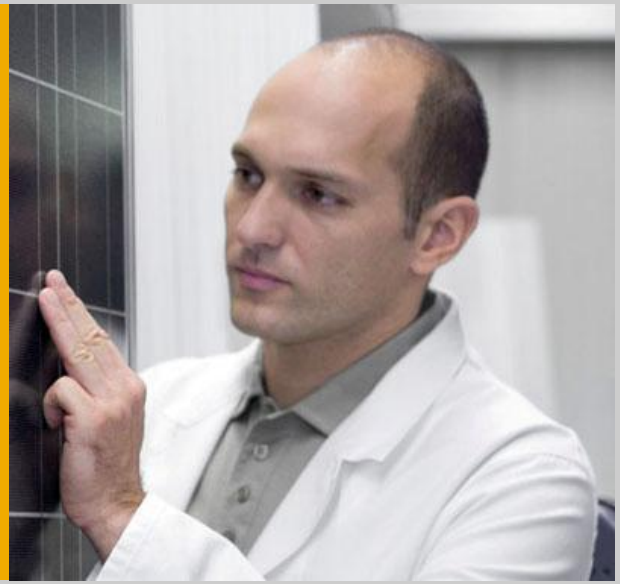
Design Principles of Enterprise Mashups



wm2009 SOLOTHURN

SYSTEMATIC THOUGHT LEADERSHIP FOR INNOVATIVE BUSINESS

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Institute for Media and Communications Management
University of St.Gallen

THE BEST-RUN BUSINESSES RUN SAP

SAP Research Global Network



SAP Labs-based Research Centers

Campus-based Engineering Centers

planned

SAP RESEARCH

Agenda



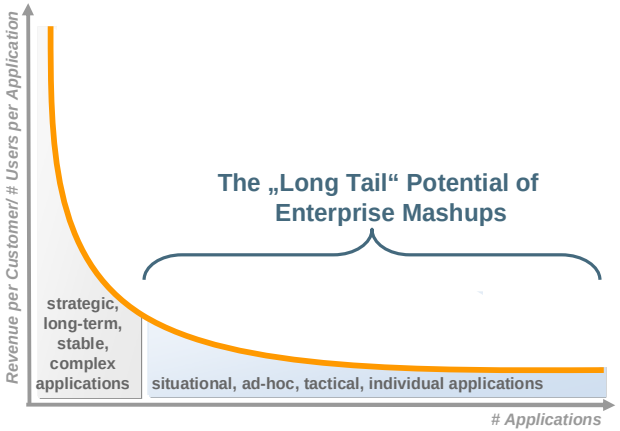
1. **Motivation and Challenges**
2. What are Enterprise Mashups?
3. Emerging Design Principles
4. Cases Study: FAST Platform
5. Conclusion and Outlook

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“Yes we can!“
Empowering the Non-Technical Business Users

New approaches/ tools aim at enabling the mass of end-users to create enterprise-level applications according to their individual needs

- “Enterprise Mashup[s] … unleash a tremendous amount of value” (Forrester)
- Top 10 Strategic Technologies for 2009 (Gartner)
- $700 Million Market by 2013 (Forrester)





Source: Kevin Quinn. Not Everyone Who Drives a Car Fixes It Themselves -Strategic Information Infrastructure. http://www.dmreview.com/news/1041222-1.html, November 2005.

Motivation and Challenges

Business Situation

- Long tail of user needs (end-users are increasingly requiring individualized applications meeting exactly their daily needs)
- Situation application (ad hoc application) are needed

Shortcomings of Service Oriented Architectures

- Active end-user integration is missing (high complexity of the relevant standards like SOAP, WSDL, UDDI, BPEL, etc.)
- No flexibility to address ad hoc user requirements
- Innovation power of user communities is not used

Enterprise Mashups as a new Paradigm for Situational Applications

→ **Emerging of new design principles**

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1. Motivation and Challenges
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Enterprise Mashups
Definition



„An Enterprise Mashup is a Web-based resource that combines existing resources, be it content, data or application functionality, from more than one resource in enterprise environments by empowering the actual end users to create and adapt individual information centric and situational applications"

