



# 40. Earning Money with Software

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

- ▶ [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](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](http://www.bitkom.de)
  - James Canton. The Extreme Future. The top trends that will reshape the world in the next 20 years. Plume/Penguin 2007

- ▶ 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. Konsequenz 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

- ▶ <http://www.gruenderszene.de/> Das Gründerportal
- ▶ [Free business plan: http://www.mbpw.de/fileadmin/Redaktion/Standard\\_Dateien/e\\_Handbuch\\_MBPW.pdf](http://www.mbpw.de/fileadmin/Redaktion/Standard_Dateien/e_Handbuch_MBPW.pdf)
- ▶ Freies Softwarepaket zum Gründen: <http://www.softwarepaket.de/>
- ▶ [www.dresden-exists.de](http://www.dresden-exists.de) die offizielle Gründeragentur der TU
- ▶ BMBF exist Stipendium <http://www.exist.de/>
- Technologiegründerfonds Sachsen TGFS [www.tgfs.de](http://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

- 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](http://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]

- 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 - <http://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/>
- Teliason e.V., Braunschweig - <http://www.teliason.de/>
- VKSI: Verein der Karlsruher Software-Ingenieure - <http://www.vksi.de/>

- ▶ 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

- ▶ 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 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](http://www.businessmodelgeneration.com/downloads/business_model_canvas_poster.pdf)

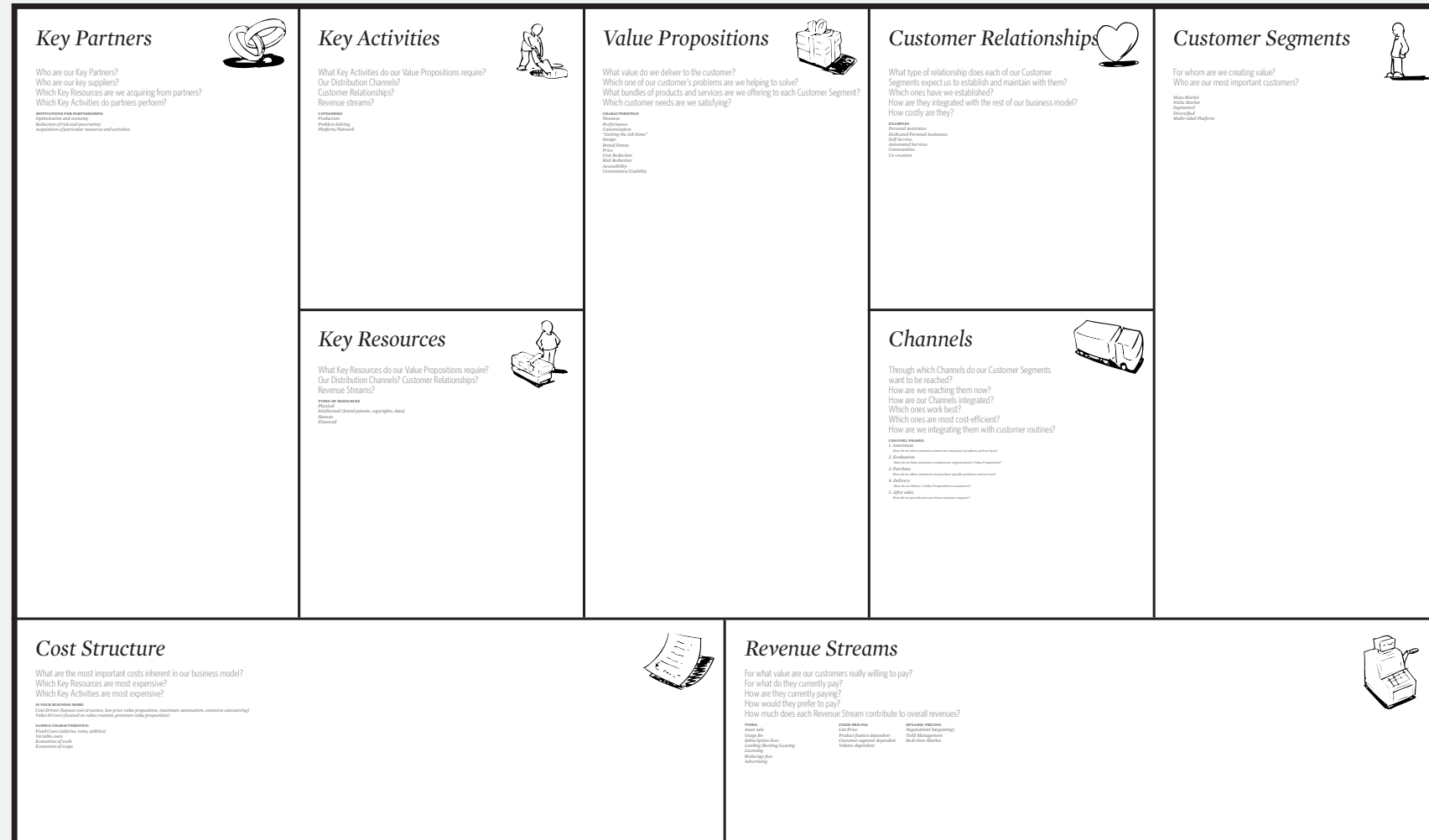
## The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year

