Generic Business Model Types for Enterprise Mashup Intermediaries

SYSTEMATIC THOUGHT LEADERSHIP FOR INNOVATIVE BUSINESS

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Generic Business Model Types

Executive Summary

Problem Statement

Business Needs

- Current discussion in the scientific community is **limited on technical aspects**
- Business models** for these new kinds of grassroots platforms

Technology Trends

- Growing numbers of company internal and external **Web-based resources** based on open standards
- New upcoming tools to create **ad-hoc enterprise-class applications** without any programming skills

Design: Interaction Phase Model

Interaction Phase Model for Enterprise Mashup Environments

Organization similar to **communities** and **electronic markets**.

Identification of **three business model types** (Discovery, broker, marketplace)

Contribution to Knowledge Base

Scientific: Interaction Phase Model as an artefact

Practice: Guideline for designing Enterprise Mashup platforms

Agenda

- 1. Motivation and Problem Scope**
2. Research Approach: Design Science applied
3. Related Work and Objectives of the Solution
4. Design: Interaction Phase Model for Enterprise Mashup Intermediaries
5. Demonstration: Multi-Case Studies
6. Conclusion and Outlook

Motivation

“Yes, we can!” - From Automation to Peer Production

Adoption of Corporate Technology

“

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

*Which **features** have to be provided by Enterprise Mashup Intermediaries in order to match supply and demand?*

*What **generic business model types** exist?*

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Research Approach

Design Science applied

Identification of the Problem

Objectives of the Solution

Artefact Design

Artefact Demonstration

Research Methods

Literature Analysis

Literature Analysis

Literature Analysis
Reference Modeling
(Electronic Markets)

Multi-case (embedded)
Studies

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Enterprise Mashups

Enterprise Mashup Stack and User Roles*

Enterprise Mashups

Interaction Agent Model*

Three Agent Roles well known from Electronic Markets and Service-Oriented Architectures (SOA)

- **Provider** implements and hosts a mashable component (Mashup, Widget, Resource)
- **Intermediary** mediates between providers and consumers (improving navigation, transparency and governance)
- **Consumer** is able to retrieve and compose Mashup components according to his individual needs

Business Models

Business Model Hierarchy*

1 Business Model Concept <p style="text-align: center;">Business Model Concept</p>	Conceptual Level Definition <i>What is a business model?</i> Framework <i>What components belong into a business model?</i>
2 Business Model Types <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Business Model Type A</p> </div> <div style="text-align: center;"> <p>Business Model Type B</p> </div> </div>	
3 Business Model <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Company A</p> </div> <div style="text-align: center;"> <p>Company B</p> </div> <div style="text-align: center;"> <p>Company C</p> </div> <div style="text-align: center;"> <p>Company D</p> </div> </div>	Instance Level Instances (view of a company) Modelled instances
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Company A</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Company B</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Company C</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Company D</div> </div>	

Business Models

Business Model Hierarchy*

1 Business Model Concept

Business Model Concept

2 Business Model Types

Business Model Type A

Business Model Type B

3 Business Model

Company A

Company B

Company C

Company A

Company B

Company C

Company D

Real world company

MCM Business Model Concept

Interaction Phase Model

Multi-Case Studies

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Interaction Phase Model Overview

Characteristics

- Organization similar to communities and electronic markets
- Permanent loops between the converging design and runtime phases
- Real data sources

Interaction Phase Model

Knowledge and Intentions Phase

Interaction Phase Model

Contract (Design) and Settlement Phase

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Demonstration Multi-Case Studies

Multi-Case (embedded) Studies

- Unit of Analysis: Feature of the specific Product (Interaction Phase Model)

Demonstration

Multi-Case Studies (Context)

Intermediary	Strikelron	Seekda	Programmable Web.com	iGoogle Gadgets	IBM Mashup Center
General Information					
Owner	Strikelron	University of Innsbruck	John Musser	Google	IBM, Greenhouse Project
Supported mashable components	Resources	Resources (Web Services)	Resources (Web Services, REST, etc.)	Widgets	Resources, Widgets, Mashups
# components (Mashups, Widgets, Resources)	40 Resources	27813 Resources	1171 Resources 3731 Mashups	> 50.000 Widgets	475 Resources, 47 Widgets 107 Mashups
Active	2002 – today	2006 – today	2005 – today	2006 – today	2008 – today
Description	Traditional intermediary (heavy weight Web Services)	Web crawler, EU reserach project	Mashup intermediary	Consumer-oriented Mashup platform	Commercial Enterprise Mashup platform

Demonstration

Multi-Case Studies (Knowledge and Intentions Phase)

Intermediary	Strikelron	Seekda	Programmable Web.com	iGoogle Gadgets	IBM Mashup Center
Knowledge Phase					
Component description	Name, description, features, benefits, price conditions	Name, provider, user ratings, tags, availability	Name, provider, tags, ratings, data added, licensing	Name, provider, widget preview, popularity, rating	Name, provider, popularity, version, rating
Aggregation of collected information about component's quality	Monitoring of performance and uptime	Extensive analysis of the availability (i.e., response time)	-	-	Popularity
Browsing/ discovery of the catalogue	Free text search, sort by categories	Free text search, most used, recently found services, providers by country, tag cloud	Free text search, sort by categories, newest, most popular, API scorecard, Mashup matrix, tag cloud	Free text search, sort by categories, hottest, most users, newest	Free text search sort, by categories, top ratings, most popular, tag cloud
Certification	-	-	-	-	-
Intentions Phase					
Components Annotations	-	Tagging, rating, reviewing	Tagging, rating, reviewing	Tagging, rating, reviewing, sharing (Google contacts)	Tagging, rating, reviewing
Publication of Mashup components		Online form to add	Online form and API	Adding of new	Provider is able to specify the permission of a component
Promotion of components	-	-	-	-	-

Please find the details in the paper.