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Enterprise Mashups
Enterprise Mashup versus SOA

Criteria	Traditional IT Development (Service-Oriented Architecture)	Enterprise Mashups
Scope		
Time-to-Value	Many weeks, months, or even years	Minutes, hours or days
Lifespan	Long lived application	Variable, often short application
Application type	Strategic, standard applications	Backlog of simple, tactical, and individual applications (“long tail”)
Functional Requirements	Defined by limited number of users, IT needs to freeze requirements to move to development	As requirements change, Enterprise Mashups usually changes to accommodate business changes
Non Functional Requirements	Resources allocated to address concerns for performance, availability and security, robust solutions	Little or no focus on scalability, maintainability, availability, etc.
Process		
Development Phases	Well defined and scheduled (requirement, specification, implementation, testing, deployment)	Ad hoc or good enough solution to address and immediate need
Governance	Formal, centralized	Decentralized, community-driven
Evolution	Top-down, centrally	Organic
Users		
Application builders	IT department or external experts (developer skills)	Line of business, individuals or groups (limited or no programming skills)
Target users	Large groups	Small teams or even individuals

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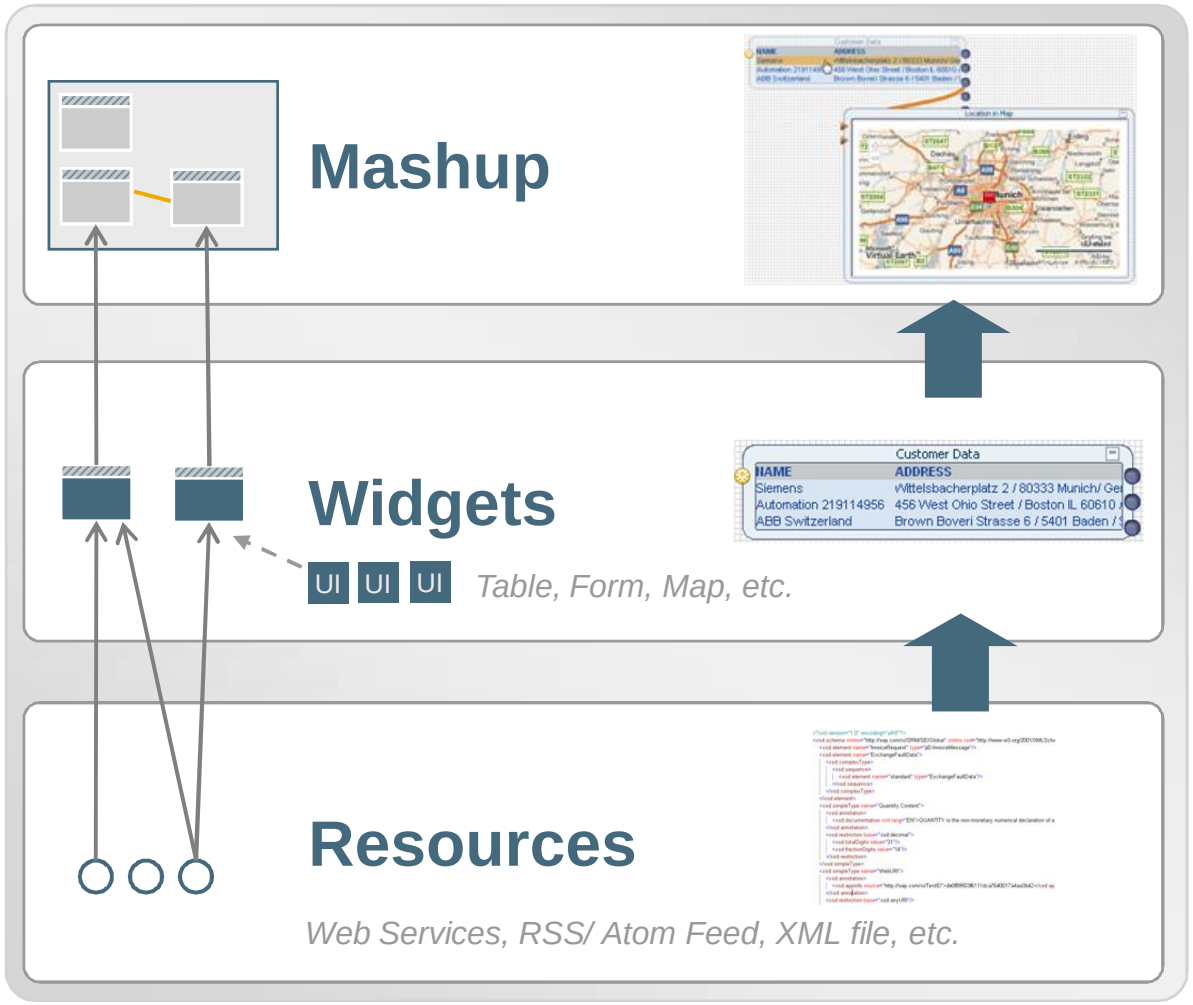


