Modeling Scholarly Communication as an Information System

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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
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

- Actor
- Actor Boundary
- Goal
- Task
- Resource
- Softgoal
i* Links and Contribution Links

- Dependency
- Means-Ends
- Decomposition
- Positive Contribution
- Negative Contribution
Example Strategic Dependency 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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