

Design of Semantic Information Systems Using a Model-based Approach

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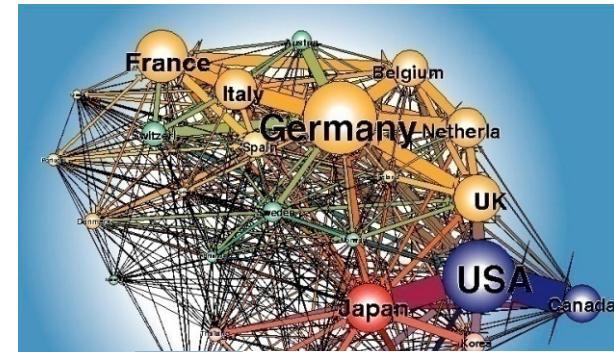
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Agenda

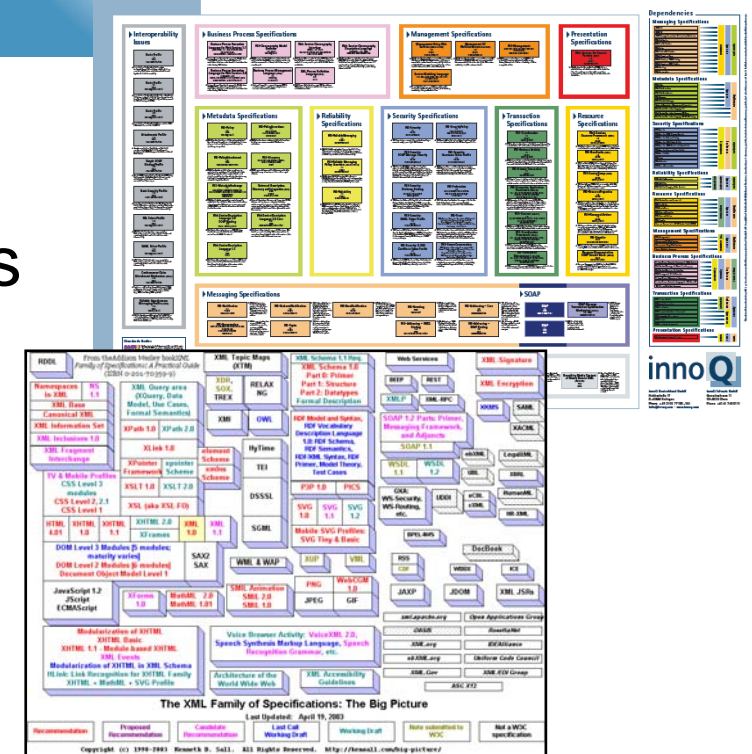
- Business and Social Computing
- Semantics Information Systems
- Design of Semantic Information Systems
- Case Study

