

Goal oriented Requirements Engineering

I* and related Approaches

Outline

- Introduction
- i* Framework
- Issues
- Solutions
- Conclusion

Introduction

Introduction

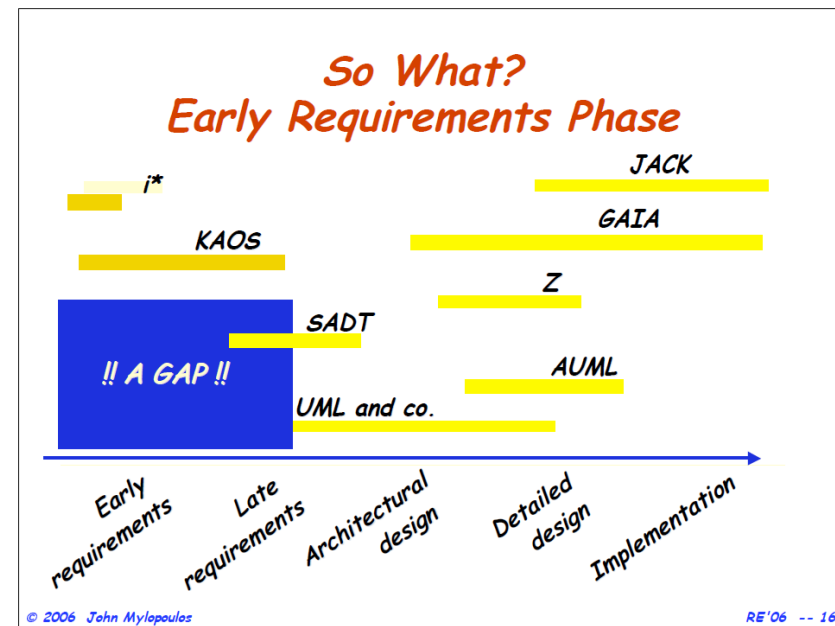
- „Much of requirements engineering research has taken as starting point the initial requirements statements, which express customers wishes about what the system should do.“ (Yu 1997)
- Objective: Produce a requirements document for the developers.

Phases of RE

- „Early phase“ <-> „Late phase“ in RE
- Important because:
 - Helps avoiding poor understanding of the domain
 - User need help with the first requirements
 - Systems should improve business processes
 - Deal with change

Early phase RE

- „traditionally informal“ (Yu 1997)
- „without much tool support“ (Yu 1997)
- i* is an early phase tool



