40. Earning Money with Software

Prof. Dr. U. Aßmann
Technische Universität Dresden
Institut für Software- und Multimediatechnik
Gruppe Softwaretechnologie
http://st.inf.tu-dresden.de
Version 12-1.0, 26.01.13

1. Founding a Software Start-Up
2. The role of the markets
3. Business models
4. Sales meetings

Recommended Reading

- [Osterwalder/Pigneur] Alexander Osterwalder. Ives Pigneur. Business Model Generation. Wiley. !Fantastic!
  - There is a preview available from the website http://www.businessmodelgeneration.com/book, do NOT miss it
  - http://www.businessmodelgeneration.com/downloads/businessmodelgeneration_preview.pdf

- C. Barrow, G. Burke, D. Molian, R. Brown. Enterprise Development: The Challenge of Starting, Growing and Selling Businesses. Thomson Computing 2005

- R. Leicher. Verkaufen. TaschenGuide. Haufe-Verlag.

- Hermann Scherer. 40 Minuten für eine gezielte Fragetechnik. Gabal Verlag

- Accenture Campus Challenge
  - E.g.,: 2005. Digital Pen and Paper Applications.
  - Interesting project challenge, running every year in cooperation with TUD.

- http://www.wirtschaftslexikon24.net Enzyklopädie der wichtigsten Begriffe der Wirtschaftslehre

- http://unternehmenskick.de contains practical tips

- http://www.formblitz.de/ has business plan templates

- Forecasts:
  - IT-Studie der BITKOM, Jan 2007, www.bitkom.de
  - James Canton. The Extreme Future. The top trends that will reshape the world in the next 20 years. Plume/Penguin 2007

Successful Engineers and Entrepreneurs

- ▲ Konrad Zuse. Mein Lebenswerk. Springer. A MUST for every student.
- ▲ Michael Lewis. The New New Thing. A book about how Jim Clark, Netscape founder, founded Healtheon. Coronet Books, Hodder & Stoughton
- ▲ R. Würth. Skript on Entrepreneurship. Interfakultatives Institut für Entrepreneurship. TU Karlsruhe. http://www.iep.uni-karlsruhe.de/260.php
- ▲ Klaus Kemper. Heinz Nixdorf. Verlag Moderne Industrie.
  - ▪ The Nixdorf foundation donated given 2 chairs to the department (multimedia, computational engineering)
- ▲ The Google story.
- ▲ Steve Jobs. about Apple. (There are several books available)
- ▲ Bill Gates. The Way Ahead. (dtsch. Der Weg nach vorn. Die Zukunft der Informationsgesellschaft) Autobiography. Hoffmann&Campe.
- ▲ D. Brandes. Konsequent einfach. Die Aldi Erfolgsstory. Heyne-Verlag.
- ▲ David Thielen. Die 12 simplen Erfolgsgeheimnisse von Microsoft. Econ-Verlag
- ▲ W. Wiedeking. *Anders ist besser. Ein Versuch über neue Wege in Wirtschaft und Politik.* Piper-Verlag, München 2006.
- ▲ D. Tapscott. Wikonomics. 2007

Start-Up Foundation

- ▲ http://www.gruenderszene.de/ Das Gründerportal
- ▲ Free business plan: http://www.mbpw.de/fileadmin/Redaktion/Standard_Dateien/e_Handbuch_MBPW.pdf
- ▲ Freies Softwarepaket zum Gründen: http://www.softwarepaket.de/
- ▲ www.dresden-exists.de die offizielle Gründeragentur der TU
- ▲ BMBF exist Stipendium http://www.exist.de/
- ⋏ Technologiegründerfonds Sachsen TGFS www.tgfs.de
  - • 60 Mio capital; 45 Mio were left in 2010; they have to be spent until 2015
  - • Watch the chance!

40.1 FOUNDING A SOFTWARE START-UP

Strategies About Founding a Company (Start-Ups)

➢ Work for 3 years as an employee in the domain in which you want to become an entrepreneur
  - Get a network of contacts

➢ Use a BMBF exist stipend via Dresden Exists
  - To write a business plan within one year
  - To eventually found a start-up

➢ Use a BMBF-VIP „Validation des Innovationspotential", a Push-Transfer-Instrument of a professor

▲ Get always good salespeople on board
  - Wirtschaftsinformatiker
  - Business Angels
  - People that had already a start-up

➢ Use an incubator
  - To rent office space and share secretary

➢ Use regional networks such as Silicon Saxony www.silicon-saxony.de
  - This network meets several times a year, and you can find contacts

▲ The role of the venture capital
  - Having money at the right time is essential [MathCore]

Adresses of Regional IT-Networks in Germany

- Bundesverband BITKOM.org hat mehrere Software-Arbeitskreise (CPS, Security,…)
- Bundesverband IT-Mittelstand e.V. (BITMi) http://www.bitmi.de/
- CyberForumKarlsruhe – http://www.cyberforum.de/
- DiWiSH – Clustermanagement Digitale Wirtschaft Schleswig-Holstein – http://www.diwish.de/
- ikn 2020 – Das digitale Niedersachsen, Hannover – http://www.ikn2020.de
- Innozent OWL, Paderborn–http://www.innozentowl.de/
- IT–Forum Rhein-Neckar – hattp://www.itforum.de/
- IT-Netzwerk e.V., Kassel -http://www.it-netzwerk-online.de/
- ITS Niedersachsen, Braunschweig- http://www.its-nds.de/
- Java User Group Hessen,Kassel –http://www.jugh.de/JUGH!/
- ruhr networker e.V., Essen – http://www.ruhr-networker.de/
- REGINA e.V., Aachen -http://www.regina.rwth-aachen.de/
- Silicon Saxony, Arbeitskreis Software, Dresden http://www.software-saxony.de
- Softwarestützpunkt Region Cottbus –http://www.ssrc.de/
- Teliaison e.V., Braunschweig – http://www.teliaison.de/
- VKSI: Verein der Karlsruher Software-Ingenieure – http://www.vksi.de/

