## Agenda

- **Business/IT alignment**
  - Conceptual modeling evolution
  - IS model
  - Enterprise model and function integration
  - Business model ...
- **Business model**
  - Ontology of e-business models
  - Design science approach
  - Strategic fit and business/IT alignment?
- **Environment**
  - Complexity: more or less powerful stakeholders
  - Uncertainty: open issues that will influence the future
  - Disruptiveness: IT use by the market

## Conceptual modeling (requirement engineering)

- **Modeling**
  - Concepts & properties (ONTOLOGY)
- **Design**
  - Validation, elicitation & mapping
  - COMPUTER-AIDED DESIGN
- **Visualization**
  - Diagrams
IS model

Viewpoint: SOFTWARE ENGINEERING

IS model (ontology)

INFORMATION MANAGEMENT

WHAT?

Application

Event

Service

Financial aspects

User

Interface

State change

WHAT?

HOW MUCH?

HOW?

CASE tools …

Enterprise model

Viewpoint: BUSINESS PROCESS (RE-)ENGINEERING

Enterprise model (ontology)

ACTIVITY COORDINATION

WHAT?

Organizational GOAL

Process

Resource

Agent

Financial aspects

Team

Coordination

Activity

Role

Division

Rules

HOW MUCH?

CASE tools, Simulation, The Process Handbook

> State of the art in requirement engineering > Strategic fit weakly addressed

[Fox, 2001] [Yu, 1994] Toronto
**Business Model**

Viewpoint:
- BUSINESS DEVELOPMENT

**VALUE proposition**
Value configuration
Customer (relationship)

**Strategic fit**
- Organization GOAL
- Process
- Team (coordination)

**Function integration**
- Enterprise model
- IS model

**Business Model**
- IT strategy
- IT infrastructure

Business Source Premier

---

**Business Model: Buzzword or Meaningful Artifact?**

- A buzzword with no precise definition?
  - […] Executives, reporters and analysts who use the term don’t have a clear idea of what it means. They use it to describe everything from how a company earns revenue to how it structures its organization

  or …

- An artifact aggregating …
  - the value a company offers to one or several segments of customers, and
  - the architecture of the firm and its network of partners
  - for creating, marketing and delivering this value and relationship capital,
  - in order to generate profitable and sustainable revenue streams.

---

**Assumptions and Research Question**

**Assumptions**

1. **Business model has the right granularity for conceptual modelling**
2. **If explicitly defined, it should improve the business/IT alignment and the strategic fit**

   specially meaningful in e-business situations

**Research Question**

3. **What does an ontology of business models look like, for subsequent modeling, design and visualization?**
Research goals

1. Ontology
   - Concepts and properties of business model
2. Design
   - Desirable properties and axioms
   - A (document-based) CAD tool to designing business models
3. Visualization
   - Diagrams for representing parts of business models

➢ Role of business models in improving alignment and strategic fit
   • This is not about modeling the whole enterprise
   • It is not an attempt to explain business model success
   • The goal is not to re-write strategy.

Business Model (ontology)

What do we offer to our customers?

WHAT?

Value Proposition

Customer

HOLD?

VALUE proposition

Customer

WHO?

Customer

Channel

Relationship

Trust

How do we operate and deliver?

How do we get and keep them?

What are our key competencies?

How do we collaborate?

What are our revenues? Our pricing?

What are our costs?

Objects

DEFINITION

A VALUE PROPOSITION is an overall view of a firm’s bundle of products and services that together represent a value for its customers …

refers to [Kambil et al., 1996] …

SCHEMA

- Value Proposition
  - consists of
    - Offering
      - synonym: Benefice

- Customer

Montreux Jazz Festival

- 15-day festival in July
- since 1967 (Claude Nobs)
- 15 million Swiss francs budget
- 240’000 visitors
- 94’300 tickets
- 44 DJs
- 326 groups.
- 1’200 diverse staff members (during the festival, 5 otherwise)
- 140’000 liters of beer
- 502 national and international journalists
- franchise
  - Montreux-Detroit Jazz Festival, Montreux-Atlanta Jazz Festival, Montreux Festival On Tour, Montreux Jazz Festival in Monaco
**Capabilities, value propositions and customers**