Evolution of Business Requirements

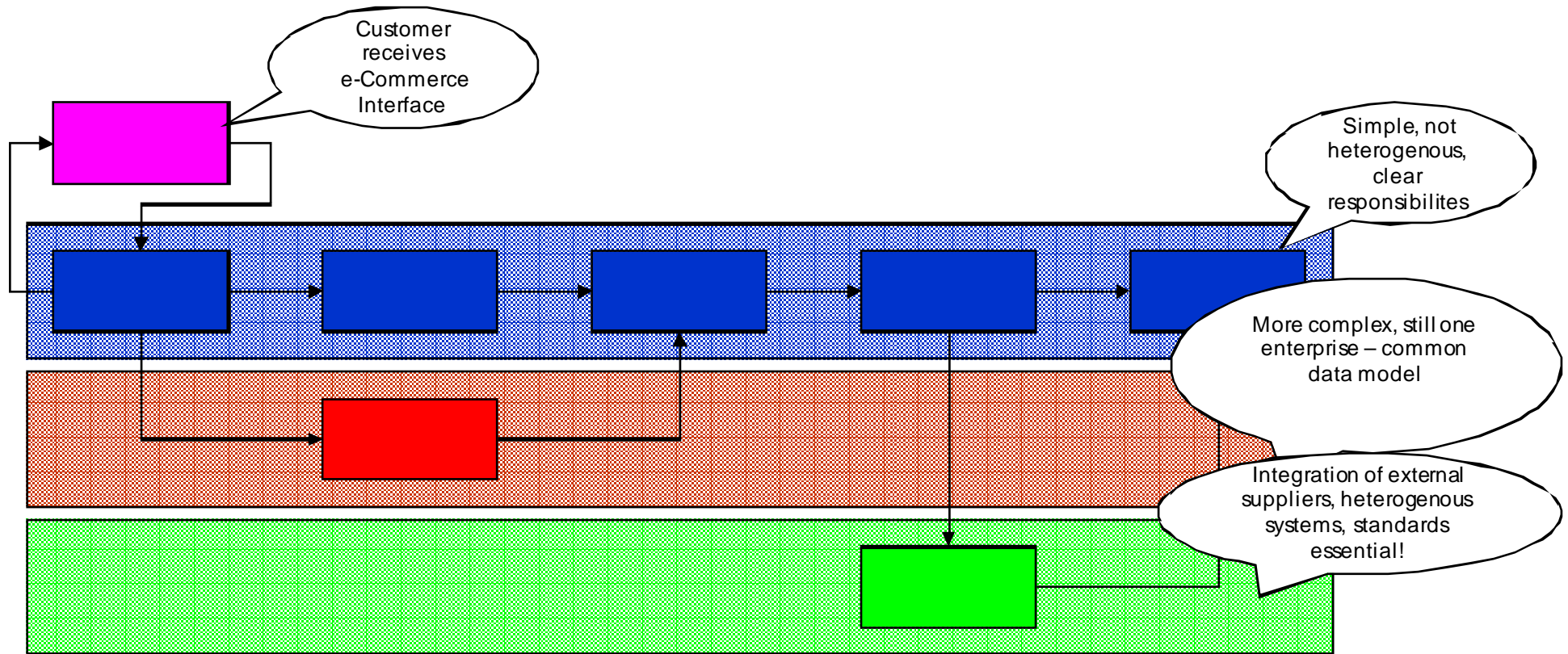
- Rapid Strategic Business Change
- Technology supports innovation
- Changing requirements regarding the alignment of IT to business
- Linkage between business objectives and information systems necessary



Web Services Standards Overview



Evolution of E-Business Applications



Transparency of Strategy, Processes, Ressources and IT infrastructure required for effective IT support!

Based on ideas by "Changing Business and Software", Dr. James Rumbaugh (IBM Distinguished Engineer and Co-Developer of UML)
http://www.it.tuwien.ac.at/events/rumbaugh/folien_rumbaugh.pdf

Social Computing and Business

So what about social computing in electronic business?

- **Forrester:** "...there's only one constant, that people will continue to connect with each other in new and different ways..."
- "go for speed over perfection in applications deployment"
- **Gartner:** "As an organization matures with social computing, its strategy must align business value and governance, or they risk success of the effort"

What about machine-processable semantics?

Semantic Information Models

Represent semantic aspects in information systems such as: airline reservations, employee administration, banking etc.

