Trust Models
for Communication Spaces

H-C3 Exploratory Project

Oct. 2008 – Apr. 2009
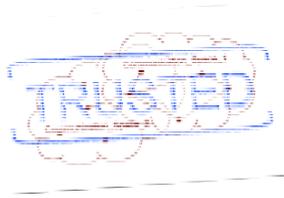
Motivation

- Trust becomes increasingly important

  - Reputation systems

  - Recommendation systems

  - Communities

The Project

- Trust and trustworthiness

  – Central notions in Human-Centric Communication

- Trust relationships

  – Established, verified, monitored, maintained and certifiably adapted

→ Trust inevitably requires formalization

- **Challenge:**

  – **Formal definition** of comprehensive and comprehensible **models of trust** for complex **communication spaces**

  – Development of techniques for the **validation** (by means of testing) and **verification** (by means of proof) of such trust models
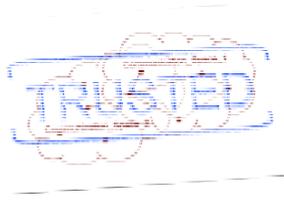
The Team

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# Trust in E-Commerce Customer Relationships
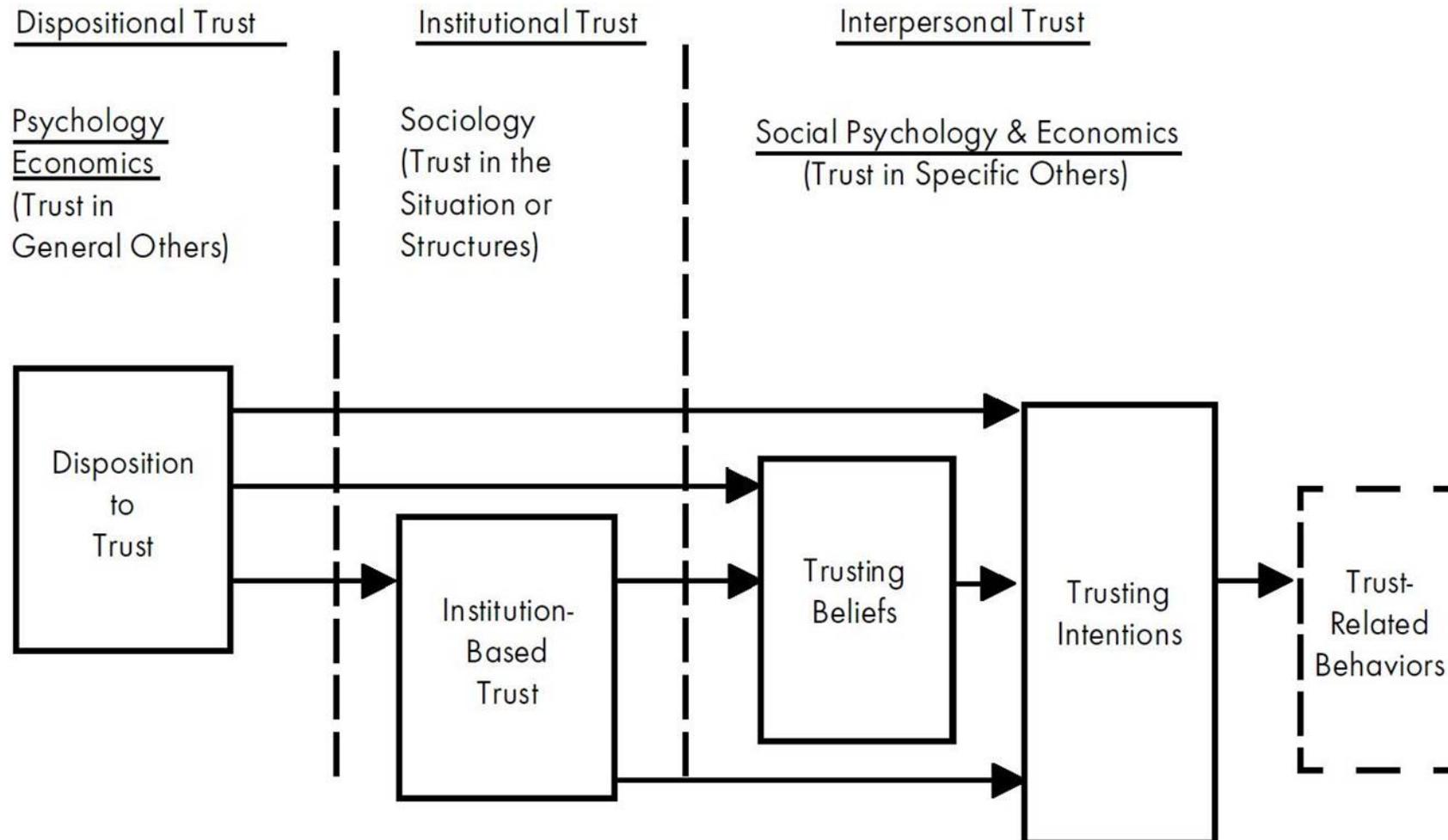
Approach