<table>
<thead>
<tr>
<th>Capability</th>
<th>Value Proposition</th>
<th>Target Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attractive MJF venue</td>
<td>MJF concerts</td>
<td>Festival visitors</td>
</tr>
<tr>
<td>Mobilize Volunteer Staff</td>
<td>MIF off</td>
<td>Shops</td>
</tr>
<tr>
<td>Atmosphere &amp; Experience</td>
<td>MIF frequentation</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Contract Stars</td>
<td>MIF sponsorship</td>
<td>Record, TV, artists</td>
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<tr>
<td>Attract people</td>
<td>MIF recordings</td>
<td>Franchisees</td>
</tr>
<tr>
<td></td>
<td>MIF Brand &amp; Franchise</td>
<td></td>
</tr>
</tbody>
</table>

**Rules**

If a **VALUE PROPOSITION** targets a **CUSTOMER GROUP**, then the later is targeted by the former

\[
isTargetedBy(c,v) = targets(v, c)
\]

If a **DISTRIBUTION CHANNEL** delivers a **VALUE PROPOSITION** and reaches a **CUSTOMER GROUP**, then this **VALUE PROPOSITION** targets this **CUSTOMER GROUP**:

\[
delivers(d,c) \land reaches (d,c) \Rightarrow target (v,c)
\]

(7)

If a **VALUE PROPOSITION** targets a **CUSTOMER GROUP**, then it exists a **DISTRIBUTION CHANNEL** which delivers this **VALUE PROPOSITION** and reaches this **CUSTOMER GROUP**:

\[
target (v,c) \Rightarrow \exists d . delivers(d,c) \land reaches (d,c)
\]

(8)

**Value proposition**

**VALUE PROPOSITION Name:** MJF sponsorship

**Description:** The international reputation and the size of the MJF makes it an ideal partner for sponsorships. With its great concerts, large crowd and international media presence it gives affiliated sponsors a large visibility.

**Reasoning:** [Use]: An MJF sponsorship contract gives a partner the possibility to potentially address 240'000 people and build co-branded with the MJF.

[Risk]: As the MJF is an established institution with an established brand and a solid customer base the risk of entering a troubled partnership is very low.

**Value level:** [Market]: The MJF is a mass advertising "media" among others. Thought it is one of the top established festivals the value level of a sponsorship with the MJF is comparable to other festivals.

**Price level:** [Market]: The price level of a sponsorship at the MJF is situated at market levels.

**Composition of OFFERINGS:** (the detailed OFFERINGSs are captured in annex XXX)
- Affiliation
- Advertising space
- Sponsors' events
- Free tickets

**Value for **TARGET CUSTOMER**:** TARGET CUSTOMER 3: Sponsors

**Based on CAPABILITYs:**
- CAPABILITY 2: Attract and feature great stars and concerts
- CAPABILITY 3: Sponsors
- CAPABILITY 4: Attract people

**Distribution Channel (theory)**

1. **Customer Buying Cycle**

   AWARENESS > EVALUATION > PURCHASE > AFTER SALES

   ![Distribution Channel Diagram](image.png)

   **MULTI-CHANNELS**

   - Direct Sales
   - Telemarketing
   - Direct Mail
   - Retail Sales
   - Digital and Value-added Services

   **CUSTOMER**

   - ALL
   - SMALL
   - MEDIUM
   - ALL MEDIUM
   - BIG
   - ALL BIG

   **Demand-Generation Tasks**

   - Content Creation
   - Event Management
   - Social Media
   - Email Marketing
   - Display Advertising
   - Search Engine Optimization

   [Moriarty, 1990] [Mather et al., 2000] [Ives et al., 2005]

   **Links**
Distribution Channel (model)

- Value proposition
- Offering
- Customer Group
- Network
- Internet
- Call center
- Actor

Link consists of

• Description
• Reasoning
• Customer Buying Cycle
• Value Level
• Price Level

Distribution Channel (visual)

Channel strategy at the Montreux Jazz Festival (especially for Festival visitors)

- MJF advertising
- MJF concert listing
- Free distribution of the MJF program, also as supplement
- MJF event website: www.montreuxjazz.com
- MJF database: Artist descriptions, online program, MJF virtual tour
- MJF Sponsors
- Worldwide promotion

Value configuration (theory)

Value chain

Value network

Value shop

Value configuration (model)

- Description
- Reasoning
- Customer Buying Cycle
- Value Level
- Price Level
Value configuration (visual)

![Diagram of value configuration](image)

e-business models (ontology cont’d)

![Diagram of e-business models ontology](image)