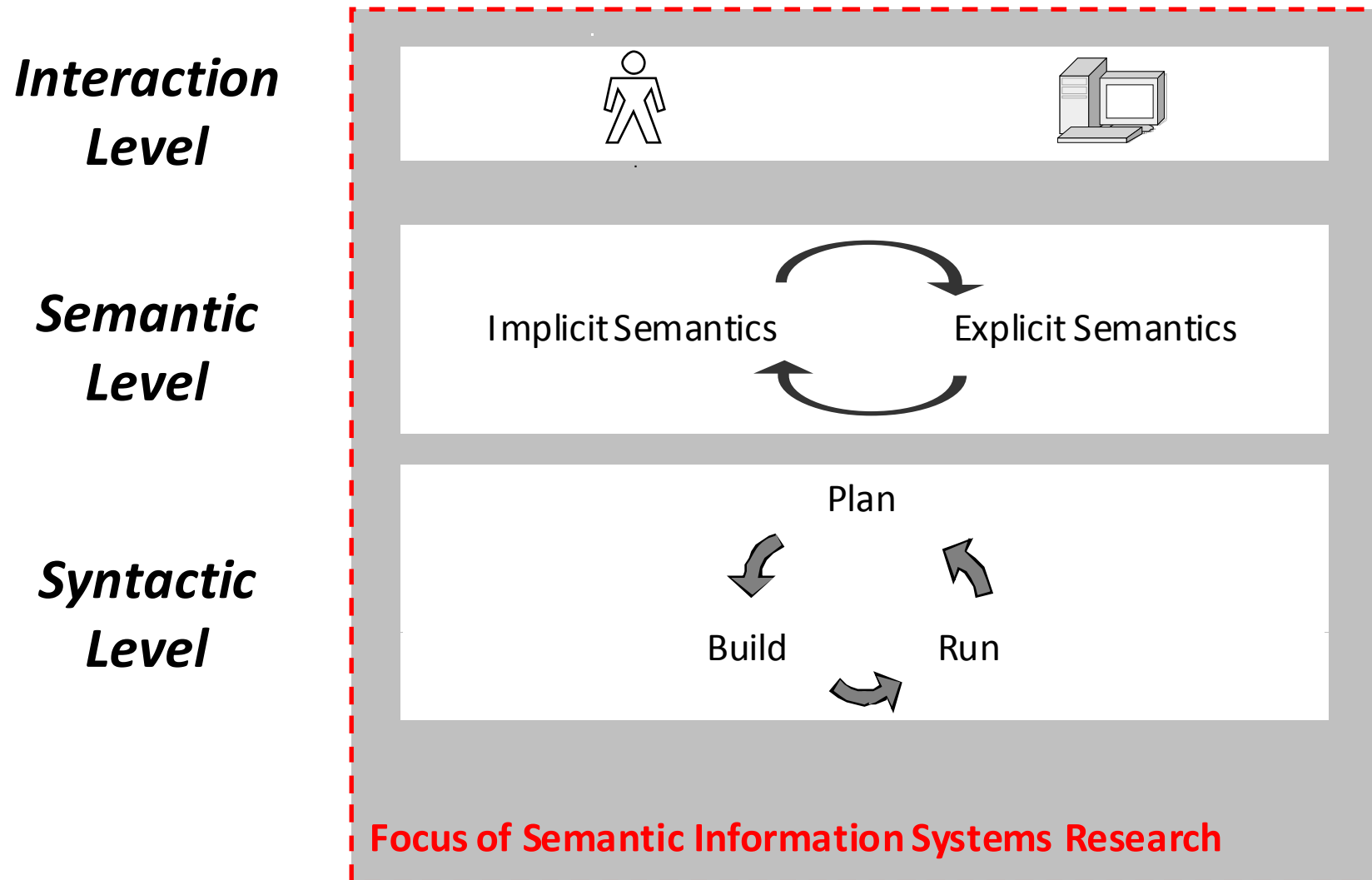
Main directions for encoding semantics:

- Pre-encoding approaches
 - Post-encoding approaches
- } Business Benefit

How to integrate these approaches?

