Mind Your P’s: Processes, Policies, and Protocols

Introduction

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Processes, Protocols, and Policies

- Heavy interest in practice and research
- Standardization efforts
- Concepts and trade-offs not adequately understood
- May standardize our confusions!
Goals of this Panel

- Identify key aspects of business process modeling and enactment
- Compare different styles for the above
- Delineate and distinguish contributions of different approaches
Themes

- *Business processes.* Conceptually centralized as scripts, physically centralized at an engine.

- *Protocols (or conversations).* Models of interactions for some purpose, e.g., payment or negotiation.

- *Policies.* Executable representations of preferences or decision-making constraints.

- *Semantic Web services.* Represent meaning of services to support composition, e.g., via AI planning.
Motivations

- Need for extended activities over Web architectures: hence, *processes*.
- Need to specify interactions among heterogeneous partners: hence, *protocols*.
- Need to model decisions of autonomous partners: hence, *policies*.
Common Scenario

- A customer (C) looks up a book at a vendor (V) and is quoted price and availability.
- C orders the book from V.
- V arranges for a shipper (S) to deliver the book to C.
- C pays V.
Challenges: Modeling

- **Refinement**: pay by credit card versus pay
- **Extensibility**: verify C’s attributes, e.g., age
- **Adjustment**: receive payment before shipping; receive book before paying
Challenges: Enactment

- *Behaving adaptively*: decide dynamically to ship before payment to trusted Cs

- *Handling exceptions*
  - External problems: cannot ship book
  - Detecting violations: no payment; book arrives damaged
  - Correcting violations: remind, complain, refund, . . .

- *Exploiting opportunities*: combine orders from same C
Questions

- How would you accommodate the above?
- What are shortcomings of the other approaches?
- What enhancements can your approach support?
Panelists

- Akhil Sahai, HP Labs
  - Policies, processes
- Jianwen Su, UCSB Computer Science
  - Protocols
- Kamal Bhattacharya, IBM Watson Business Informatics
  - Processes
- Benjamin Grososf, MIT Sloan
  - Rules, semantic Web services