Integral Design of E-commerce Systems: Aligning the Business with Software Architecture through Scenarios

Jaap Gordijn
Deloitte & Touche Bakkenist Management Consultants
Vrije Universiteit Amsterdam/Faculty of Sciences

Hans de Bruin
Vrije Universiteit/Faculty of Sciences

Hans Akkermans
Vrije Universiteit/Faculty of Sciences

AKMC Knowledge Management

© Deloitte & Touche Bakkenist Management Consultants/Vrije Universiteit

E-commerce

• Observations:
  - E-information systems constitute e-commerce process models rather than support them;
  - E-business models and E-information systems are both subject of design;
  - Different kinds of stakeholders are involved;

• Consequences:
  - E-business models and E-information systems should be designed in an integrated way, respecting needs of different kinds of stakeholders;
  - Design should initially be on a global level to allow for early assessment and communication with stakeholders.
Approach: different stakeholder views and integrating scenarios

Representing stakeholder views

- E-business model view:
  - Assignment of value production and consumption activities to stakeholders

- E-business process view:
  - E.g. UML diagrams (activity/sequence/collaboration), Role based modelling (Ould), High Level Petri Nets;

- E-software architecture view:
  - Multiple views (e.g. Views of Kruchten: logical, process, physical, development);

- E-* scenarios: value scenarios, business process scenarios and SA-specific scenarios, e.g. to evaluate costs of a scenario;
  - Use Case Maps (Buhr) as a generic vehicle;
Case study experiences

- After one initial design-cycle:
  - Business model scenarios, process model scenarios and software architecture scenarios discussed with stakeholders;
  - Views revealed important design trade-offs, for instance:
    - Centralised vs. Decentralised architecture:
      - Centralised architecture cheaper than decentralised architecture (based on predication of number of scenarios);
      - Centralised architecture shifts power to one actor;
      - Decentralised architecture distributes power over all actors.