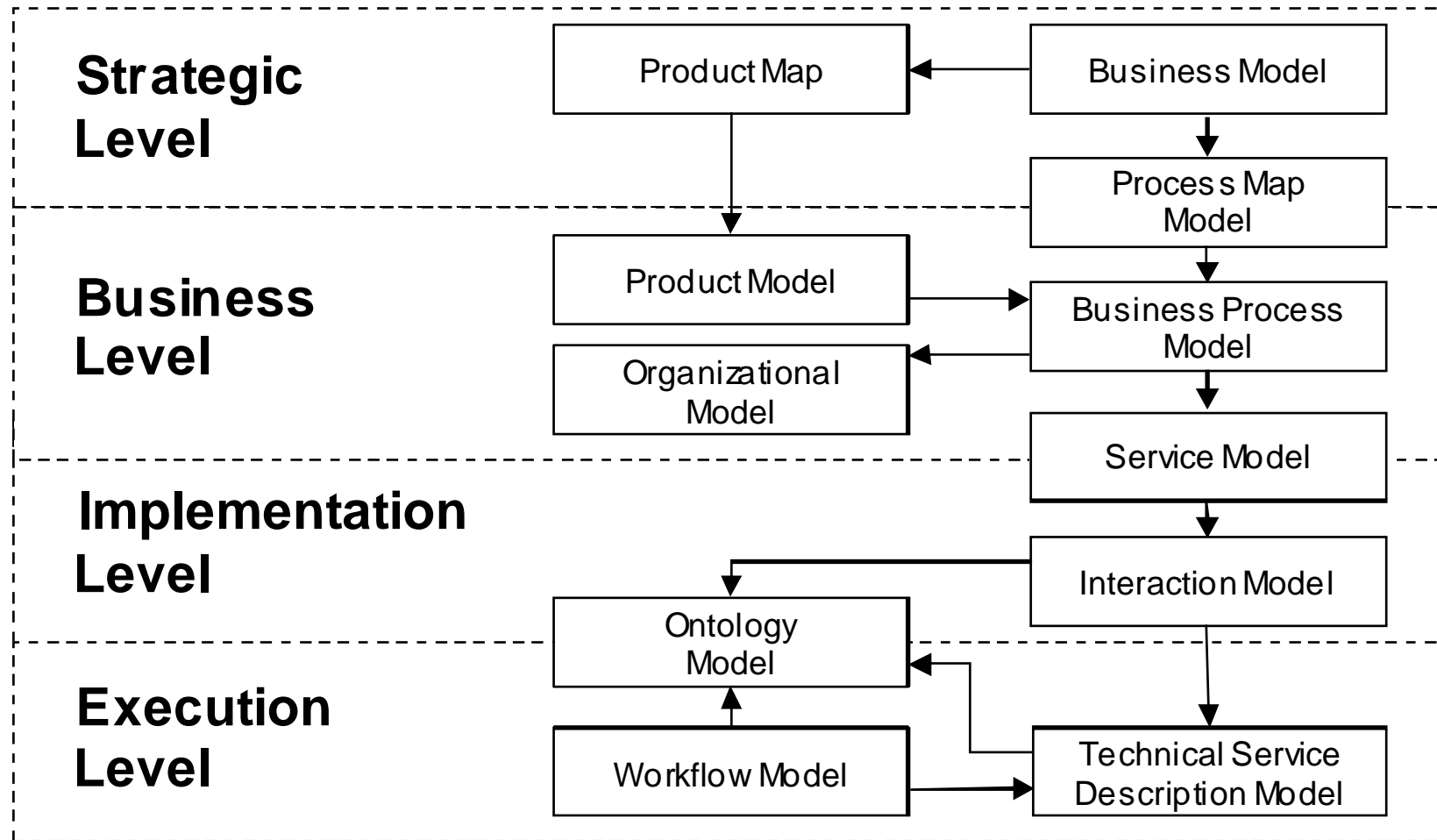
cf. (Auer and Ives 2008)