Getting into Business

- Small companies are a means to create employment
  - Large ones merge and destroy positions
- Finding a good business idea
  - What do you want to do? Most entrepreneurs earn money with what they want to do. What is your dream?
  - What is your hobby, skill, experience?
  - Do you have a new invention? [champagne class, Moonpig greeting cards]
  - Apply creativity technologies (brainstorming, …)
  - Find a big customer
    - Find a large user group
- Buy a business
  - Whole or in part (e.g., distribution or the development)
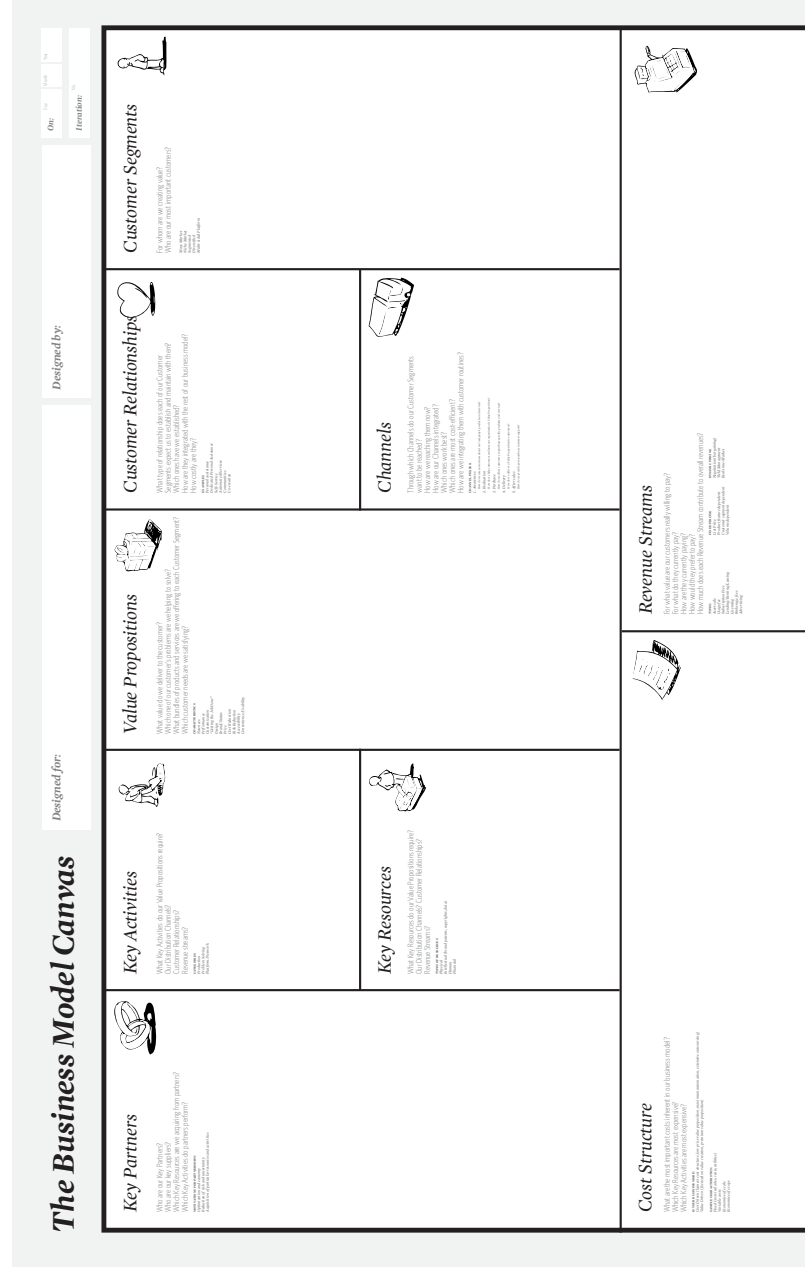- Management-Buy-Out
  - Buy a part of a company as a manager

40.2 BUSINESS DEVELOPMENT

Market Analysis

▲ Business development (Geschäftsfeldentwicklung) develops new services, products, and product lines for a company.

 ▲ It also develops business models (business cases), on which decisions for starting-up or product-introduction can be made

▲ Vision statement

 ▪ A simple statement of the vision. What do you want to achieve?

▲ Objectives

 ▪ More concrete goals

▲ Market analysis

 ▪ Customers: estimate the target group, its size
 ▪ Competitors: how many? how stable is the market, does it develop?
 ▪ Product or service
 ▪ Price
 ▪ Promotional measures
 ▪ Sales/distribution channels
 ▪ Location
 ▪ Where is my niche? Where can I sell?
 ▪ Market position:
  ▲ Location: Are we the only ones or how many competitors offer at this location? (Autos kauft man auf dem Automarkt, aber man verkauft sie nicht dort)
  ▪ Time: Can I sell later?

Business Model

- Business development creates business models
  - ▲ For start up and placement of new products
  - ▲ [Osterwalder/Pigneur] suggest to split the business model in 9 parts, divided by input, output, and in between
- Input (Resource) Side
  - ▲ Cost vs Profit
    - ▪ Estimate costs! Cost leadership?
    - ▪ Estimate break-even point!
    - ▪ Distinguish cash flow and profit
- Output Side
  - ▲ Target customer group
    - ▪ Companies? End customers? [champagne]
    - ▪ Selling directly or via distributor?
  - ▲ Channels
    - ▲ Market entry strategy
      - ▪ Segmentation of the market?
  - ▪ In Between: Value Proposition and Pain Killing

Business Model Generation with Osterwalder/Pigneur

- ▲ CC-BY-SA: http://www.businessmodelgeneration.com/downloads/business_model_canvas_poster.pdf

The Business Model Canvas

Key Partners · Key Activities · Value Propositions · Customer Relationships · Customer Segments · Key Resources · Channels · Cost Structure · Revenue Streams

www.businessmodelgeneration.com

Business Model Generation with Osterwalder/Pigneur

➢ Based on the metamodel "Business model canvas", you can generate your own business model with 9 components

➢ [Osterwalder/Pigneur] shows many examples, Patterns of business models, and strategies for brainstorming

- This is a very practical book, buy it!

