New Business Models for the Software Industry: The Emergence of Cloud Computing and Software Ecosystems
Agenda

1. Software Business

2. Software-Cluster

3. Business Models in the Software Industry
   1. Type of Products and Services
   2. Positioning in the Value Chain
   3. Pricing and Profit Generation

4. Outlook
Software Business

Business Models and Strategies
Software as a Service
Cloud Computing
R&D and Innovation Management
Cooperations, Mergers and Acquisitions
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Software-Cluster

Truffle Capital: Largest software cluster in Europe

Supported by the German Federal Ministry of Education and Research (BMBF)

Cluster goals

- Cooperation in research and practice
- Economic growth
- Emergent business software
Subproject Business Models

Situation Today

- No unified definition
- No unified formal specification
- Business models are hard to compare and to evaluate

Our Goal

- Formal definition and specification
- Establish comparability and evaluability of business models
- Systematic decision support
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Business Models

A firm’s business model defines

1. Type of products and services offered
2. Market positioning within the industry value chain
3. Logic of profit generation
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Type of Products and Services Offered

Software is an intangible, digital good

- High first-copy costs
- Low reproduction costs
- High sunk costs
- Network effects
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Positioning in the Software Value Chain

Further Research Direction

Determine the degree of vertical integration in the software industry

- Case studies with software firms
- Balance sheet analysis

Developing a model to determine the optimal degree of vertical integration

Evaluating the impact of software ecosystems on the degree of vertical integration in the software industry
Software Ecosystems

A Software Ecosystem is a set of actors interacting in a shared market for software and services, often underpinned by a common technological platform or market (Jansen, Brinkkemper, and Finkelstein, 2009).

Software Ecosystems as a means to lower the degree of vertical integration

FaDOM: A software prototype for monitoring online marketplaces
Applications in Marketplaces

Own calculations and data collection.
Vendor Multi-Homing

Own illustration.
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# Software Product Pricing Parameters

<table>
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<th>Price formation</th>
<th>Payment flow structure</th>
<th>Assessment base</th>
<th>Price discrimination</th>
<th>Product bundling</th>
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<td>Single payment</td>
<td>Number of pricing components</td>
<td>1st degree</td>
<td>Offer</td>
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<td></td>
<td>Combination</td>
<td>Usage independent</td>
<td>3rd degree</td>
<td>Degree of integration</td>
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<td>Multi-dimensional</td>
<td>Price level</td>
<td></td>
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</tbody>
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Challenge: Pricing Models for Cloud Computing

Software as a Service (Saas)

Platform as a Service (Paas)

Infrastructure as a Service (Iaas)

Usage-dependent pricing in Software as a Service

“SaaS is hosted software based on a single set of common code and data definitions that are consumed in a one-to-many model by all contracted customers, at any time, on a pay-for-use basis, or as a subscription based on usage metrics.”
(Gartner, 2006)

“SaaS pricing is evolving toward true usage-based models. Most early examples of SaaS price on a fairly simplistic per-user per-month basis, sometimes with add-on costs for ‘extras’ like mobile, storage, or advanced modules.”
(Forrester, 2010)

“With the footprint expansion of software as a service (SaaS) and advent of cloud computing, pay-per-use or utility-type models have become more of a possibility and reality.”
(IDC, 2010)
Assessment Base in Software as a Service


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Outlook

Decision support in business model selection and evaluation

- Optimal make-or-buy strategies and degree of vertical integration
- Success factors in software ecosystems
- Successful pricing models in Cloud Computing and Software as a Service

Developing a software for business model generation and evaluation
Thank you!

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