Generic View of Semantic Information Systems

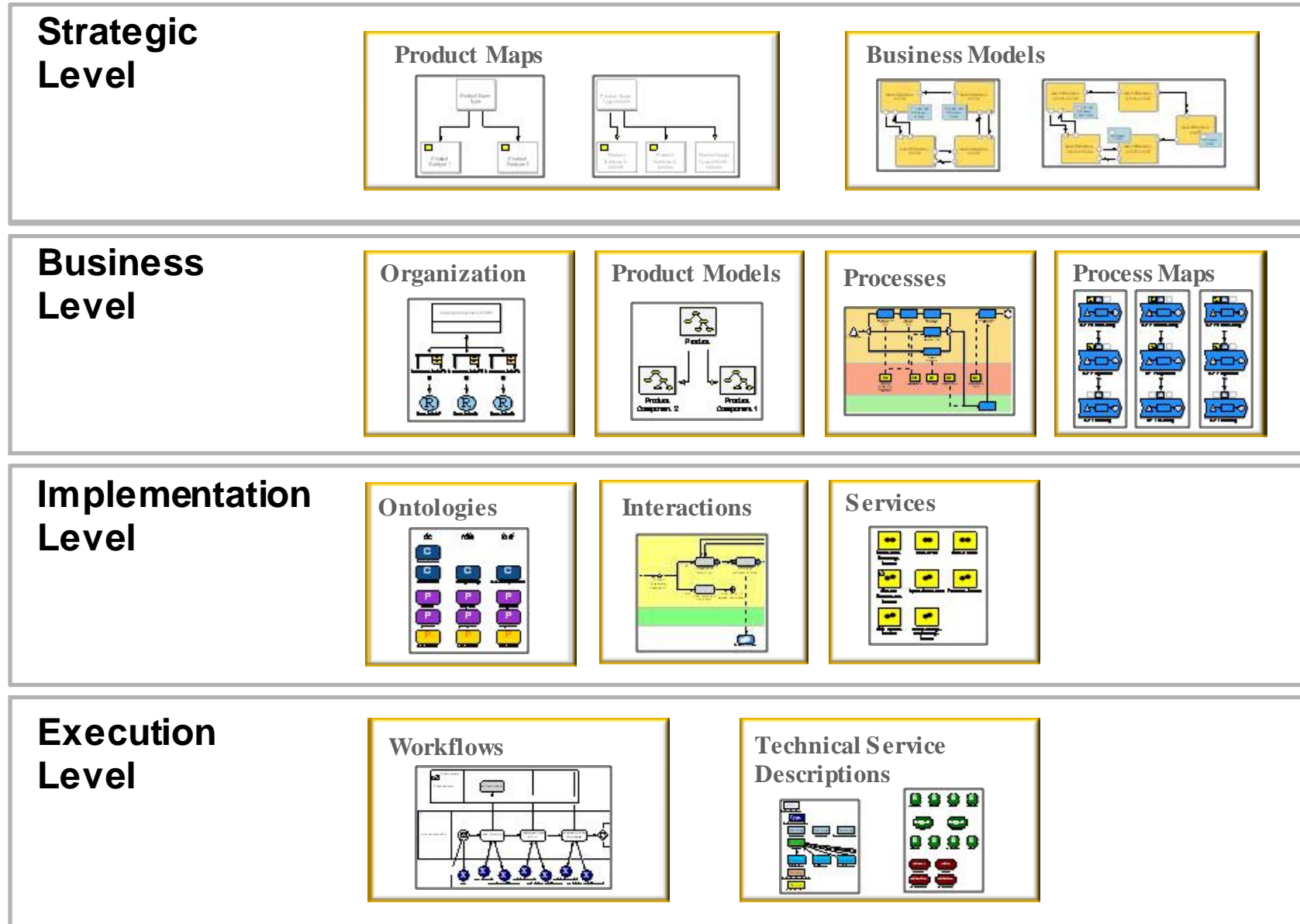


Fill, 2006; Fill, 2009