Using OWL (Protégé)

![Diagram of using OWL with Protégé](image)
Methodology: DESIGN SCIENCE

- A problem-solving approach (engineering, artificial science)

“Create innovations that define ideas, practices, technical capabilities, and products through which the analysis, design, implementation, and use of information systems can be effectively and efficiently accomplished”

The goal is utility

<table>
<thead>
<tr>
<th>RESEARCH ARTIFACTS</th>
<th>Build</th>
<th>Evaluate</th>
<th>Theorize</th>
<th>Justify</th>
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<tbody>
<tr>
<td>Construct</td>
<td>LANGUAGE</td>
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<td>Model</td>
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<tr>
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<th>Outcome</th>
<th>EVALUATE</th>
<th>Method</th>
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<tr>
<td>Construct</td>
<td>Provides the language</td>
<td>The e-Business Model Ontology</td>
<td>Completeness, Understandability</td>
<td>Literature review, Interviews</td>
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<td>Model</td>
<td>Uses the construct to represent real world situations</td>
<td>Uses of the e-Business Model Ontology</td>
<td>Fidelity with real world phenomena, Completeness</td>
<td>Interviews, Case studies</td>
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<td>Method</td>
<td>Defines processes</td>
<td>Guidance for defining business models</td>
<td>Appropriateness</td>
<td>Literature review, Interviews Case studies</td>
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<tr>
<td>Instantiation</td>
<td>Shows that […] can be implemented in a working system</td>
<td>XMLschema and CAD tool</td>
<td>Applicability</td>
<td>Case Capture</td>
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Related work

<table>
<thead>
<tr>
<th>Marketing model ontology</th>
<th>Value Proposition</th>
<th>Target Customer</th>
<th>Distribution Channel</th>
<th>Customer Relationship</th>
<th>Value Configuration</th>
<th>Capability</th>
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</table>

Build and evaluate

Is the ontology complete?

Have we made any progress?

Related work

- Mentioning Elements
- Describing Elements
- Modeling Elements

Semi-structured interviews with practitioners

<table>
<thead>
<tr>
<th>Question Domain</th>
<th>Questions</th>
<th>Use of concepts and tools?</th>
<th>Fidelity with real world phenomena?</th>
<th>Potential applications of the business model concept and ontology?</th>
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</thead>
<tbody>
<tr>
<td>Questions on the use of business concepts &amp; tools</td>
<td>How do you plan the general business objectives of your company? Do you use any conceptual tools to plan your business or to sketch the general direction in which your firm is heading?</td>
<td>If yes, do you use any specific formalism(s) to do this? If yes, which one(s)?</td>
<td>If yes, do you use any specific software tool to do this? If yes, which one(s)?</td>
<td>How could such a model help you define business indicators? How could such a model help you group business concepts &amp; tools? How could such a model improve some parts of strategic planning?</td>
</tr>
<tr>
<td>Questions on the fidelity with real world phenomena</td>
<td>In your opinion, what elements are missing in the model presented before? In your opinion, what elements should not belong to the model presented before?</td>
<td></td>
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<tr>
<td>Final discussion</td>
<td>Do you have any final comments?</td>
<td></td>
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</table>
**Interview outcome**

<table>
<thead>
<tr>
<th>Category &amp; Industry Sector</th>
<th>Consultant 1</th>
<th>Consultant 2</th>
<th>Consultant 3</th>
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<td>Retail over Internet</td>
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<tr>
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<td>Service over Internet</td>
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<td>Consultant 3</td>
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</table>

Green = positive answers, red = negative answers, grey = neutral answers, white = not answered

**Case studies and uses by others**

<table>
<thead>
<tr>
<th>Company Industry Sector</th>
<th>Company Information</th>
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<tbody>
<tr>
<td>Soginex - Risk Management System provider</td>
<td>Swiss-based startup in 2005</td>
</tr>
<tr>
<td>Soginex - Risk Management System provider</td>
<td>Swiss-based startup in 2005</td>
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<td>Soginex - Risk Management System provider</td>
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<td>Swiss-based startup in 2005</td>
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<td>Swiss Mobile - Mobile services</td>
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</tbody>
</table>

**Case study**

**“IS and Conceptual Modeling - A Research Agenda”**

- **Method**
  - **Grammar**
  - **Script**

- **Context**
  - **Individual Differences**
  - **Social Agenda**

- **Research Problem Statement**
  - **Conceptual modeling**
  - **Conceptual methods**
  - **Conceptual models**
  - **Conceptual model**
  - **Conceptual models and methods**
  - **Conceptual models and methods**
  - **Conceptual models and methods**

- **Appropriateness of the building block concepts?**
  - Yes
  - No
  - Not applicable

- **Fidelity with real world phenomena?**
  - Yes
  - No
  - Not applicable

- **Applicability of ontology?**
  - Yes
  - No
  - Not applicable

- **Completeness?**
  - Yes
  - No
  - Not applicable

[Wand and Weber, 2002]
Role of business models in improving alignment and strategic fit?

