

Goal-oriented RE

i^* and Tropos

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Overview

- [Early Phase Requirements Engineering - Problems

- [The i^* Framework

- Strategic Dependency (SD) Model

- Strategic Rationale (SR) Model

- [Tropos - An Extension of the i^* Framework

- [Conclusions

Early Phase Requirements Engineering - Problems

- [Poor understanding of the domain is an important cause of project failures

- Understanding the domain is a key aspect of the early phase

- [Users need help in coming up with first ideas

- Users must also understand what technical systems can do

- [Understanding the organizational context and the “why” (the goals) that lead to the system requirements

The i* Framework

2 basic (sub-)models

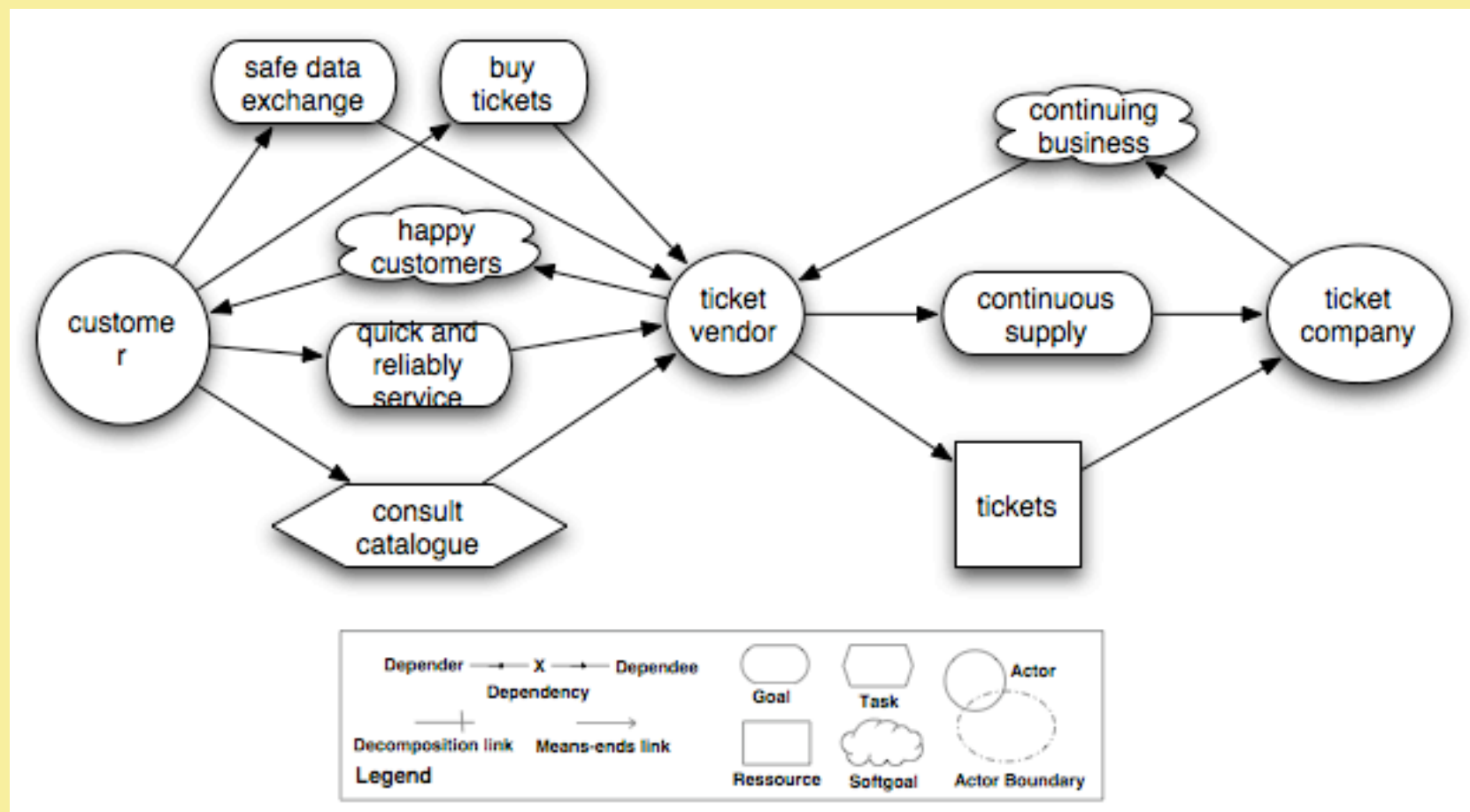
- Strategic Dependency (SD) Model: dependency relationship among actors
- Strategical Rationale (SR) Model: stakeholder interests and concerns

Basic entities

- actors (agent, position, role) and their dependencies (SD)
- goals and their dependencies (SR)
- tasks to be performed and their dependencies (SR)
- resources to be furnished