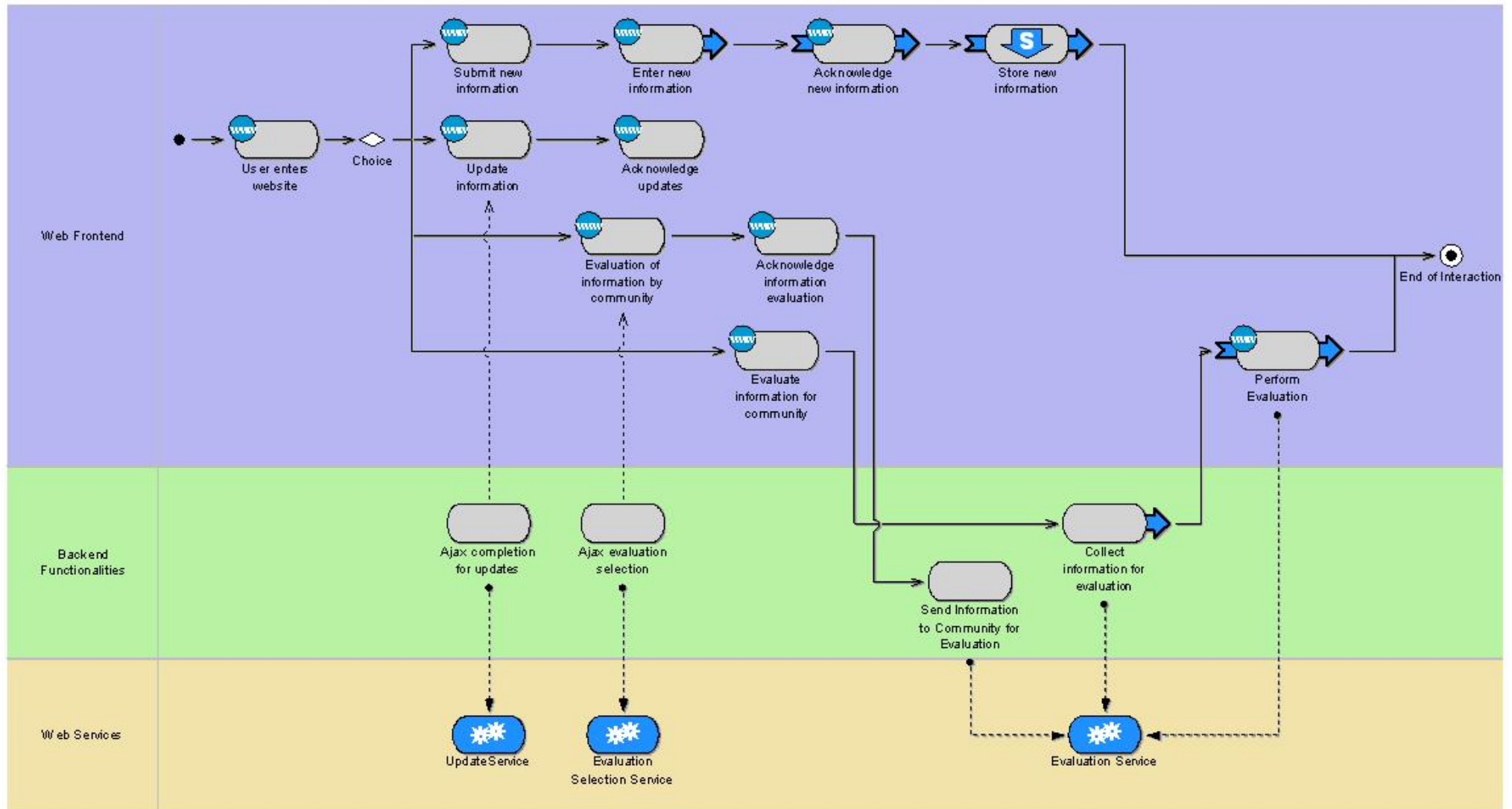
A Modeling Framework for the Design of Semantic Information Systems