Balanced ScoreCard (BSC)

Alignment with enterprise and IS models

Application portfolio and IT infrastructure
ENVIRONMENT SCANNING AND INTELLIGENCE

Viewpoint: e-BUSINESS DEVELOPMENT

ISSUE
Actor network
Market (usage)

BUSINESS intelligence
IT intelligence

BUSINESS strategy
IT strategy

ORGANIZATION infrastructure
IS infrastructure

Environment adaptation
Strategy
Function integration

> Modeling external (business & IT) environment

Assessing a technology environment

VISUALIZATION

ANALYSIS

REPRESENTATION

MODEL

Multi-perspective
LANDSCAPE
m-Business

> MICS Swiss NSF project

Environment model

UNCERTAIN
DISRUPTIVE

Factor & debatable question that influence the future
➢ Actor-issue analysis

WHAT?
Actor network
Market (usage)

HOW?
Supply & position of stakeholders
➢ Policy network analysis

WHO?
Stakeholder
Consumer

HOW MUCH?
Financial analysis

> "Jazz" currency

m-payment

MJF
Telekurs
Multipay
Bank

transactions
cl
erasing
statement
$
account

$
Market and adoption

Disruptive technology

Technology roadmap (and landscape)
m-payment

Disruption I? From operator-driven to self-organized solution

Disruption I? From card-based to phone-based solution

Competitive forces

1

Actor network

Power and threats

Substitute products (services)

Bargaining power

Suppliers

New entrants

Barriers to entries

Suppliers

Customers (channels)

Rivals among the competitors

GOALS

- “Who and what really counts”

POWER: an actor can get another actor to do something

LEGITIMACY: perception that the actions of an actor are desirable ... URGENCY: degree to which actor claims call for immediate attention

SALIENCE: degree to which manager give priority to actor claims

Stakeholder identification and salience

2

GOALS

- “Who and what really counts”

Actor issue analysis (model)

3

GOALS

- ranks the actor’s positions on many strategic issues,
- assess the convergences and divergences, and
- anticipates coalitions and conflicts

Assessment of:

- wlan/wifi
- wireless in China
- music
- LBS
- RFID
- standards

ISSUE

for the future

Actor network

Position

Salience

Clout & influence

ISSUE

Post

POWER: an actor can get another actor to do something

LEGITIMACY: perception that the actions of an actor are desirable ... URGENCY: degree to which actor claims call for immediate attention

SALIENCE: degree to which manager give priority to actor claims

[Freeman, 1994] [Mitchell et al., 1997]
Actor-issue analysis (theory)

PROSPECTIVE (Scenario planning)
- analysis of possible actor strategies and initiatives aimed at influencing issues and skewing system evolution towards the actors’ own preferences

NEGOTIATION (Policy making)
- Collective decision making results of individual (voting) behavior
- With conflict resolution
- Actors can influence others and affect their outcome
  – by making use of their power, for maximizing their expected utility
  – by exchanging their position for different issues, with collaborating actors

➢ Simulation model for forecasting the decision outcome

m-payment (II)

Influence analysis

➢ Influence and relationship between actors
  – Dominancy, control, power, auto-control …

Issue analysis and dissatisfaction

• Expected outcome of issues and dissatisfaction of actors
  – Importance of issue
  – (in-)stability

Input scale

satisfaction

expected

Issues

MNOs & ISPs against communities for free network

Midway outcome

auto-determination

influence by the others

relative power

MNOs powerful

Venues under control

The operator can use its influence on the regulator

Regulator is a conciliator …
Actor analysis and power distribution

- Relative importance of issues
- Power repartition and salience of actors over issues

Alliance analysis & proximity map

- Relative distance between actors
  - Based on an “alliance coefficient”

Conclusion

Questions …