Iteration: No.





# 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!

- ▶ 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)

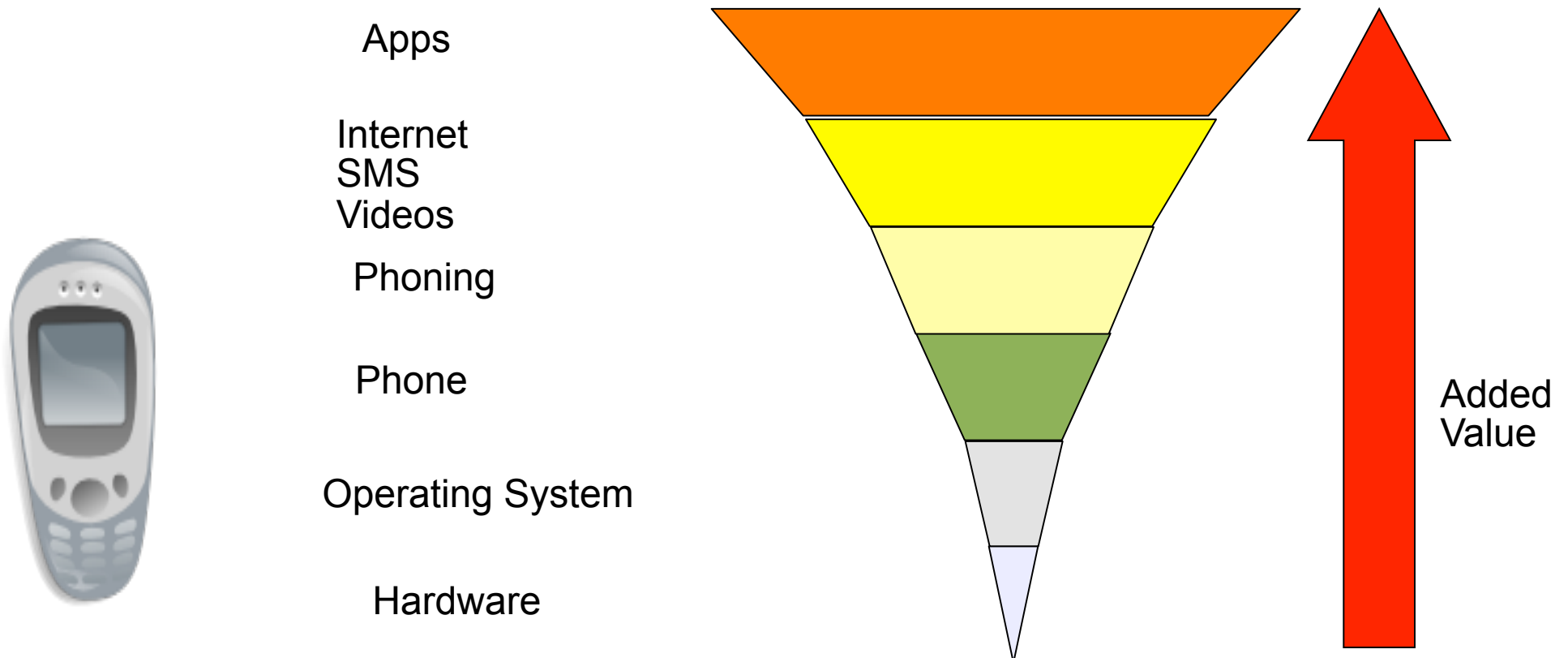
- ▶ **The early bird finds the corn** (Being first in a market)
  - Once with a share, there is a good share to keep it
- ▶ **The second bird also finds a corn**
  - Being second, you must be more enduring, but you can learn from other's mistakes
  - Microsoft:
    - ◆ Windows
    - ◆ Internet Explorer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