Different Markets

▲ Mass market vs high-price products (specialist tools)
▲ Product vs service business
- A product would be good, but a service doesnt need so much capital
- Start with a service, try to distill a product
- Start with an application, try to distill a framework
▲ Jumping on the next running train (old markets vs new markets)
- Dont try to enter an old market – it will be very hard
▲ Booming markets
- Which market will boom? which ones are satisfied?
- Which market will die? (retreat)
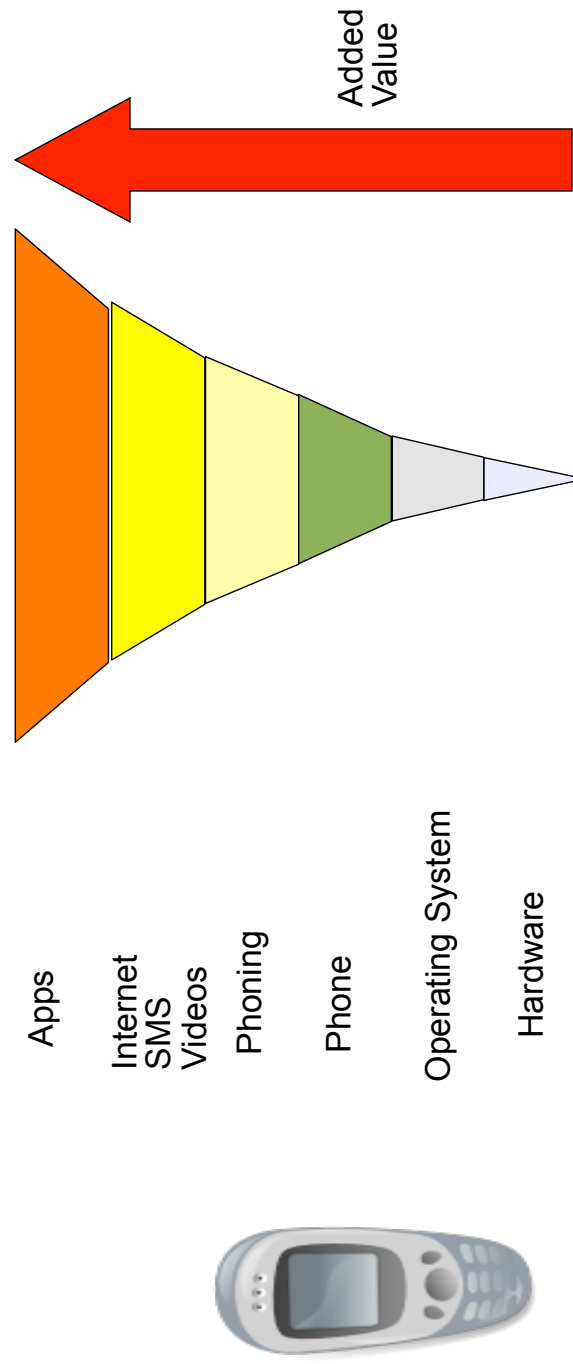- Which market is satisfied (change the way how to earn money)

Time In Markets

- **The early bird finds the corn** (Being first in a market)
  - Once with a share, there is a good share to keep it
- **The second bird also finds a corn**
  - Being second, you must be more enduring, but you can learn from other's mistakes
  - Microsoft:
    - Windows
    - Internet Explorer
- **The "constant improver" will find all corns**
  - Kaizen, a Japanese strategy, intends to improve quality continously
  - [Wiedeking]
- Winning a new customer is 10 times harder than keeping a customer

Earning money with software

TECHNISCHE UNIVERSITÄT DRESDEN

Base and Dependent Markets

- Base markets vs dependent markets
  - Consultancy
  - Service
  - Product (Application)
  - Framework (Product line) Framework markets (component platforms) are more basic than application markets
  - Platform. Platforms provide run-time environments for all other levels (Ex. operating system, database system, web system, ...)
- It takes longer to gain a base market,
  - but the other application markets depend on it
- Piggipacking:
  - Work in a market that depends on a base market, e.g., in a framework or platform market
- Domain-specific markets need domain experts and domain knowledge
  - SAP has always worked in the business software market, a domain-specific market
  - Combined with a component platform

Earning money with software

TECHNISCHE UNIVERSITÄT DRESDEN

Example Boom Markets

- **RFIDs**
  - RFID can store a product memory
  - Identification: RFIDs will replace price tags (Streifencode)
  - RFIDs enable global traceability of goods and all their parts (excellence in logistics)

- **Expert portals**
  - Searching knowledge is an expensive business
  - Google is a start
  - Domains: medicine, personal relationships, house construction, financial services, …