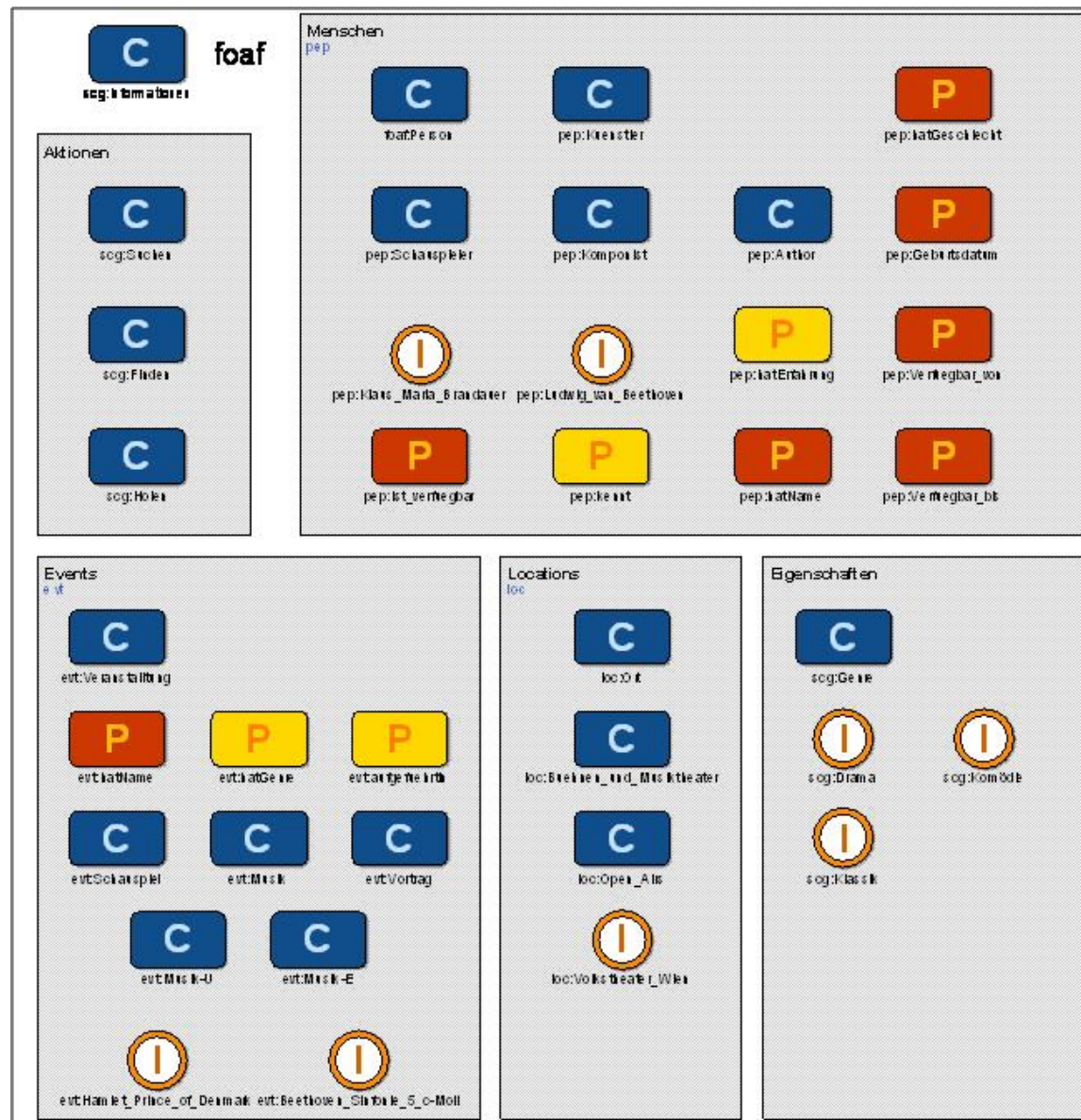
Instantiation of Semantic Information Systems Modeling Framework