I* Framework

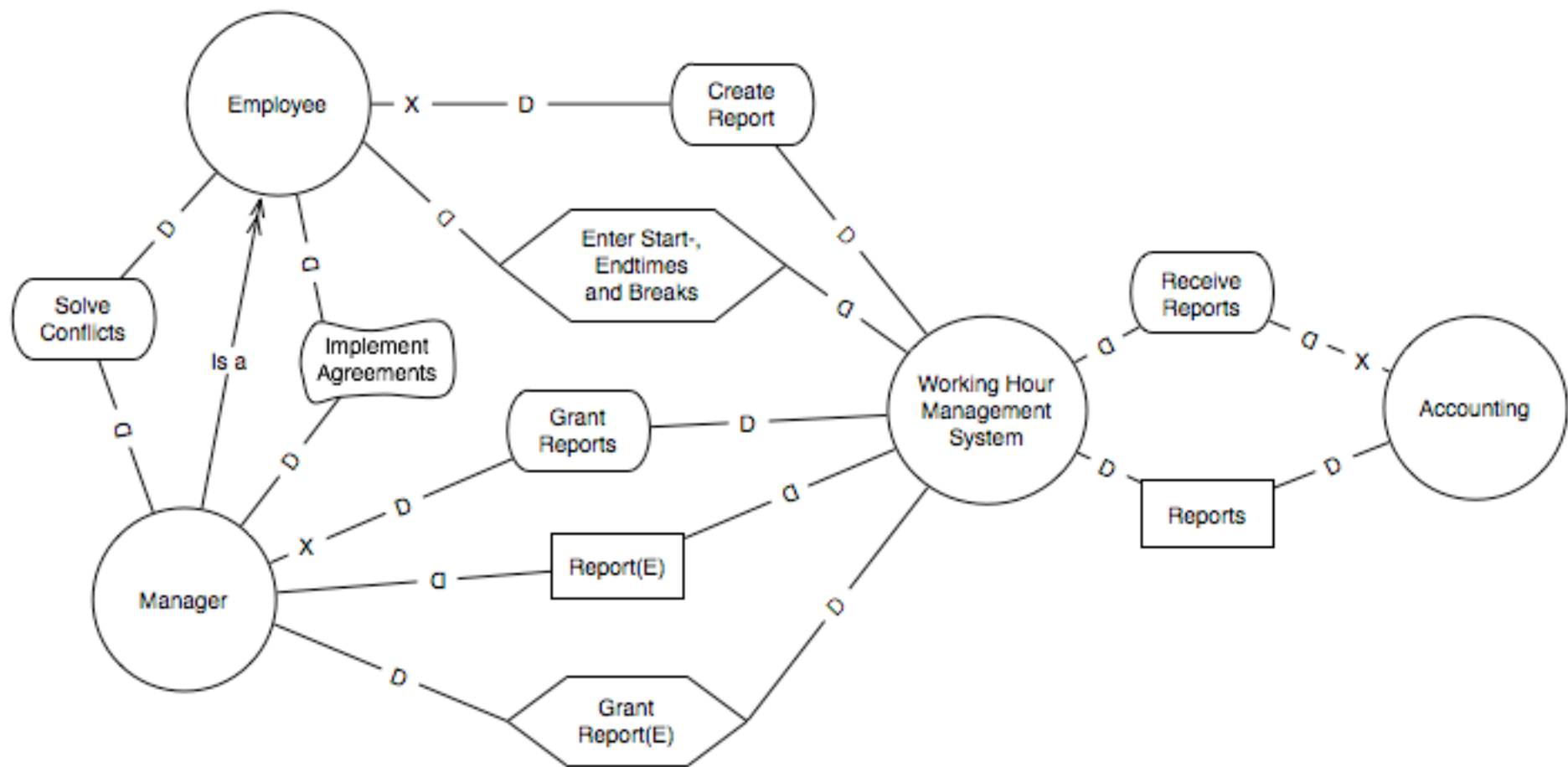
Overview

- Focus on early stages of requirements engineering
 - Traditionally this was done informally
- Focus on the “why” questions instead of “what”
- Intentional actors as the key participants
 - Goals to achieve
 - Tasks to fulfill
 - Depend on other actors