- **Personal communication applications**
  - SMS
  - Tunes for mobile phones

- **Specialized search engines**

- **Digital Pens**
  - Automation of workflows on paper and computer in parallel
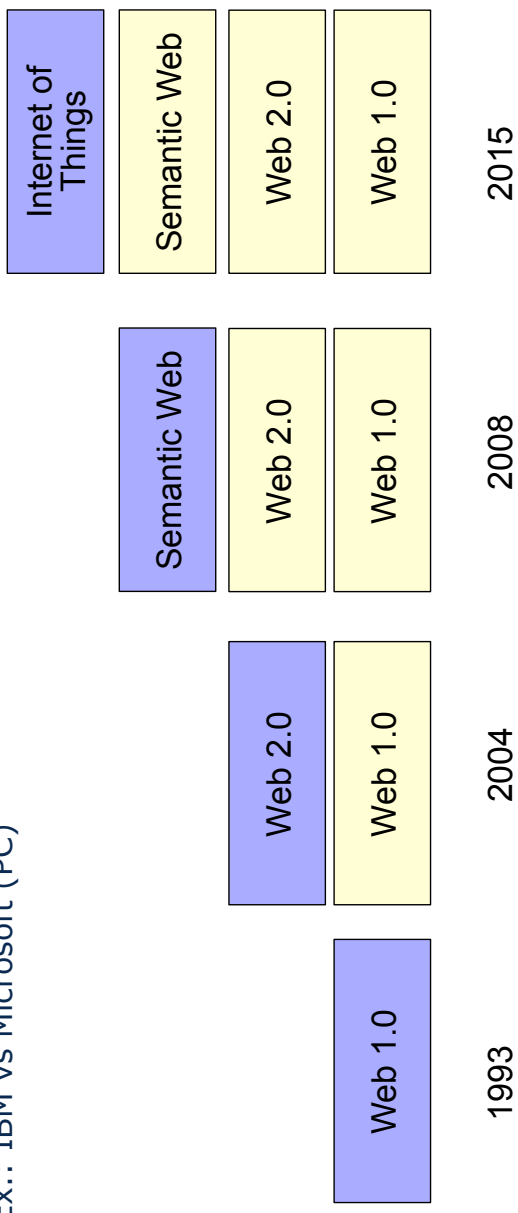

Value Creation (Added Value) by Software

- In a **value chain** (Wertschöfpungskette), the value is most often created by software; all other layers are **commodity**
- Example: mobile phones

Added Value

Apps

Internet
SMS
Videos

Phoning

Phone

Operating System

Hardware

Chance: Use the Impulse of Innovation Waves

- **Innovation-Waves** are initiated by new **disruptive technologies**
  - ▲ They lead to exponential growth of markets and exponential diminishing of markets (exponential market change)
  - ▲ Example: Apple vs Nokia (Smartphone, Tablet)
  - ▲ Ex.: IBM vs Microsoft (PC)

1993	2004	2008	2015
Web 1.0	Web 1.0	Web 1.0	Web 1.0
	Web 2.0	Web 2.0	Web 2.0
		Semantic Web	Semantic Web
			Internet of Things

Who's going to be the global player for
- Services in Web 2.0? [Google]
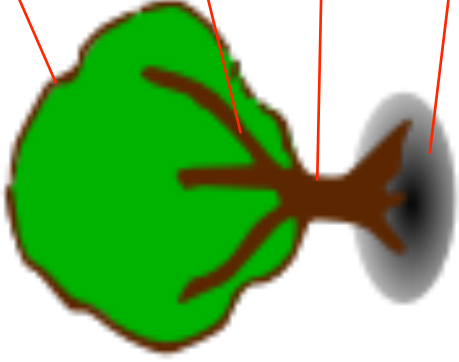- Services in the internet of things (cyber-physical systems)?

Chance Innovationsstrukturen: Wurzel, Stamm, Ast, Zweig?

- ▲ Grundlegende und abhängige Anwendungsfelder
  - ▪ In den abhängigen Feldern wird der "AddedValue" geschaffen
  - ▪ Aber sie existieren nur in Abhängigkeit vom Grundanwendungsfeldern

Zweiganwendungsfeld mit Zweiginnovationen

Astanwendungsfeld mit Astinnovationen

Stamminnovation "disruptive technology"

Wurzelinnovation

Slide 1

Chance: Eingebettete automatisierende Systeme

- Intelligentes Gebäude

Zweiginnovationen:
- Intelligenter Umgang mit Energie (mehr als Passivhaus)
- Life Sciences / assistierendes Gebäude (Wohnen im Alter, Health Care)

Astinnovation: Automatischer Entwurf für neue, branchenübergreifende Anwendungsfunktionen (2007)

Stamminnovation: Integrierte Datenmodelle für ganze, voll vernetzte Gebäude (2000)
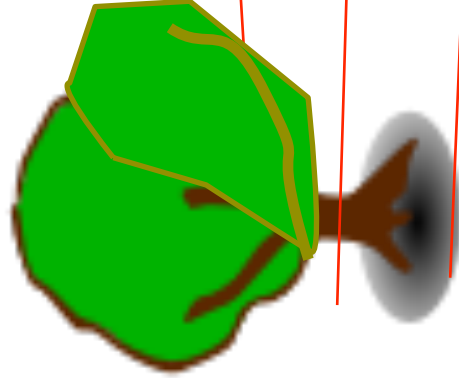
Wurzelinnovation: reaktive Datennetze (1990)

Slide 2

Nutzen von Veränderung der Wertschöpfungsfelder

- ▲ Wo entstehen neue Stämme?
  - Mittel- u. langfristige Veränderung
- ▲ Wo entstehen neue Äste?
- ▲ Wo entstehen neue Zweige?

Grundlagenforschung

Angewandte Forschung

Industrie

Neue Zweiganwendungsfelder

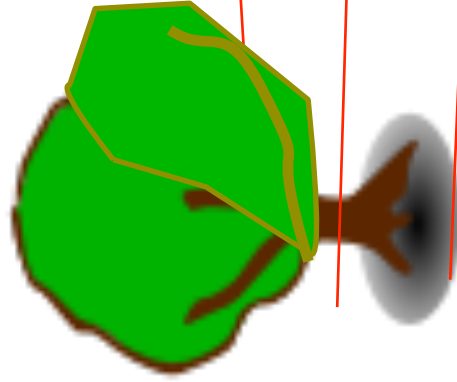Neue Astanwendungsfelder

Neue Stamminnovation

Wurzelinnovation

Web site www.plasticlogic.com

➢ Produced since 2007 in Dresden

➢ No German product so far

Earning money with software

TU Dresden, Prof. U. Aßmann

➢ Stamminnovation e-Papier von

➢ www.plasticlogic.com (Cambridge, Dresden)