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Design Principles
Enterprise Mashup Stack (Architecture)

Enterprise Mashup Stack



User Roles

End-Users run Mashups scenario
- Consume Mashup scenario
- Personalize individual environment (e.g., can change the background color, hide buttons, etc.)

Key users create Mashup Scenario
- Add pre-build widgets (from the catalogue)
- Connecting widgets by wiring their in-/out- ports

Consultants create Widgets
- Binding generic UIs to resources/ services
- Transforming and aggregating data

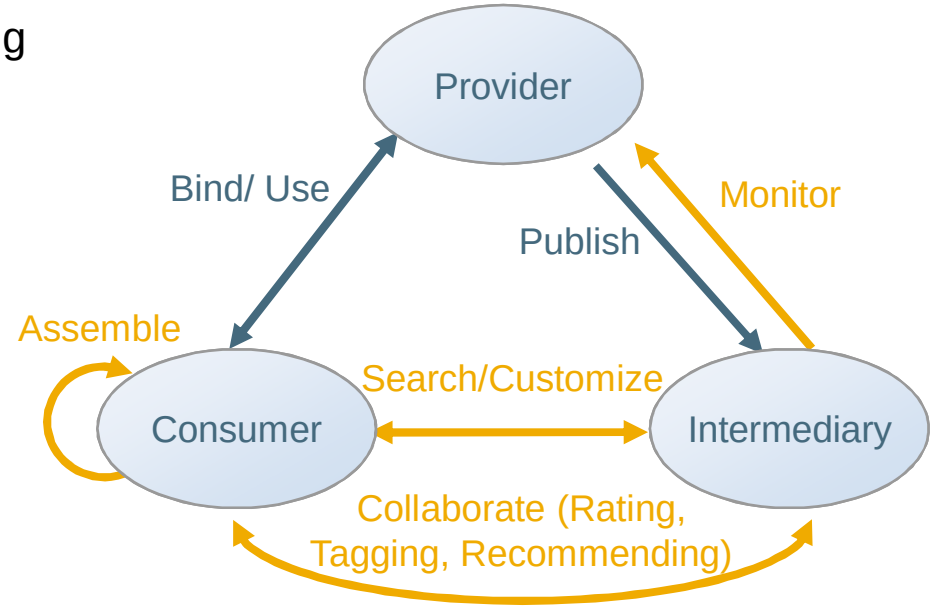
Developers implement the services
- Creates and deploys services – makes resources available (e.g., RSS Feeds, SAP Enterprise Services)

New services provided by emerging intermediaries

- Monitor continuously parameters (availability, response latency)
- Provide performance metrics and other evaluation results
- Adequate description of resources for retrieval by the actual end-users (consumer)

Integration of consumers

- Collaborative tagging of resources resulting in an organic (bottom-up) taxonomy
- User rating based on popularity and relevance
- Recommending of resources