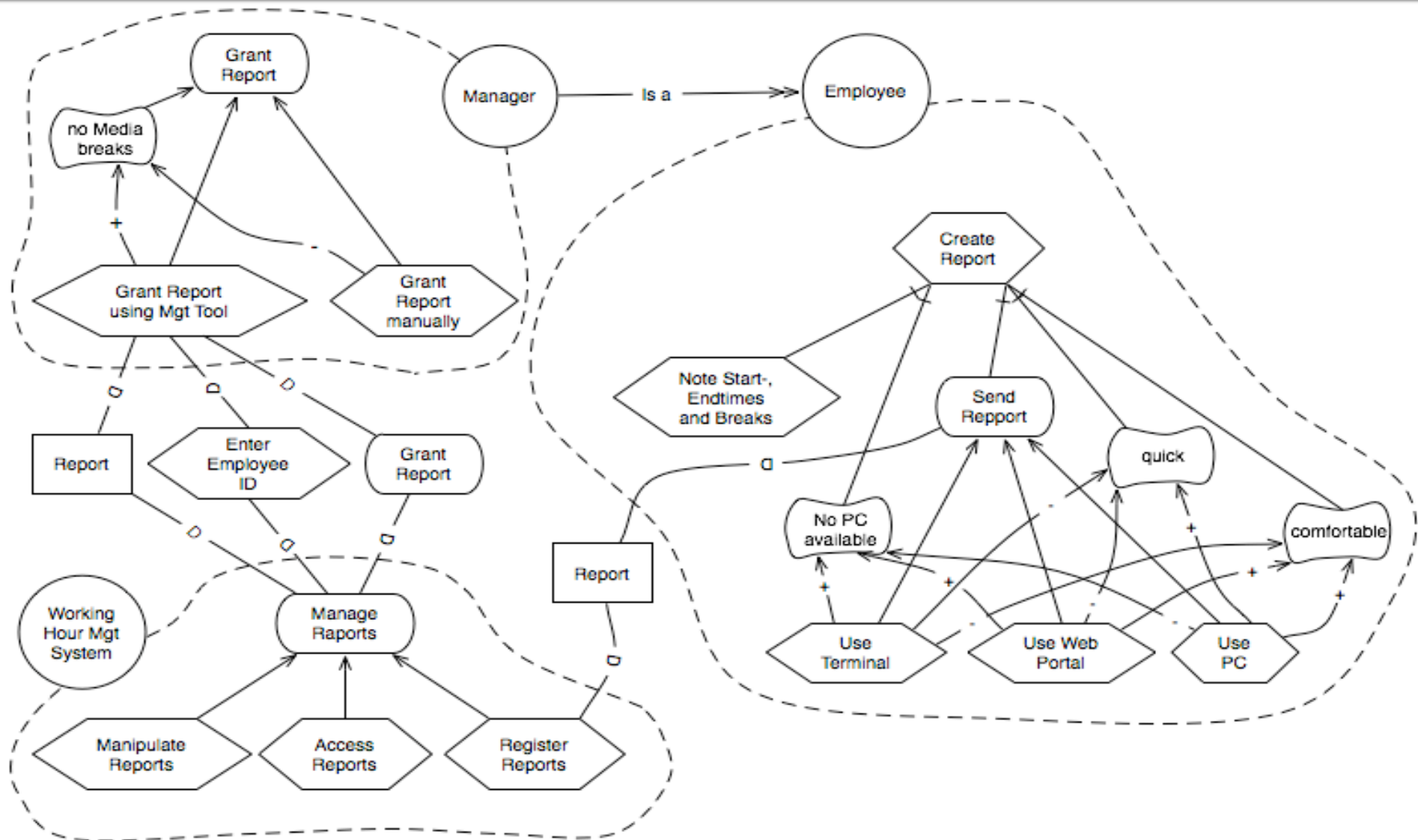
Parts of the Framework

- Two main aspects:
 - Strategic Dependency Model
 - Model the embedding of systems in its environment
 - Dependency relationships
 - Strategic Rationale Model
 - Model the stakeholder's interests