▲ Wo entstehen neue Software-Äste?
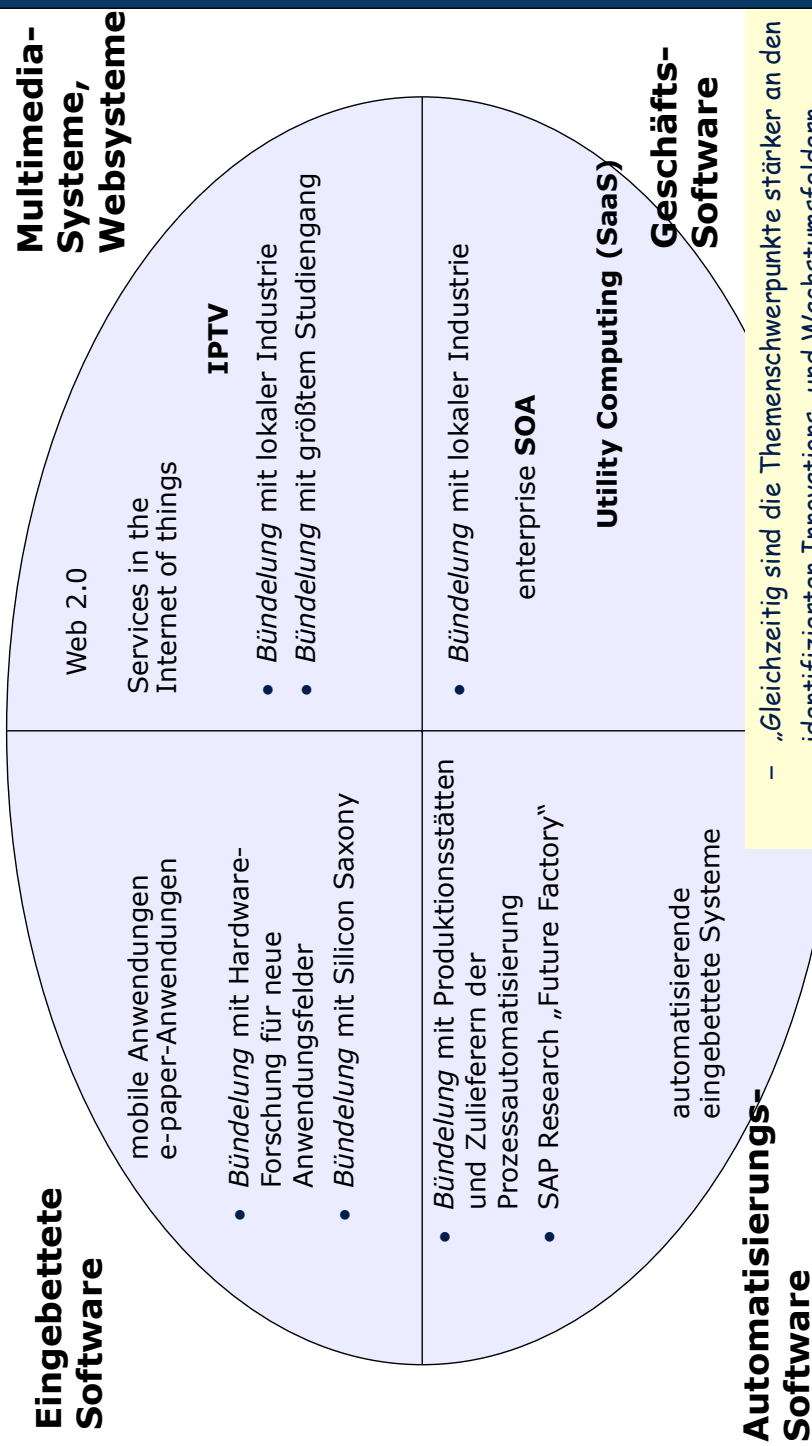
Neue Zweiganwendungsfelder:
Newsreader auf e-paper

Neue Astanwendungsfelder:
e-paper laptop

Neue Stamminnovation: e-paper

Wurzelinnovation: e-ink

Earning money with software

TU Dresden, Prof. U. Aßmann

- Vom Jan. 2007, herunterladbar bei www.bitkom.de
- Strategische Wachstumsfelder:

- **Eingebettete Systeme (9% Wachstum/J)**
- Biometrie
- Digitales Rechtemanagement
- **IT Utility Services (SaaS)**
- **Service-orientierte Architekturen (SOA)**
- IPTV/**Mobiles Fernsehen**
- Weitere Themen: Breitbandtechnologien, **RFID** und Telematik.

Themenfelder: Synergie mit den Stärken der Region Sachsen

Multimedia- Systeme, Websysteme

Geschäfts- Software

IPTV

Web 2.0

Services in the Internet of things

- *Bündelung* mit lokaler Industrie
- *Bündelung* mit größtem Studiengang

Utility Computing (SaaS)

- *Bündelung* mit lokaler Industrie

enterprise **SOA**

Eingebettete Software

mobile Anwendungen e-paper-Anwendungen

- *Bündelung* mit Hardware-Forschung für neue Anwendungsfelder
- *Bündelung* mit Silicon Saxony