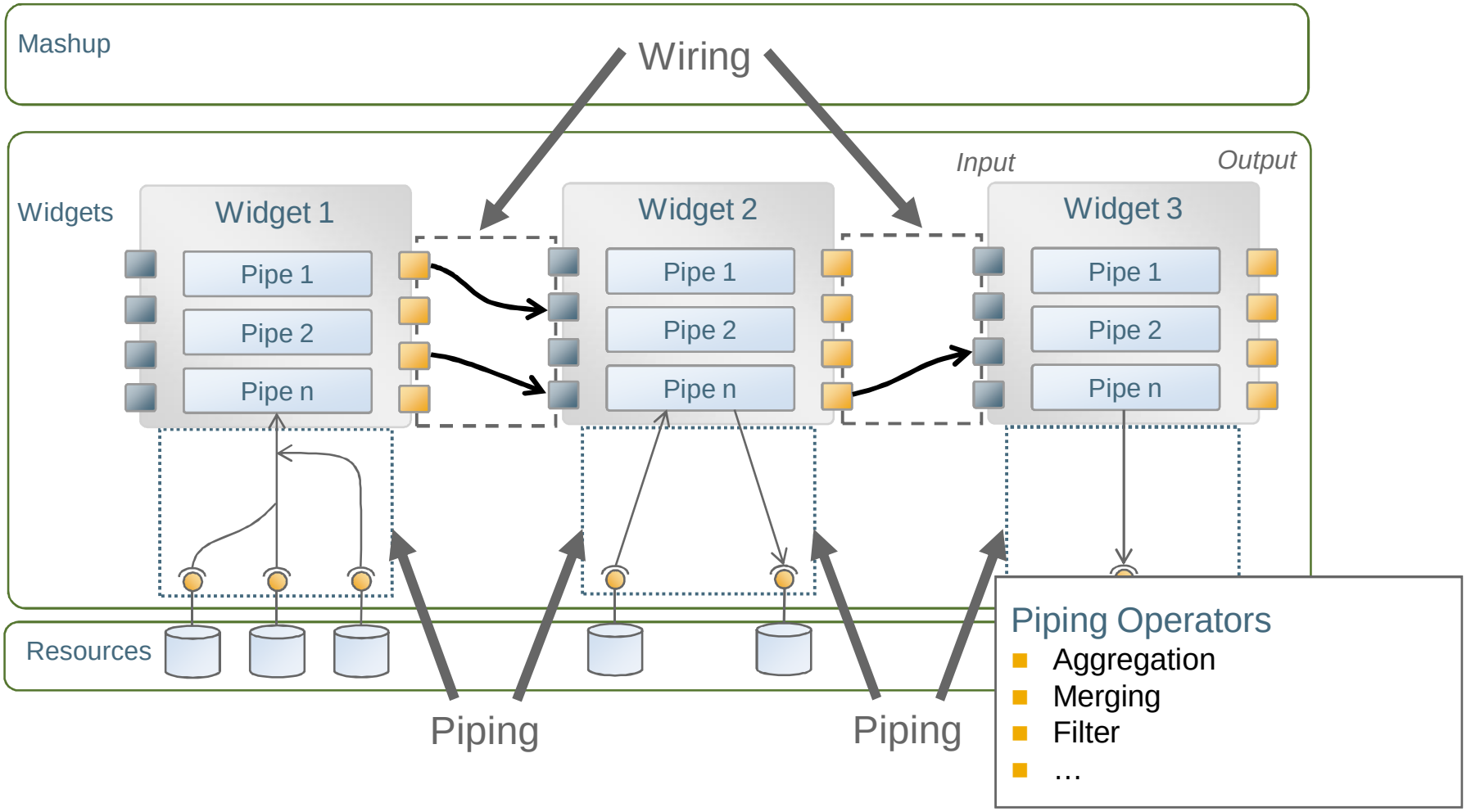
Design Principles
Mass Collaboration

Characteristics

- Co-innovation and co-production of enterprise applications through the actual end-users
- End-users self-organize their individual workspace („*quick and dirty*“)
- Willingness of sharing of experiences with thousands or even millions on the Web
- Foster the continuously improvement of resources

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Design Principles
Lightweight Resource Composition (Piping vs Wiring)



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Design Principles
Perpetual Beta Development Model

Characteristics

- Even if users are more tolerant of bugs and poor performance, a stable Enterprise Mashup environment is required
- Building individual applications *quick and dirty* with internal and external components

New Development Process

- Agile development model focusing on the actual working application
- Operative phase is explicit part (Converging design and run time)
- Disciplined build and development process