- ▶ 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



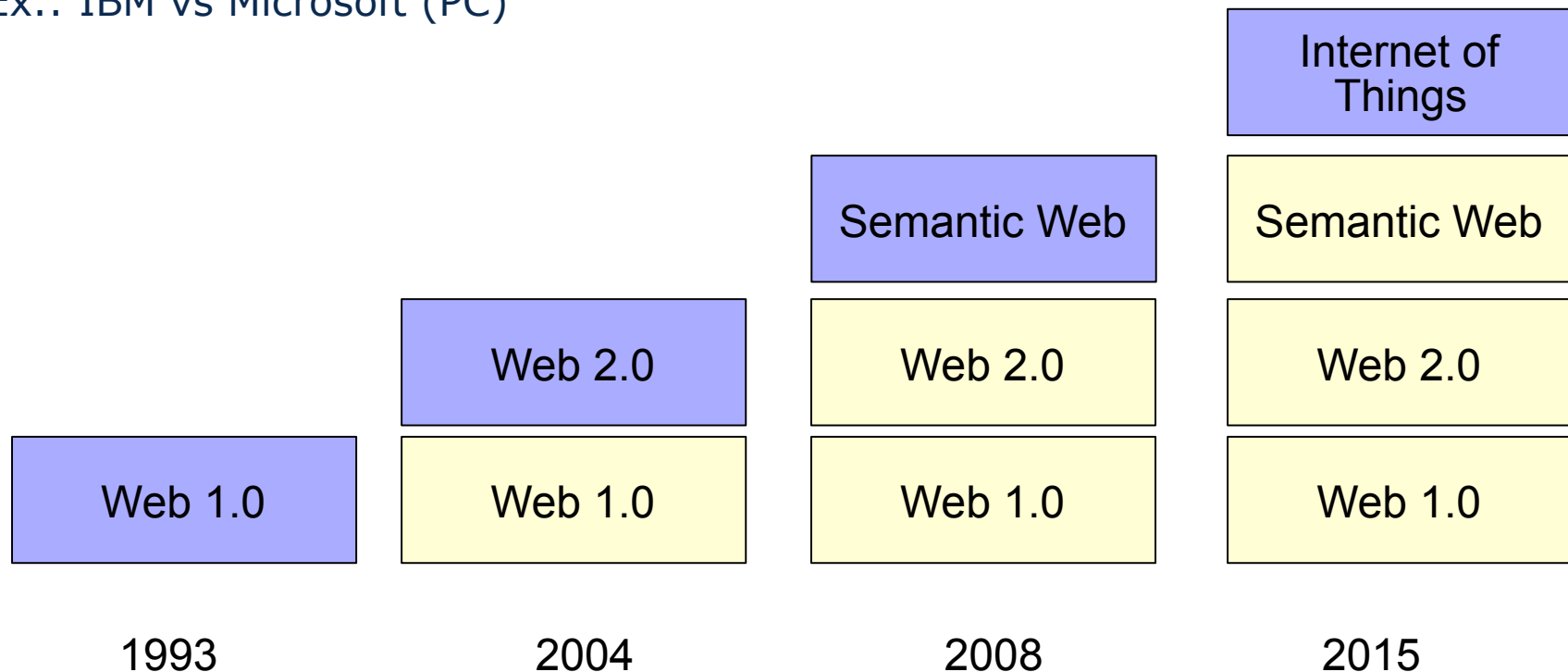
- ▶ **RFIDs**
  - RFID can store a product memory
  - Identification: RFIDs will replace price tags (Streifencode)
  - RFIDs enable global traceability of goods and all their parts (excellence in logistics)
- ▶ **Expert portals**
  - Searching knowledge is an expensive business
  - Google is a start
  - 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