- *Bündelung* mit Produktionsstätten und Zulieferern der Prozessautomatisierung
- SAP Research „Future Factory"

automatisierende eingebettete Systeme

Automatisierungs- Software

– *„Gleichzeitig sind die Themenschwerpunkte stärker an den identifizierten Innovations- und Wachstumsfeldern auszurichten."* [Berger]
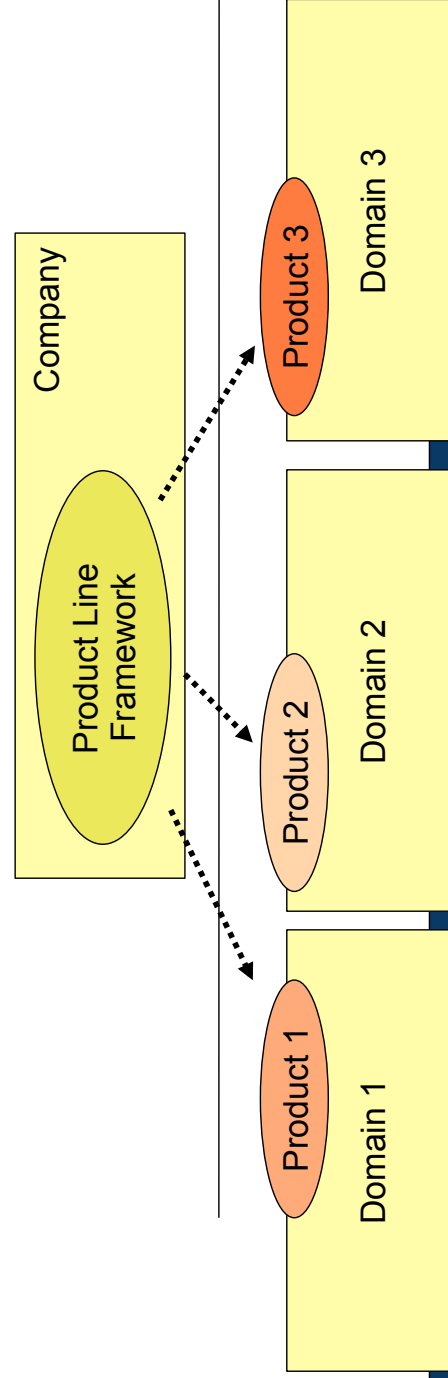
40.4 SOFTWARE BUSINESS MODELS

Business Plans

- It is hard to earn money with software
- A **business plan** should be made at the beginning, before starting-up or before product introduction
  - Business model
  - Market analysis
  - Cost planning (variant A, B, C)
  - Turnaround planning
- Business plans are the basis for
  - Getting a decision of the upper management
  - Getting a venture capitalist involved
- Decide in the business plan for a business model

Closed-Source Software Business Models

- ▲ Leasing (where others buy)
- ▲ Rent (where others buy)
- ▲ Sell advertisements [Opera]
- ▲ Sell directly, order via internet [Dell]
- ▲ Sell via auction [ebay]
  - ▪ Suspense during selling is a surprising effect
- ▲ Quality [Tupperware]
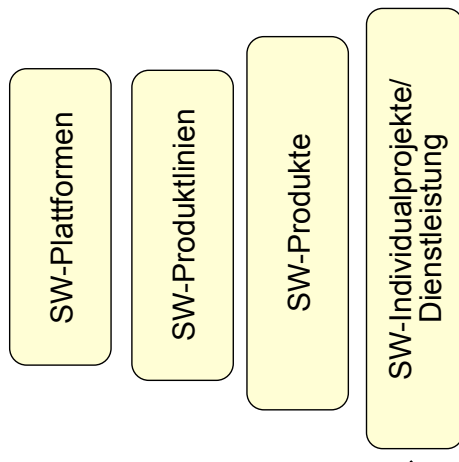- ▲ Speed [amazon]
- ▲ Client relationships [Tupperware]

Open Source Software Business Models

- ▲ http://en.wikipedia.org/wiki/Open_source
- ▲ Free product ("free taste")
  - ▪ Give the product for free and sell applications or consulting
  - ▪ Mould a market with the product
  - ▪ Ex. Adobe pdf with Acrobat Reader
- ▲ Free framework
  - ▪ Give the framework for free, create a community, and sell applications
  - ▪ Ex. IBM gives Eclipse for free, fosters a community, and many sell
- ▲ Release Politics
  - ▪ with union-fs (overlay)
- ▲ Micropayment
  - ▪ Use micropayment companies for installation or run of a software (PayPal, ..)
  - ▪ Use Telecom billing
- ▲ Choose licences carefully
  - ▪ http://creative-commons.org
  - ▪ GPL is a virus that infects all extensions
  - ▪ LGPL not

- Free "taster" versions
  - Give out earlier version of the product for free
  - Sell the new version
  - Ex. www.gentleware.com
- Free "community" versions
  - Give out a stripped version (e.g., only for 1 user, 1 database, ..)
  - Sell full version
- Free time-restricted versions
  - 1 month

- Have a framework in-house.
- Know how: instantiate new products with it, that are sold
  - Keep the product line framework as company secret
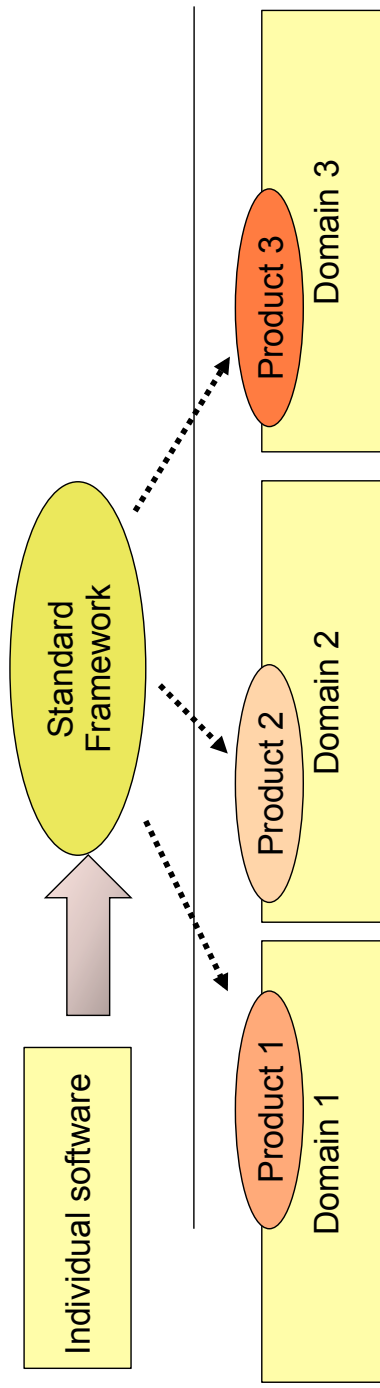- Examples:
  - SAP, Comarch, many others

