Challenges Facing the Development of Negotiation Support Systems for Non-Monolithic Parties

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Agenda

- Non-monolithic Negotiations
- Challenges
  - Data structure
  - Negotiation protocols
  - Analysis of the negotiation process
- Conclusions
Non-Monolithic Negotiations
In a monolithic negotiation process, each party is a unitary decisional entity.
Monolithic Negotiations
Non-Monolithic Negotiations
Cross-Parties Negotiations
Main Characteristics

- Parallel work of many groups
- Group dynamics
- Importance of message exchange
Data Structure
Basic Assumptions

- Multiversion contract
  - a negotiation proposal = a contract version
  - coexisting negotiation proposals
- Message exchange
  - Inside a given group
  - Among groups
DOC.COM Approach
NeSSSy approach
Non-Monolithic approach
Negotiation Protocols
Contract Authoring (DOC.COM)
Message Types (DOC.COM)

- Offer
- Request
- Counter-offer
- Accept
- Reject
- Confirm
- Information
Negotiation Protocol (DOC.COM)
Group Message Exchange

- Need for new message types
- Unformalized/incomplete concepts
  - Message
  - Action
  - Role
- Relationships among concepts?
Complex Protocols

- Dynamics
  - 1 negotiator → many roles in time

- Parallelism
  - 1 negotiator → many roles at the same time

- Modularization
  - Protocol patterns/components
Analysis of the Negotiation Process
“Amount of Information” Issue

- Many “dimensions”
  - negotiators
  - considerations
  - negotiation rounds
  - groups
  - messages
- Analysis tools for negotiators
- Reasoning “delegated” to negotiators
Analysis of Mass e-Negotiations

- NeSSy
- Complex negotiations
  - high number of negotiators
  - multi-attributes, multi-items
- Extensibility
- Limitations
  - No support for messages/groups
Analyses for Non-Monolithic Negotiations

▸ Analyses of
  ▸ group dynamics
  ▸ message exchange
  ▸ relationships between
    ▸ message exchange and group dynamics
    ▸ contract versions and group dynamics
    ▸ contract versions and message exchange

▸ Behavior analysis
Conclusions

- Currently lack of formalization
- Multi-disciplinary area
  - Versioning
  - Negotiation protocols
  - Knowledge extraction
- Many areas still to be explored
Thank you for your attention

Any questions?