- Look into trust in communication spaces (CS)
  as technical system and **as community**

- Formalize trust
  - Represent roles and context
  - Allow for transferrence of trust information between CS

- Analyse trust systems
  - Develop simulation models
  - Evaluate trust policies

A Trust Model for CS

- **Derive trust** from experience
 - Temporal logic using Kripke structures
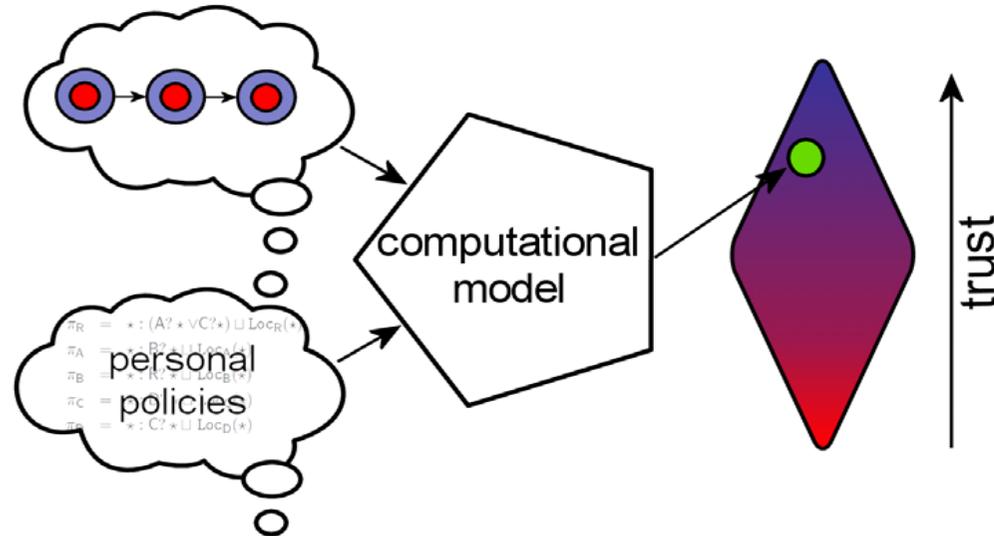
Simulative Analysis

- **Analyse trust models**

  - Simulation model in Ptolemy
  - Trust policy convergence
  - Trust policy comparison
  - Policy efficiency against attacks
  - The scalability of trust policies
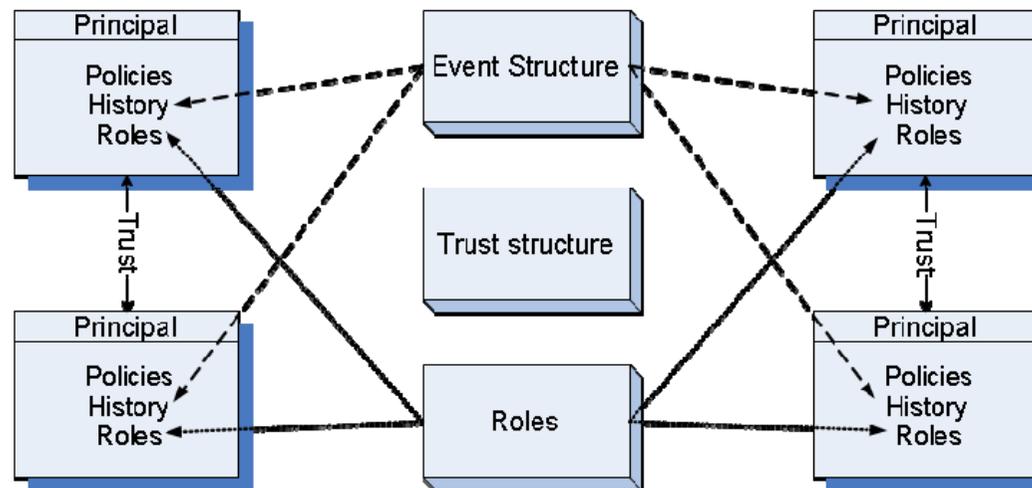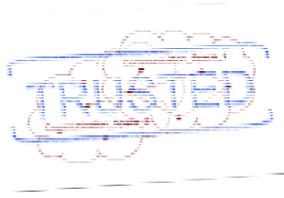
Expected Results

- **Basic formal framework**
  (concepts, definitions, characterizations) for reasoning about trust in communication spaces
- **Publications**
- **Follow-up project proposals**

→ **Trust compass**
  for users in communication spaces

Thank you for your attention!