Demonstration

Multi-Case Studies (Contract and Settlement Phase)

Intermediary	Strikelron	Seekda	Programmable Web.com	iGoogle Gadgets	IBM Mashup Center
Contract (Design) Phase					
Design and creation of an individual working environment/ application	Sample application allows testing of a component	A Web Services invoker allows to test a Web Service,; a real design environment does not exist	-	Individual Mashup with several themes and so-called Google gadgets (widgets) can be added to the environment	It allows to create an individual Mashup by adding widgets from the catalogue.
Composition of mashable components	-	-	-	-	Widgets can be wired, resources can be piped with each others.
Composition matching	-	-	-	-	-
Settlement Phase					
Monitoring the consumption of mashable components and consumer behavior	-	Long term database monitors the availability of the Web Services.	The popularity of APIs is documented indirectly.	Popularity based on the consumer consumption is documented	Popularity based on the consumer consumption is documented.
Billing usage of mashable components	Commercial agreements and sales conditions	-	-	-	-
Management of the payment	Online subscription with credit card payment	-	-	-	-

Demonstration

Generic Business Model Types

1 Business Model Concept <p style="text-align: center;">Interaction Phase Model</p>	Conceptual Level Definition <i>What is a business model?</i> Framework <i>What features are supported by an Mashup intermediary?</i>
2 Business Model Types <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> Directory </div> <div style="text-align: center;"> Broker </div> <div style="text-align: center;"> Marketplace </div> </div>	
3 Business Model <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> ProgrammableWeb </div> <div style="text-align: center;"> IBM Mashup Center </div> <div style="text-align: center;"> Seekda </div> <div style="text-align: center;"> Strikelron </div> </div>	Instance Level Instances (view of an Mashup intermediary) Modelled instances
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- **Interaction Phase Model** for classifying Business Model Types for Enterprise Mashup Intermediaries
- **Three generic Business Model Types** (Directory, Broker, Marketplace)
- **Contribution to the Knowledge Base** according to the three cycles of design science research as proposed by Hevner
 - **Scientific:** Interaction Phase Model as an artefact
 - **Practice:** Guideline for designing Enterprise Mashups environments (Platform as a Service, PaaS)

Future Work

Enterprise Mashup Platform as a Marketplace

Future Work

SAP Research RoofTop Marketplace Prototype

The screenshots illustrate the SAP Research RoofTop Marketplace Prototype interface, which is designed for knowledge management and contract design. The interface includes a search bar, navigation tabs (Add Content, My Favorites, My Mashups), and various data tables and maps.

Customer Data Table:

ID	NAME	ADDRESS
1000016	Siemens	Viltschbacherplatz 2, 80312 Munich, Germany
1000017	T-Systems	Goldberger Allee 117, 53175 Bonn, Germany
1000018	Automation 21914556	2300 N Lincoln Ave, Chicago, IL 60614, United States of America
1000073	ABB Switzerland	Brown Boveri Strasse 6, 5401 Baden, Switzerland
1000019	MBIA John Paul	550 Madison Ave, New York, NY, United States of America
1000041	In-N-Out Burger	7029 W Sunset Blvd, Los Angeles, United States of America
1000048	Microsoft Corporation NY	212 5th Ave, New York, NY, United States of America
1000052	Sony Music	550 Madison Ave, New York, NY 10022, United States of America
1000051	Holiday Inn Munich -	Leopoldstrasse 194, 80804 Munich, Germany
1000061	Google Inc.	1600 Amphitheatre Parkway, Mountain View, CA, United States of America

Google News Siemens

Title: Adidas, Arcandor, Deutsche Post, Siemens: German Equity Preview - Bloomberg
Content: Ex-Siemens exec charged in Munich in bribery case - Reuters
 Nokia Siemens 3 Ireland in Radio Upgrade, HSPA Roll Out - Wall Street Journal
 ADVIA OPTICAL NETWORKING ANNOUNCES CHANGES TO ITS SUPERVISORY BOARD - MarketWatch
 Siemens Adlengeseellschaft (SI) Price/Value Alert Support Down To - Market Intelligence Center
 Three Former Siemens Managers Charged in Munich Bribery Probe - Bloomberg
 With American zeal and Teutonic precision, Siemens sets out stall - Times Online
 German prosecutors charge ex-Siemens manager - The Associated Press
 Siemens to lay 10m gas insulated, 380 kV overhead line at - Power Engineering Magazine
 Review: Siemens Gigaset SL370 - VIA today

Flickr Photos Siemens

ID	owner
3627958317	31.67/2008
3627774115	Glider: NK para MAC
3627772625	Sección de coche
3627780411	252.023 TH
3628688522	Resize Blend: NK
3628544612	Modelado_Pul Face
3628548252	Diseño de Libélula
3627739888	Sección de motor
3628542638	Modelado_Menu pop
3628316516	P280409_17.11002

Assisted Mode: On/Off | Events: mouseOver/Click | Emulated Development Environment:

Knowledge

Intentions

Contract (Design)

Settlement

SAP RESEARCH

Thank you!

Contact

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