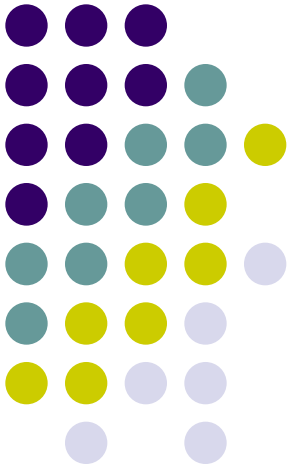
Panel on
Trust, Argumentation,Semantics

Agia Napa (Cyprus) 16/12/09

Action IC0801



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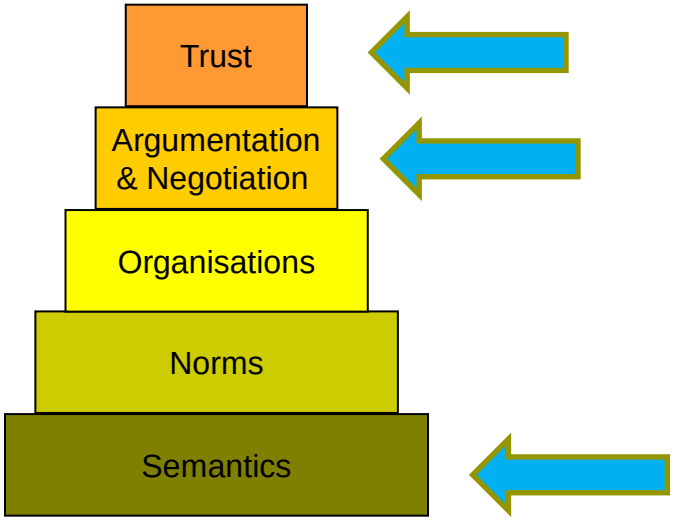
Strands of research



Questions

1. How can trust and negotiation models be integrated/combined to improve one another?
2. How can evidence in the form of arguments (with different strength and reliability) be incorporated within models of trust?
3. What is the relationship between techniques for semantic mismatches and alignment and trust mechanisms?
4. What is the role of trust, argumentation, negotiation and semantics in current technological trends like Cloud computing and Crowd-sourcing?
5. What are the practical bounds to models of negotiation, argumentation and trust in real world scenarios?
6. What challenges need to be addressed for models of negotiation, argumentation, trust and semantics to be used in large-scale open distributed systems?

Panelists

- Jordi Sabater-Mir (IIIA, Barcelona, Spain)
- Eugenio Oliveira (Oporto Univ, Portugal)
- Carles Sierra (IIIA, Barcelona, Spain)
- Piero Bonatti (Univ. Napoli Federico II, Italy)

Q1: How can trust and negotiation models be integrated/combined to improve one another?

- Guarantees (e.g. clauses in contracts) argued for during negotiation , to compensate little or lack of trustworthiness [Eugenio]
- Negotiation aims at signing contracts: trust for deciding the (other) contract signatories and for giving a measure for the expected behaviour of the potential (other) signatories [Carles]
- Real question: which (currently unsolved) problems should this integration solve?
  - Enforce properties (such as minimal disclosure of information and compliance to requirements expressed by usage constraints) – mathematical properties are a guarantee for models
  - Identify principles underlying emergence of trust relationships
  - Quantify benefits in order to engage industry [Piero]

Q2: How can evidence in the form of arguments (with different strength and reliability) be incorporated within models of trust?

- Argumentation-based dialogues for assessing reputation [Jordi]
- Argumentation for deciding whether to accept information , not whether information is true [Jordi]
- Trust as argumentation-based information exchange [Eugenio]
- Ignorance on trustworthiness should be measured: argumentation to avoid/remove/mitigate ignorance about trustworthiness [Eugenio]
- Argumentation on the expected behaviour of others, as a means for disclosing information [Carles]

Comments from the floor:

- Agents negotiate best trust mapping s using argumentation
- Argumentation for reaching agreements

Q3: What is the relationship between techniques for semantic mismatches and alignment and trust mechanisms?

- Need of reputation ontology when argumentation-based dialogues are used to assess reputation [Jordi]
- Trust information is “linguistic” – thus semantics is essential [Carles]
- In the future possibly “trust services”, e.g. For making alignments [Carles]

Comments from the floor:

- How to trust agents that can “clone” themselves? How to characterise identities? Partial, context-dependent identities generated by authorities – to guarantee anonymity. Semantic techniques to identify when two agents are the same.

Q4: What is the role of trust, argumentation, negotiation and semantics in current technological trends like Cloud computing and Crowd-sourcing?

- Trust for assessing reliability /QoS/use of resources in cloud computing and crowd-sourcing [Carles]
- Semantics for guaranteeing interoperability of clouds [Carles]
- Clouds need SLAs: negotiation can automate their agreement, in different styles (suitable to different clouds) [Carles]
- 10 reasons not to trust the cloud (by Higgin Botan): trust ,semantics, negotiation, argumentation can counter 9 of these reasons, the 10th is not a real reason [Carles]

Comments from the floor:

- Does industry really want interoperability of clouds? Not according to existing business model (e.g. See Amazon, Google etc). In other contexts (e.g. Social networks) interoperability is also not sought
- But systems exists for merging contacts in chat systems? Step towards interoperability?

Q5: What are the practical bounds to models of negotiation, argumentation and trust in real world scenarios?

- Scalability (e.g. of reasoning with ontologies and of negotiation strategies) [Carles]
- Usability: without user policies we have no automated negotiation. Locaccino (CMU) recently points to the inability of users to come up with good policies, even in the simplest cases. Need of authoring and validation tools [Piero]

Q6: What challenges need to be addressed for models of negotiation, argumentation, trust and semantics to be used in large-scale open distributed systems?

- Models need to be “filtered” by applications in these domains [Eugenio]
- Trust needs to obey institutional rules [Eugenio]
- Scalability: Divide and conquer approach, e.g. using institutions/organisations [Carles]
- Usability – see answer to question 5 [Piero]
- Technological issues: credential infrastructure (e.g. Digital Ids) not picked up yet by industry - standard login/password used instead [Piero]

Comments from the floor:

- GARLIC (company) can create reports on people’s privacy - step towards allowing the pick-up of credential infrastructure?
- Legal issues – e.g. lack of cross-border legislation