Strategic Dependency (SD) Model

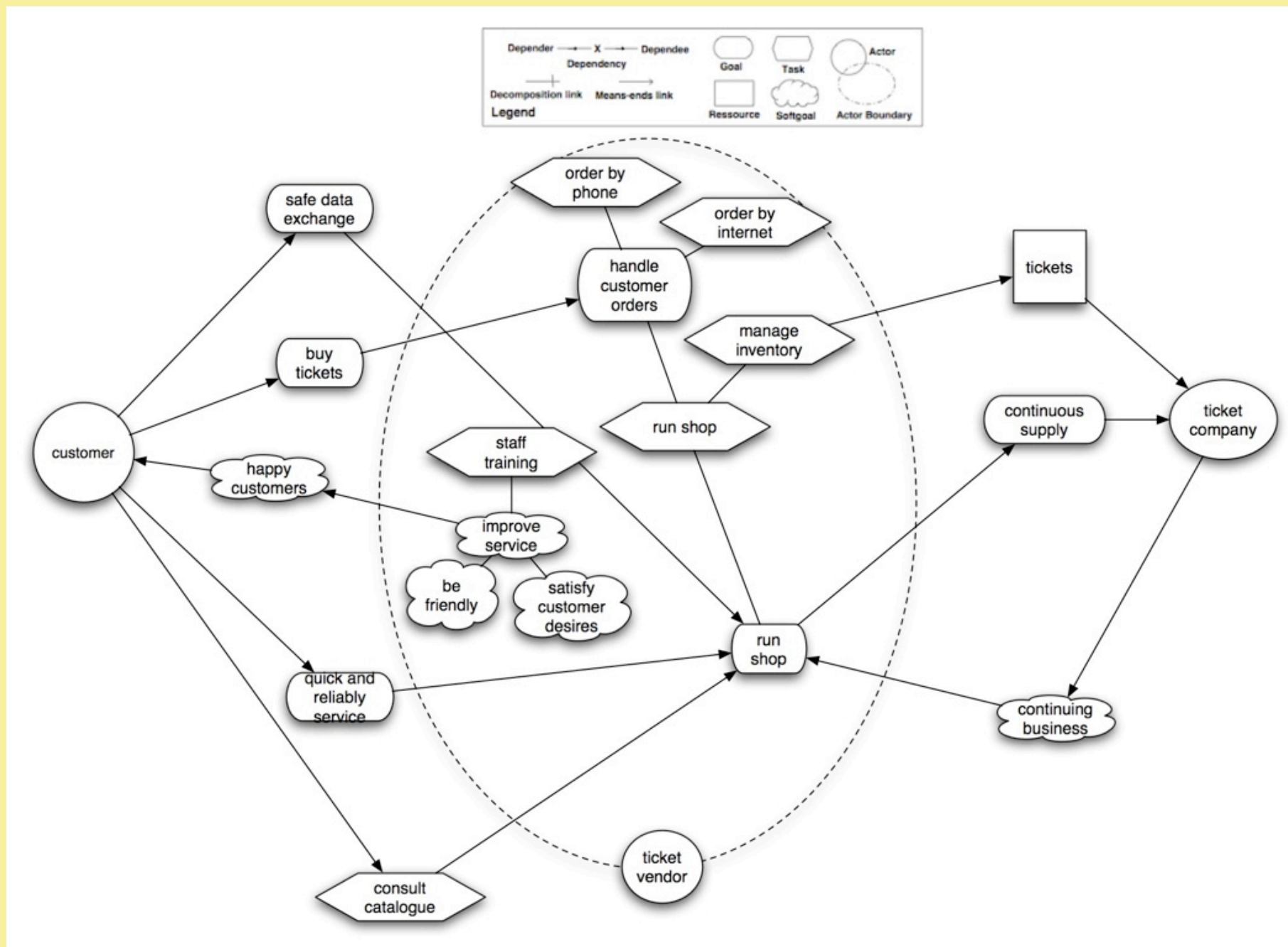
- Describes the external network of relationships among actors
- hides intentional constructs within the actors
- dependency as agreement between two actors: depender - dependee
- goal / softgoal dependencies: represent delegation of responsibility



Strategic Rationale (SR) Model

Greater level of detail

Looks inside the actors, e.g. the actors goals and his concrete tasks



Tropos - An Extension of the i^* Framework - 1

i^* is focused on early phase requirements engineering, Tropos extends the framework with concepts for late requirements and design:

- Early requirements
- Late requirements
- Architectural design
- Detailed design

Defines a formal language (Formal Tropos)

- Textual notation for i^* models
- Allows to describe dynamic constraints in an LTL

Tropos - An Extension of the i* Framework - 2

— [5 complementary perspectives (Castro et al.):

- social: who are the relevant actors, what do they want, what are their capabilities?
- intentional: what are the relevant goals and their interrelations?
- communicational: how do the actors interact?
- process-oriented: what are the relevant business processes and who is responsible for what?
- object-oriented: what are the relevant objects and interrelationships?

Conclusions

- i*/Tropos helps to understand the "why" (rationales)

- may be also useful for traceability

- "Tropos proposes to adopt the same concepts, inspired by requirements modeling research, for describing requirements and system design models in order to narrow the semantic gap between them."

Q&A

Thank you.