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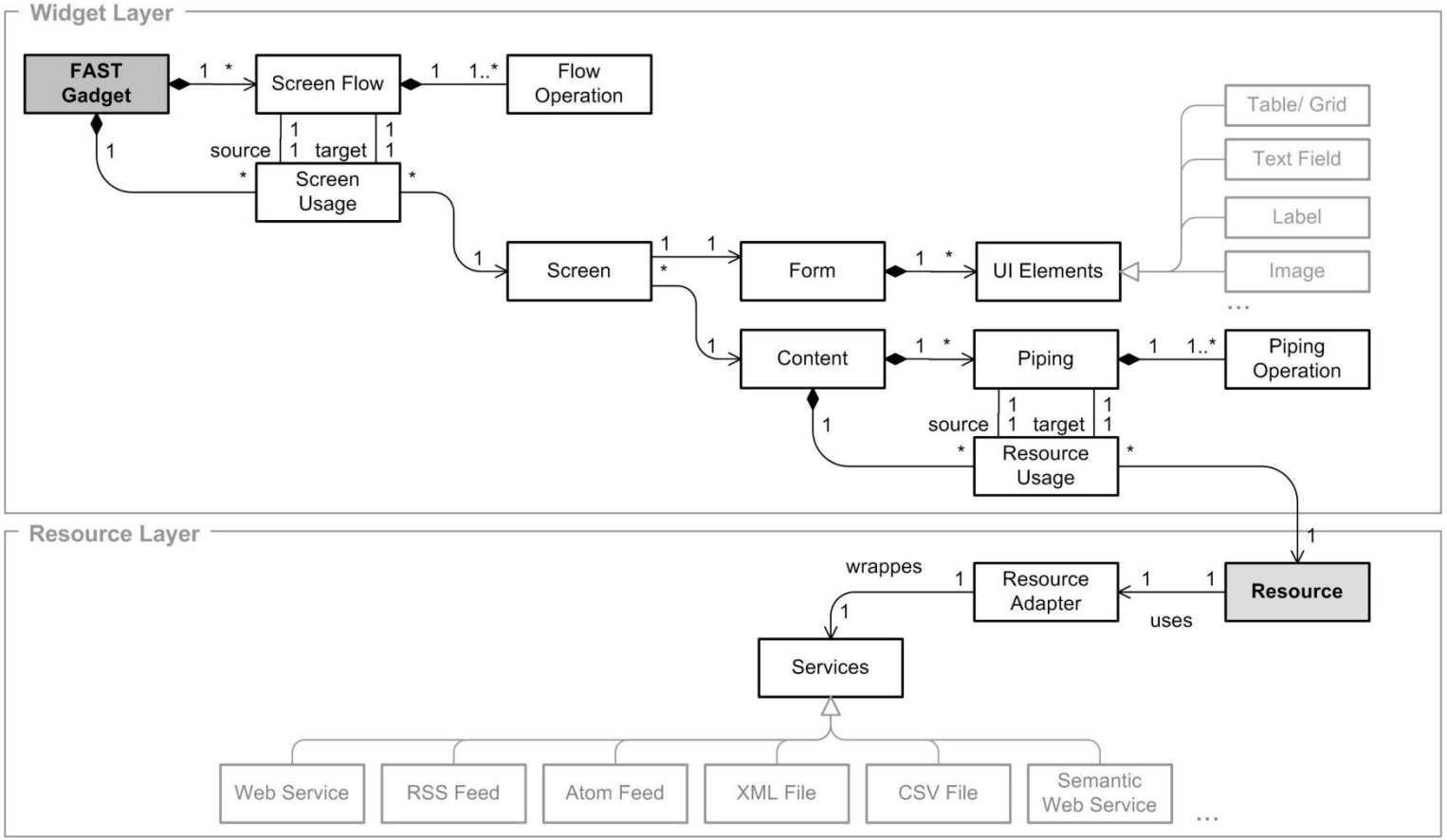
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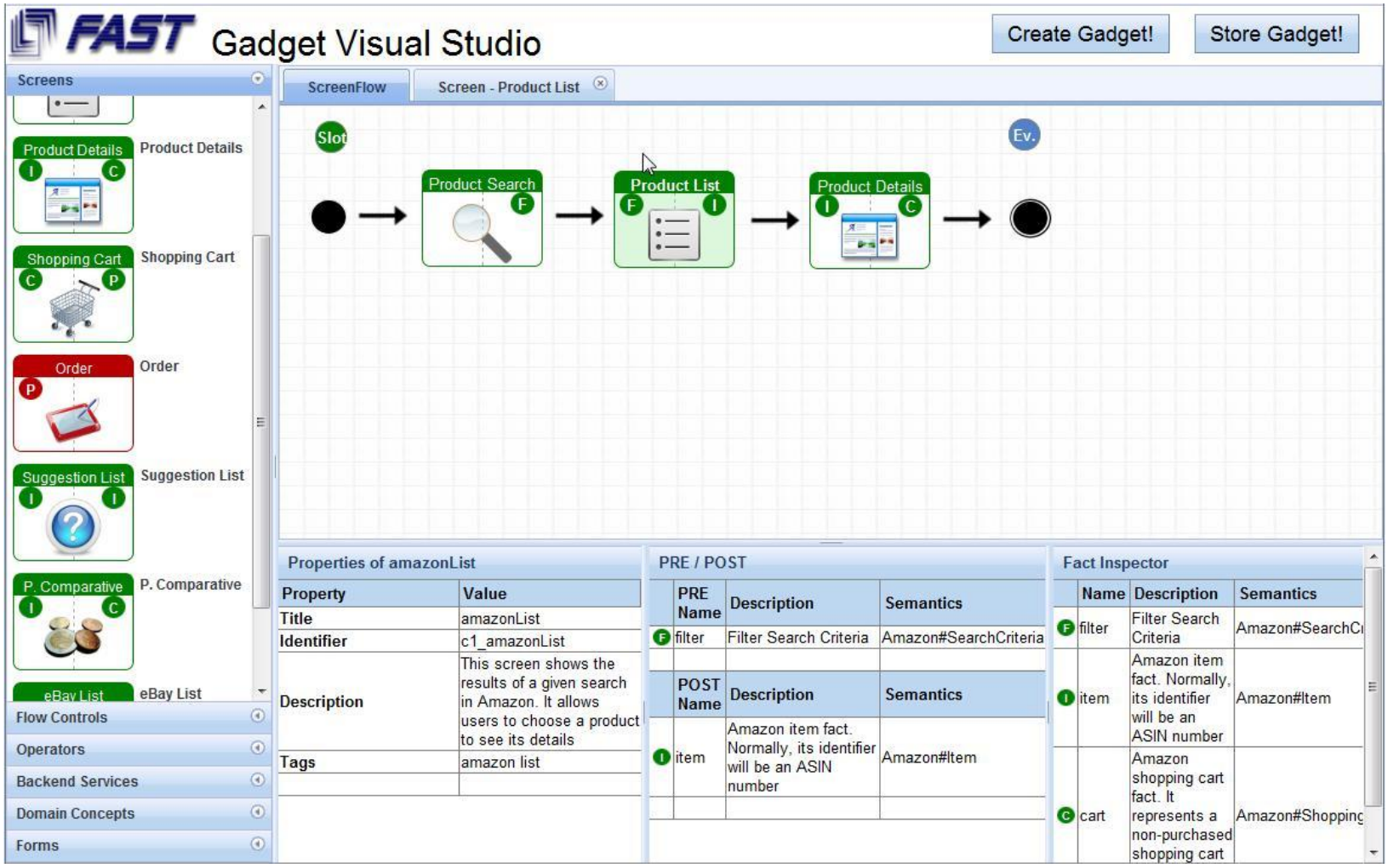
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Case Study
FAST Platform (Meta Model)



Case Study
FAST Platform (Screenshot)



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Conclusion and Outlook



- **New Emerging Design Principles**
  - Enterprise Mashup Stack
  - Emerging Intermediaries
  - Mass Collaboration
  - Lightweight Resource Composition
  - Perpetual Beta Development Model

- **Prototypical Implementations in the EU funded Project**

FAST http://fast.morfeo-project.eu

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Thank you!



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