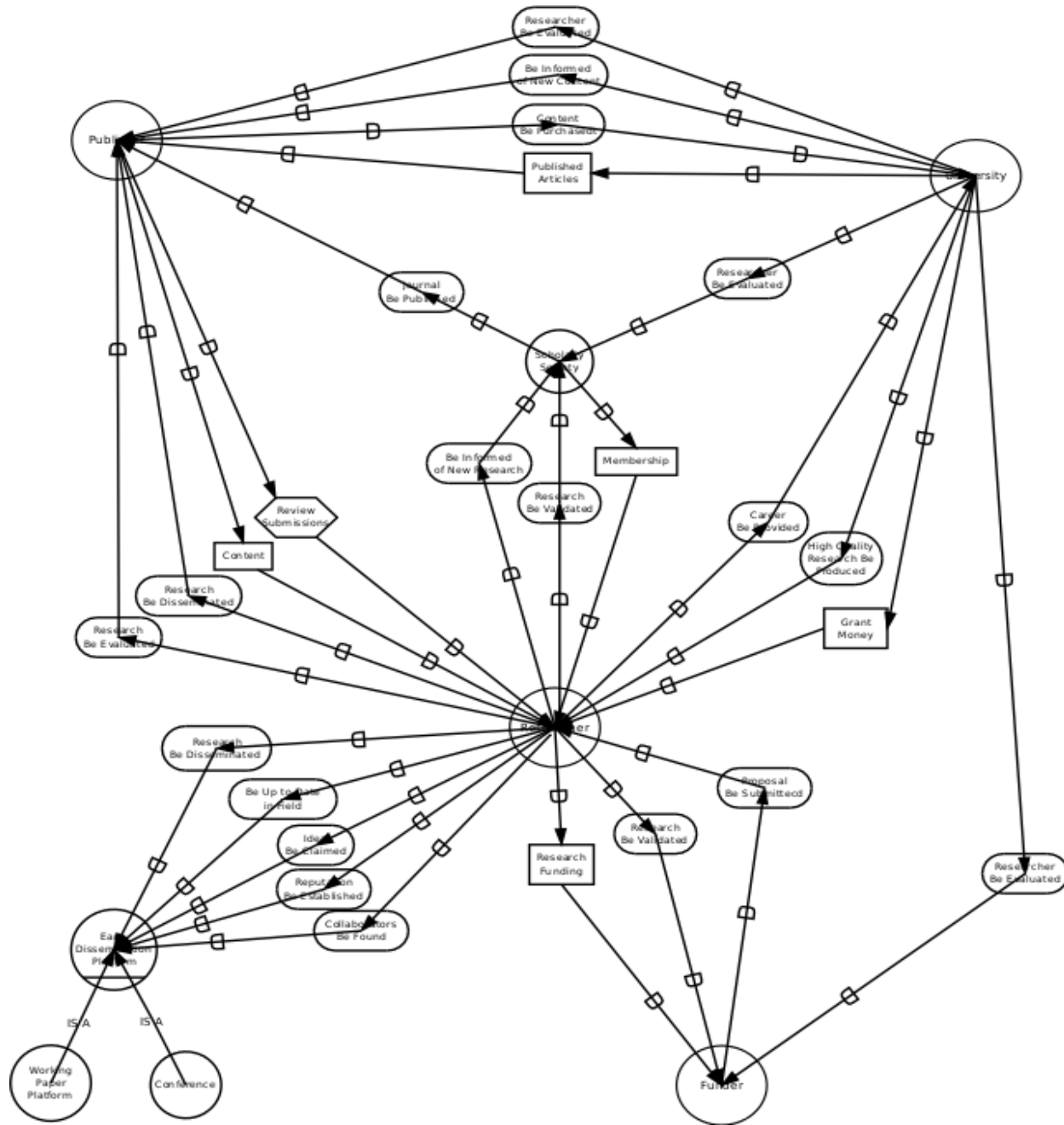
Example Strategic Dependency Diagram



Example Strategic Rationale Diagram



Example Strategic Rationale Diagram



Draft of Full Model - Economics

# Early findings and limitations

- Structure of the framework offers a different lens
  - Dependencies between actors become evident
  - Flexibility to show motivations
- Economics
  - Redundancies in review and dissemination
  - Prestige a common goal shared by all actors
- Challenges to capture goals
  - Some guesswork
  - Strength of motivations
- $i^*$  is an early requirements tool



# Future Research

- Model other disciplines
- Contrast efficiencies between disciplines
- Attempt to combine observed efficiencies into a recommended model
- Validate model
  - user interviews
  - review emerging data

# Questions?

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