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



Softwaresysteme sind die **Innovationstreiber** in fast allen Wirtschaftszweigen. Sie bestimmen maßgeblich die **Wertschöpfung** von Produkten, Fertigungs- und Geschäftsprozessen. [IKT 2020, Abschnitt 4.2.2]

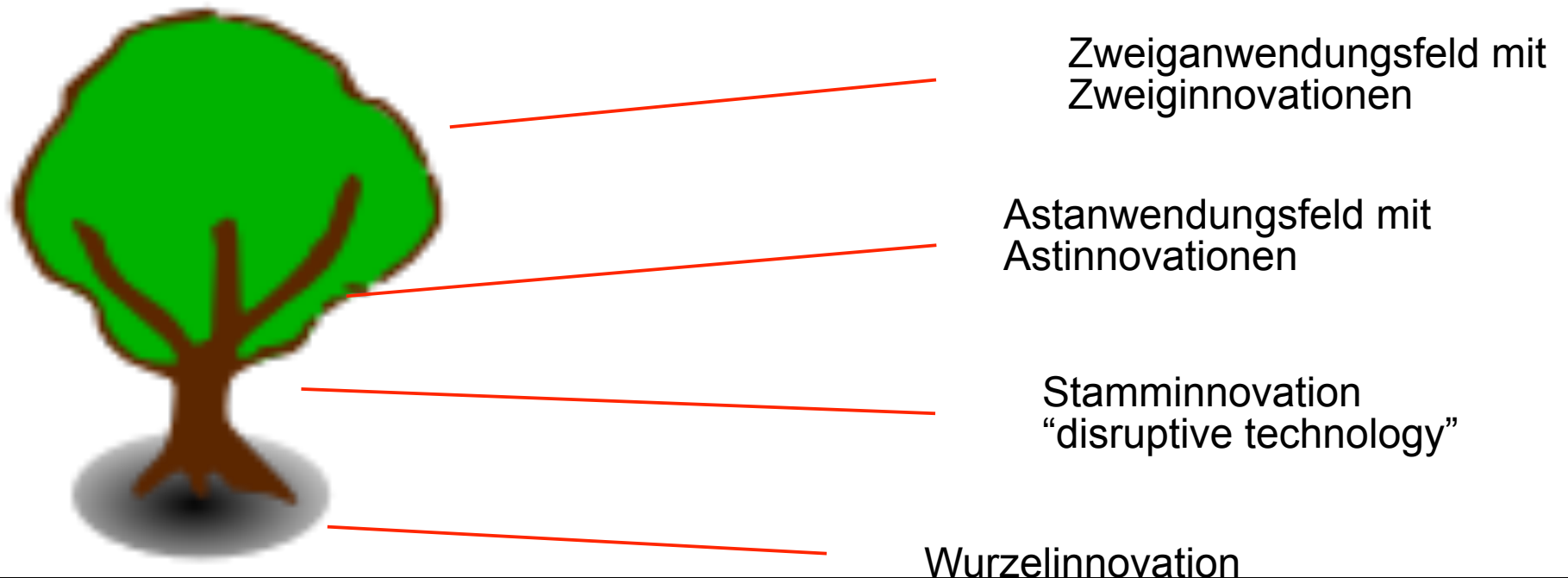
- ▶ **Innovation-Waves** are initiated by new **disruptive technologies**
  - ▶ They lead to exponential growth of markets and exponential diminishing of markets (exponential market change)
  - ▶ Example: Apple vs Nokia (Smartphone, Tablet)
  - ▶ Ex.: IBM vs Microsoft (PC)