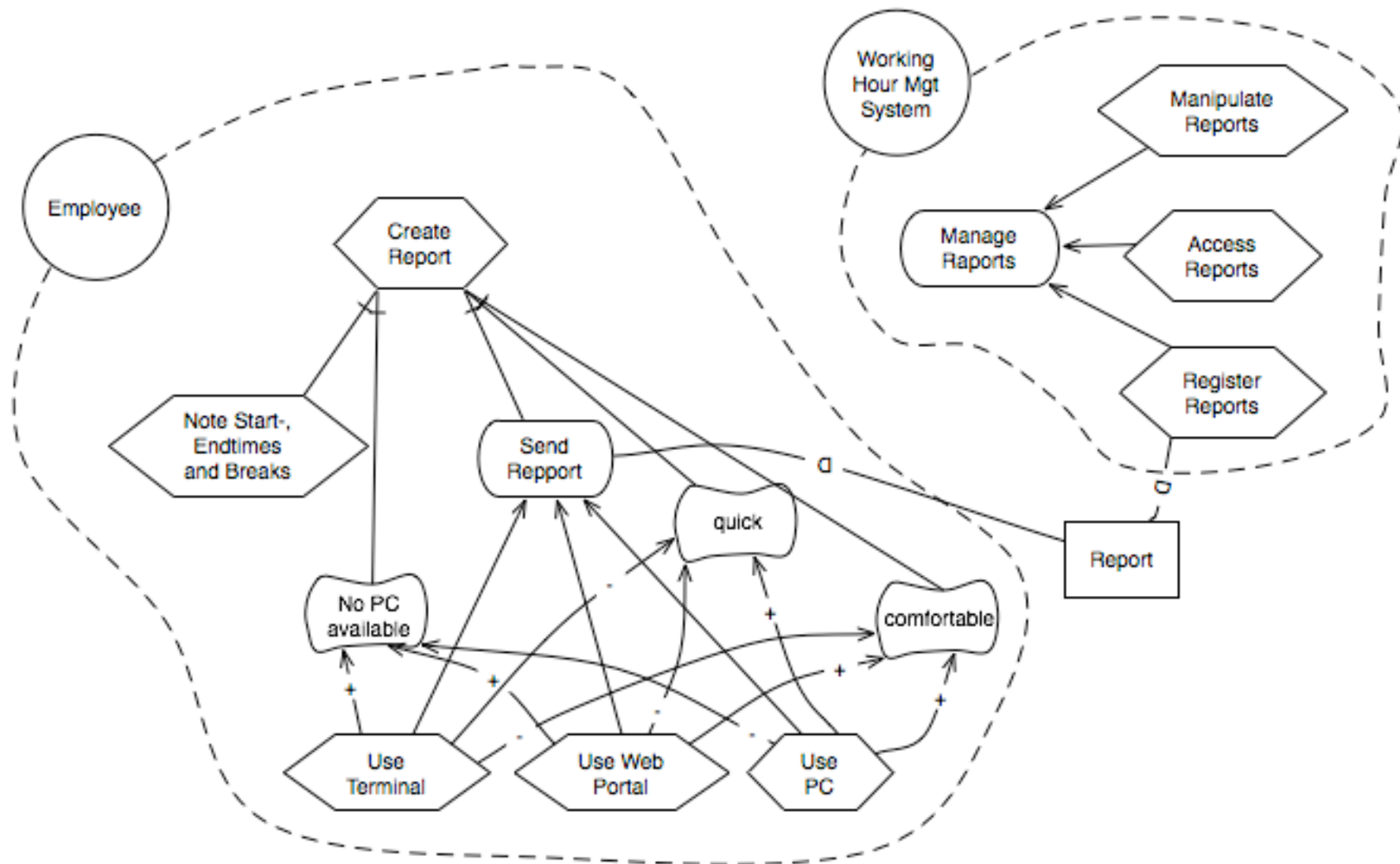
Strategic Dependency Model



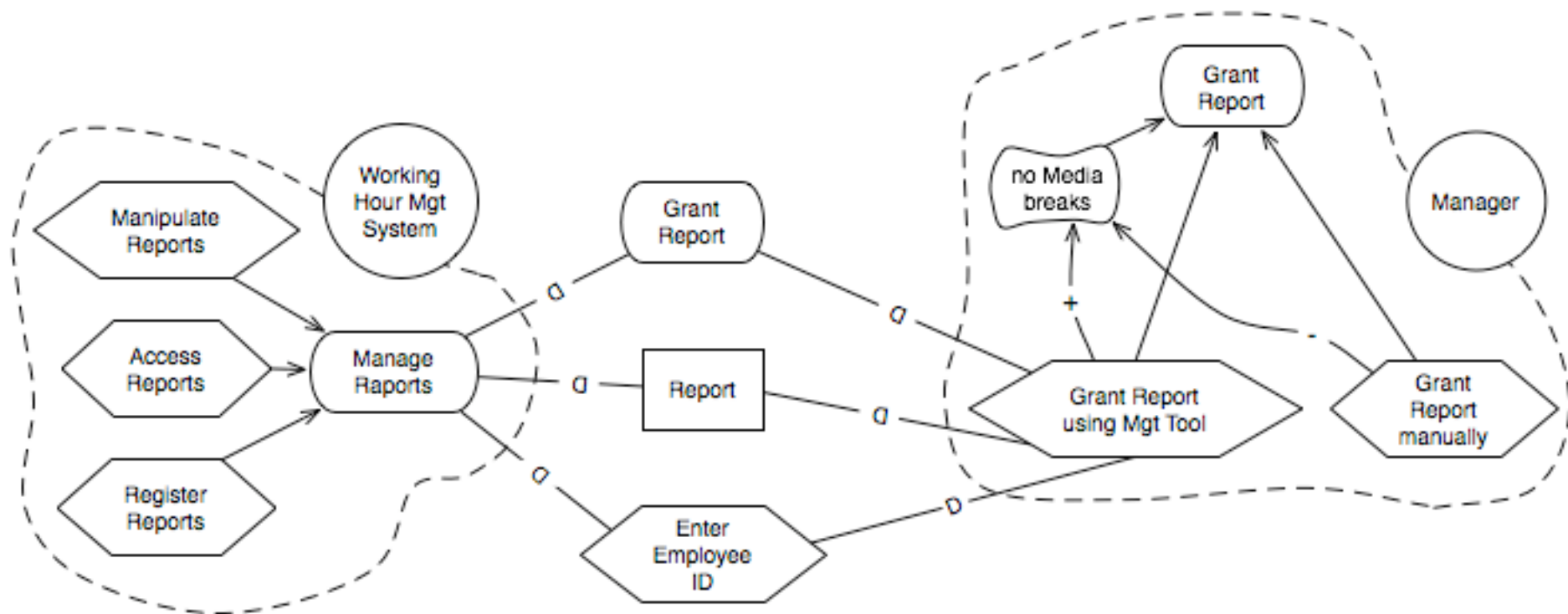
Strategic Rational Model I



Strategic Rational Model II



Strategic Rational Model III



Issues & Solutions

Issues

- Quite informal modelling technique does not scale for large requirements
- Linkage needed between early-phase and late-phase modelling frameworks

Related Approaches: Tropos

- Addresses some issues of i^* and “connects” early and late phase models
- Based on actors, goals and actor dependencies
- Agent-oriented software

Tropos continued

- 4 phases of Software Development
 - Early requirements → identify stakeholders and their goals
 - Late requirements → introduce the system that is defined as another actor to the models
 - Architectural design → add more system actors
 - Detailed design → complete the specification of system actors

Conclusion

- Focus on the “why” questions in RE
 - Why has the process to be changed?
 - Why are there Deficits?
- RE engineers have to understand the Problem domain and the Stakeholders intentions
 - Strategic Dependency Model
 - Strategic Rational Model
- Introduce and refine system actors in your models and generate agent-oriented software

Thanks for your attention!