Company

Product Line Framework

Product 1 — Domain 1

Product 2 — Domain 2

Product 3 — Domain 3

"Software Machine Tool (SW-Werkzeugmaschinen)"

- Have a very complicated *Machine Tool* in-house.
- Know how to produce products with it, that are sold
  - Do not sell the machine tool
  - Keep the know-how as company secret
- Examples:
  - Compiler generators for specific compilers
  - Abstract interpretation generators for program analyses (www.absint.com)
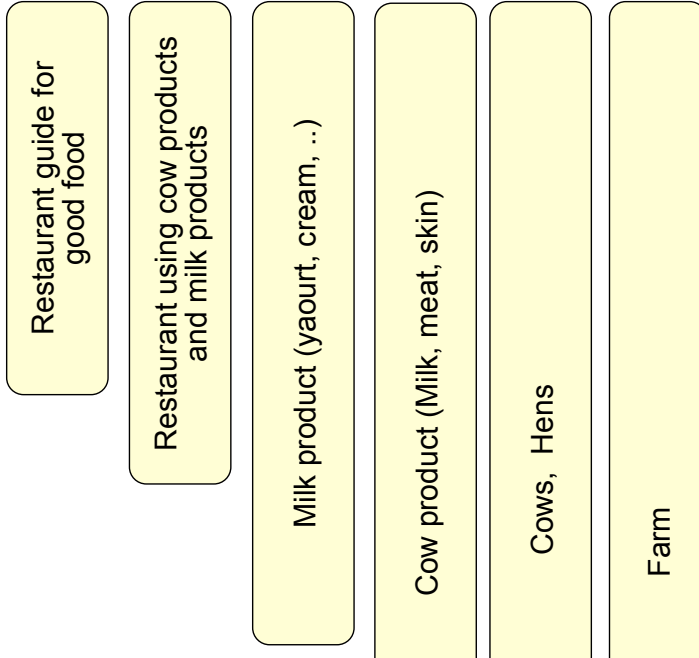 - Semantic search engines for different domains (www.transinsight.com, www.gopubmed.com)

Company

Machine Tool → Product 1 / Domain 1, Product 2 / Domain 2, Product 3 / Domain 3

Business Model "Grandfather Machine Tools (Großvater-Werkzeugmaschinen)"

- Language-Universal Tool generates
  - Language-1-specific tool generator
  - Language-n-specific tool generator
- Those machine tools continue to bear grandchildren products

Company

Grandfather Machine Tool → Machine Tool 1 Language-specific, Machine Tool 2 Language-specific

Machine Tool 1 → Product 1.1 / Domain 1.1, Product 1.2 / Domain 1.2

Machine Tool 2 → Product 2.1 / Domain 2.2, Product 2.2 / Domain 2.2
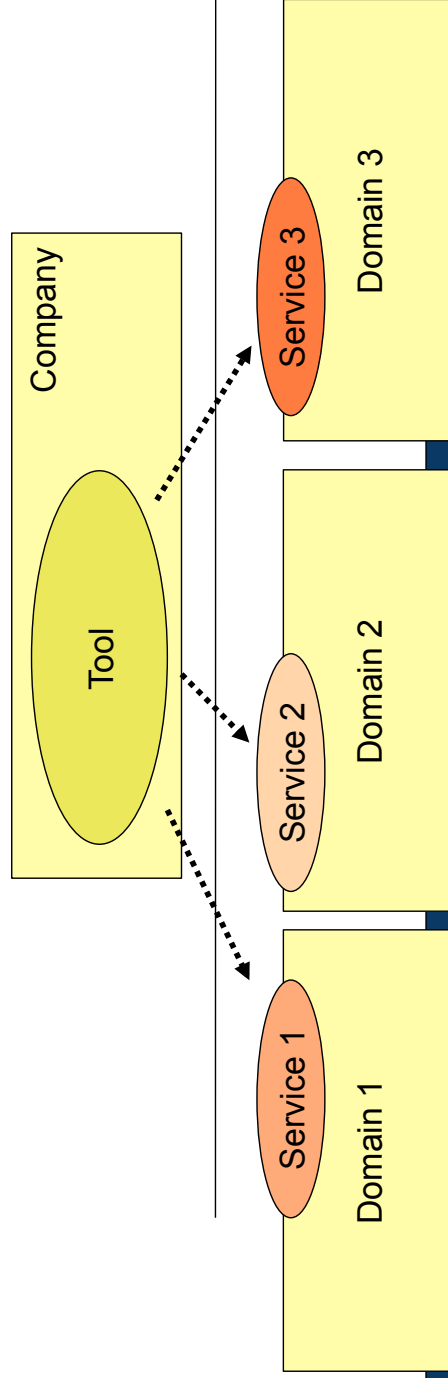
...money with software

The Farm Approach

➢ With machine tools and product lines, you get an ecosystem of products and services.

- Services are easy to start with
- Products are harder
- Platforms are lower levels
- However, if you have a platform on a lower level you can adapt to changes much easier
- Do several things on several layers

Restaurant guide for good food

Restaurant using cow products and milk products

Milk product (yaourt, cream, ..)