Example: Representing Interactions

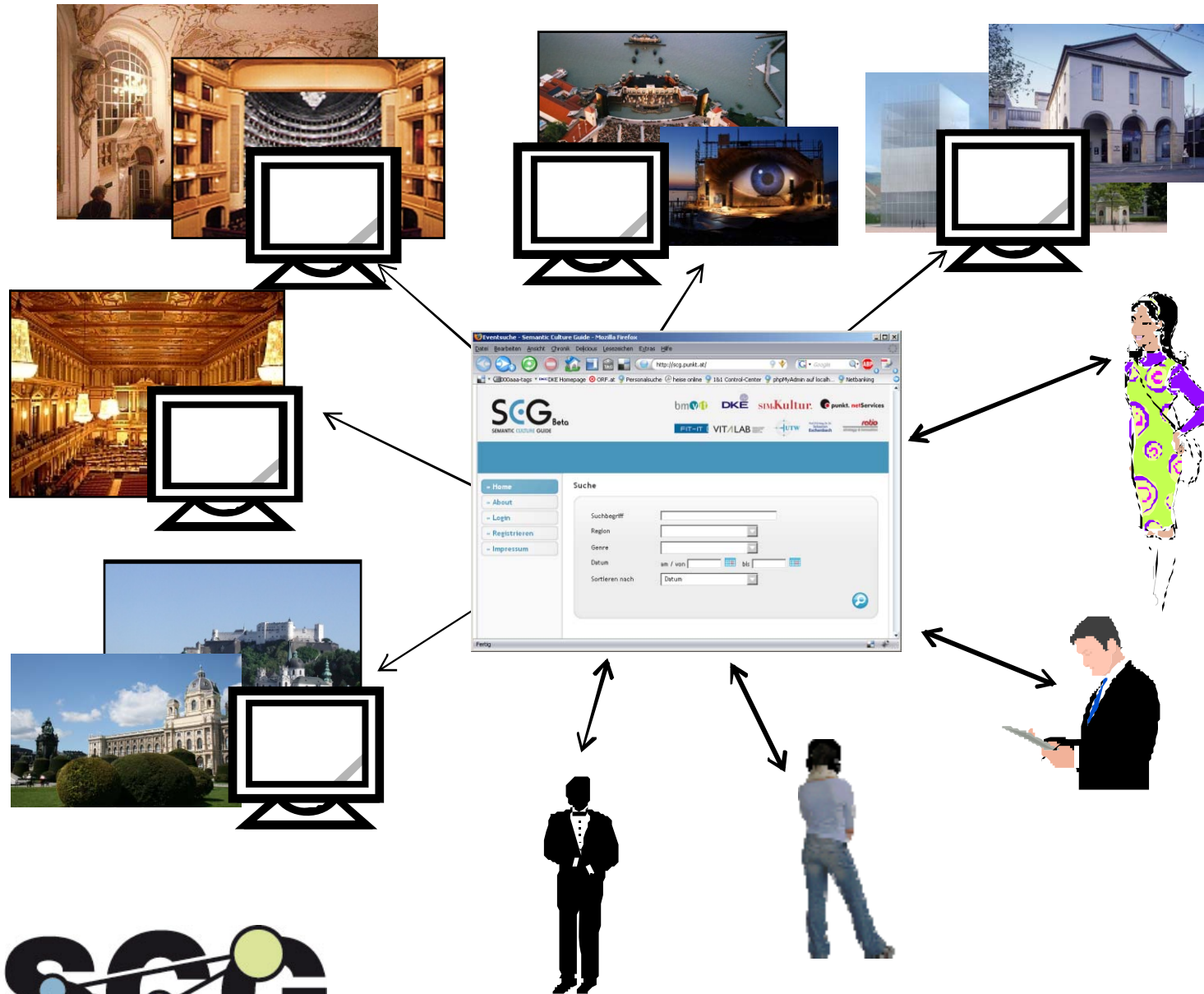


Example: Representing Ontologies



CASE STUDY

Case Study: Semantic Culture Guide



Advantages of a common social semantic platform:

- One Login
- One Look&Feel
- Ranking of events based on user ratings
- Specific ontology- & trust-based recommender system
- One-stop shop for events
- Easily adaptable through SOA foundation



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Case Study: Application of Semantic IS Modeling Framework

Identified Advantages:

- Clear statement of business objectives
- Alignment between business and IT
- Model-based approach allowed for analysis of services, interactions, and involved semantics at an early stage
- Evaluation and test management:
Through availability of models: Simulation of operation of the solution becomes possible



Thank you for your attention!
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Additional Info

Book to be published April 2009:
Fill, H.-G. (2009) Visualisation for
Semantic Information Systems, Gabler