Cow product (Milk, meat, skin)

Cows, Hens

Farm

Business Model "Grandfather Workflows"

➤ Workflow-Universal Tool generates
  - ■ Workflow-1..n
➤ Those workflows continue to bear grandchildren workflow portals (form-filling portals)

Company

Grandfather Generic Workflow Engine

Workflow 1

Workflow 2

Product 2.2 — Domain 2.2 Workflow portal 2.2

Product 2.1 — Domain 2.2 Workflow portal 2.2

Product 1.2 — Domain 1.2 Workflow portal 1.2

Product 1.1 — Domain 1.1 Workflow portal 1.1

"Software as a Service" (SaaS, Utility Computing)

- ▲ Have an engine in-house and sell a (web) service
  - ▪ Use AJAX for incremental processing on the web
- ▲ Ex. Google docs

Company

Tool

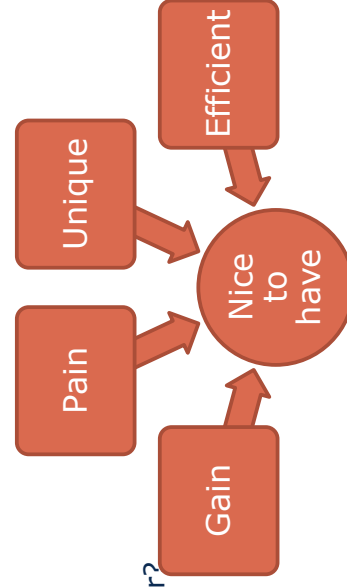Service 1 — Domain 1

Service 2 — Domain 2

Service 3 — Domain 3

"Software Platform" (Software Ecosystem)

- ▲ A **software platform** is [Popp]

Business Model "Versucherle": Plugins under Dual Licensing

- Companies can make plugins for OSS tools under dual licensing
  - Thunderbird, Firefox, OpenOffice, Eclipse, …
- Example: Quicktext Thunderbird extension
  http://extensions.hesslow.se/
  - QuickText is free
  - QuickText Pro is commercial
- Advantage: Platform has already many users and a large market

40.4 SALES MEETINGS

- ▲ Prepare a sales meeting
  - Analysis of client's situation (needs, problems, state of business)
    - State analysis (IST-Zustand)
    - Problem analysis is most important
  - Goal analysis (needs, offers, next contact, alternatives, additional offers)
  - Strategy (introduction, questions, arguments, defending against counterarguments)
  - Control of meeting (achievements, why I failed, further contacts)

- ▲ Questions are most important
  - For analysis of the customer's needs
  - For giving him ideas
  - For directing the customer

- ▲ Phases of the sales meeting: (InIAC)
  - Introduction, often with a sales pitch (talk)
  - Information
  - Argumentation
  - Committment

[Leicher]

- ⋀ In order to sell, you must inform the customer about
  - The added value she can buy
  - The pain she can be freed of.

- ⋀ A sales pitch convinces the customer about a **unique selling point** of a service or product.

- ⋀ Train talking in front of customers
  - Your talks in University are simple preparations

- ⋀ The pitch must answer the questions PaGUE for the customer:
  - What is my pain I will be freed from?
    - Why will I be *happy* with this new thing?
  - What is my gain (added value)?
    - Why will I *love* this new thing?
  - What is the unique selling point of the thing?
    - Why will I live much better than my neighbor?
  - Will the cost of buying it be efficient?
    - Why will it be cheap enough for the gain?

- ⋀ Structure a pitch with PaGUE!

Pain   Unique   Efficient

Gain

Nice to have

Different Types of Questions in Sales Meetings

- ▲ Open questions: begin with who, why, when, which...
  - ▪ The customer can talk afterwards... (information phase)
- ▲ Usefulness questions: which benefit does the customer have
  - ▪ "what do you gain with this method?"
  - ▪ "when will you be able to achieve turnaround with this method"
  - ▪ "what do you think about this simplification?"
- ▲ Closed questions:
  - ▪ Do you? Don't you?
  - ▪ These questions force decisions (commitment phase)
- ▲ Alternative question:
  - ▪ "Would you prefer alternative A or B?"
  - ▪ "is a red or blue car better?"
- ▲ Suggestive questions:
  - ▪ "is it true that you are interested to simplify your production?"
  - ▪ Handle them with care
- ▲ Positive questions: try to avoid negative questions
  - ▪ "Are there problems?" --> "What happened?"
- ▲ Transform statements into questions
  - ▪ "Our competitor is too expensive." --> "Do you also feel that our competitor is too expensive?"

State Questions

- ⋗ A **state question** asks the customer about his/her state of affairs
  - • „How can I help you?"
  - • „Which functions are you interested in?"
  - • „With which supplier do you work these days?"
  - • „How large is your budget?"
  - • „How is the decision process?"
- ⋗ State questions are asked first, to enter the discussion

Problem Questions

- A **problem question** analyzes together with the customer his problems. Problem questions
  - clear the mind of the customer
  - Show him the situation more clear
- Examples
  - „What is disturbing wiht your supplier?"
  - Which functionality is your product lacking?
  - Which problmes do you have with the tool you use these days?

Earning money with software

Effect Questions (Auswirkungsfragen)

- An **effect question** analyzes together with the customer the effect of his problems and the consequences of his decisions.
- Effect questions
  - Visualize the effects of the current situation to the customer
  - Look into the future
  - Highlight trends and developments
  - Bring the customer the insight that he must solve his problem
- Examples for positive effects
  - „What is the significance of this problem with your supplier?"
  - Which other problems would this cure?
  - What should be changed to increase the effictivity of this tool?
  - What does the solution of your problem mean to the win/balance of your company?
- Examples for negative effects
  - „What is the significance if this problem is not solved?"
  - Which other problems would result if this is not solved?
  - Supposed you leave it like it is, what would result?

Effect questions are extremely important for sales decisions

Earning money with software

Summarization Questions

➢ A **summarization question** summarizes the results of the analysis and attempts to get the agreement with the customer about the analysis

➢ A **benefit question** highlights a benefit to the customer.
- „Which additional space could you win buying this new machine?"
- „How would the win of your company rise, given you buy this machine?"

Benefit questions are extremely important for sales decisions

---

The End