Who's going to be the global player for

- Services in Web 2.0? [Google]
- Services in the internet of things (cyber-physical systems)?

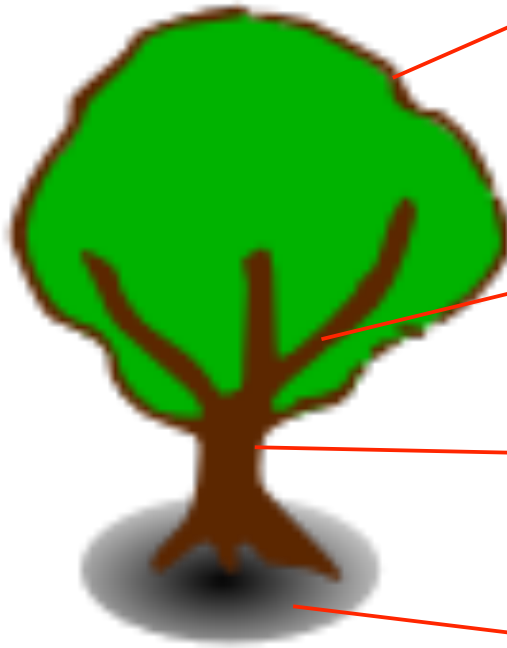
- ▶ Grundlegende und abhängige Anwendungsfelder
  - In den abhängigen Feldern wird der "AddedValue" geschaffen
  - Aber sie existieren nur in Abhängigkeit vom Grundanwendungsfeldern



- Intelligentes Gebäude

Zweiginnovationen:

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

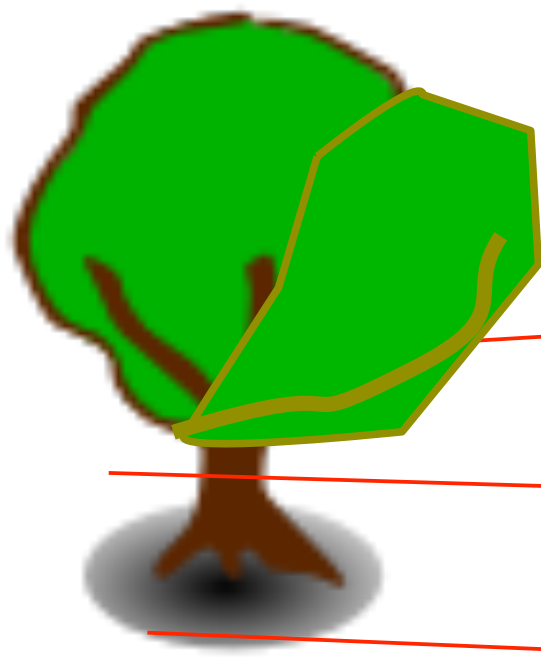
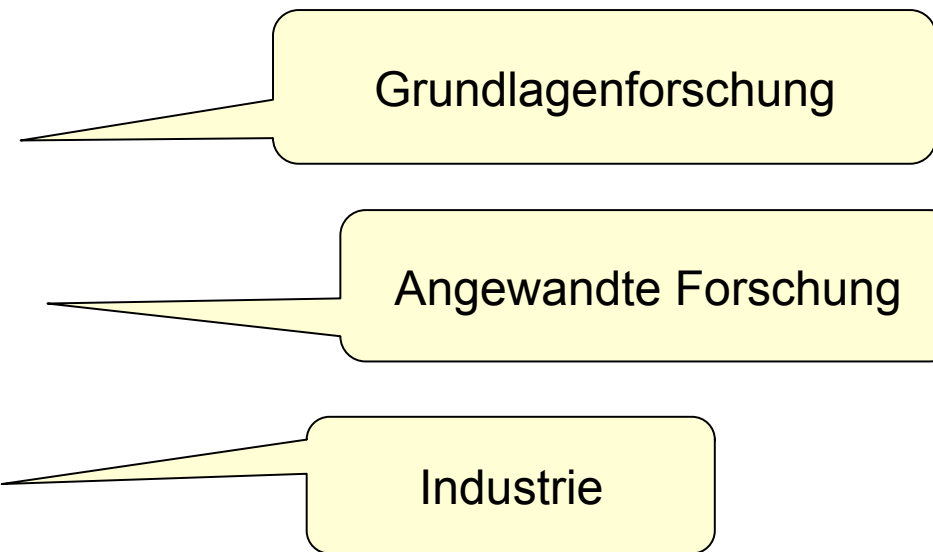


Astinnovation: Automatischer Entwurf für neue, branchenübergreifende Anwendungsfunktionen (2007)

Stamminnovation: Integrierte Datenmodelle für ganze, voll vernetzte Gebäude (2000)

Wurzelinnovation: reaktive Datennetze (1990)

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



Neue Zweiganwendungsfelder

Neue Astanwendungsfelder

Neue Stamminnovation

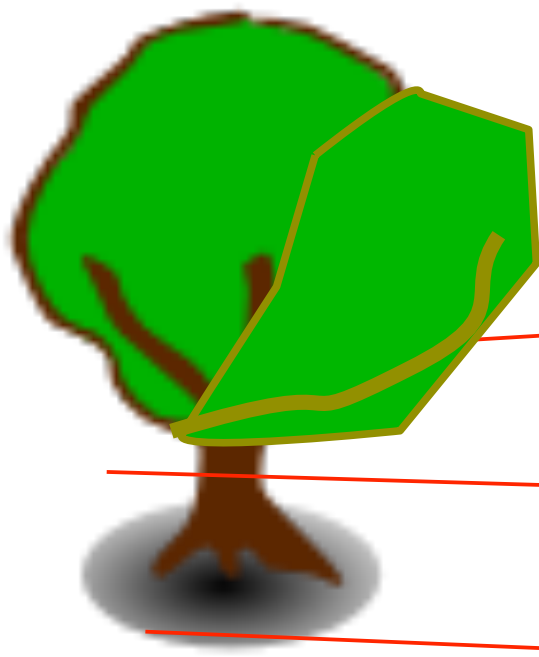
Wurzelinnovation

- Produced since 2007 in Dresden
- No German product so far

Web site [www.plasticlogic.com](http://www.plasticlogic.com)



- Stamminnovation e-Papier von
- [www.plasticlogic.com](http://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



- Vom Jan. 2007, herunterladbar bei [www.bitkom.de](http://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.

## 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

Web 2.0

Services in the Internet of things

### IPTV

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

- *Bündelung* mit lokaler Industrie

enterprise **SOA**

**Utility Computing (SaaS)**

## Multimedia-Systeme, Websysteme

## Geschäfts-Software

- „Gleichzeitig sind die Themenschwerpunkte stärker an den identifizierten Innovations- und Wachstumsfeldern auszurichten.“ [Berger]



# 40.4 SOFTWARE BUSINESS MODELS

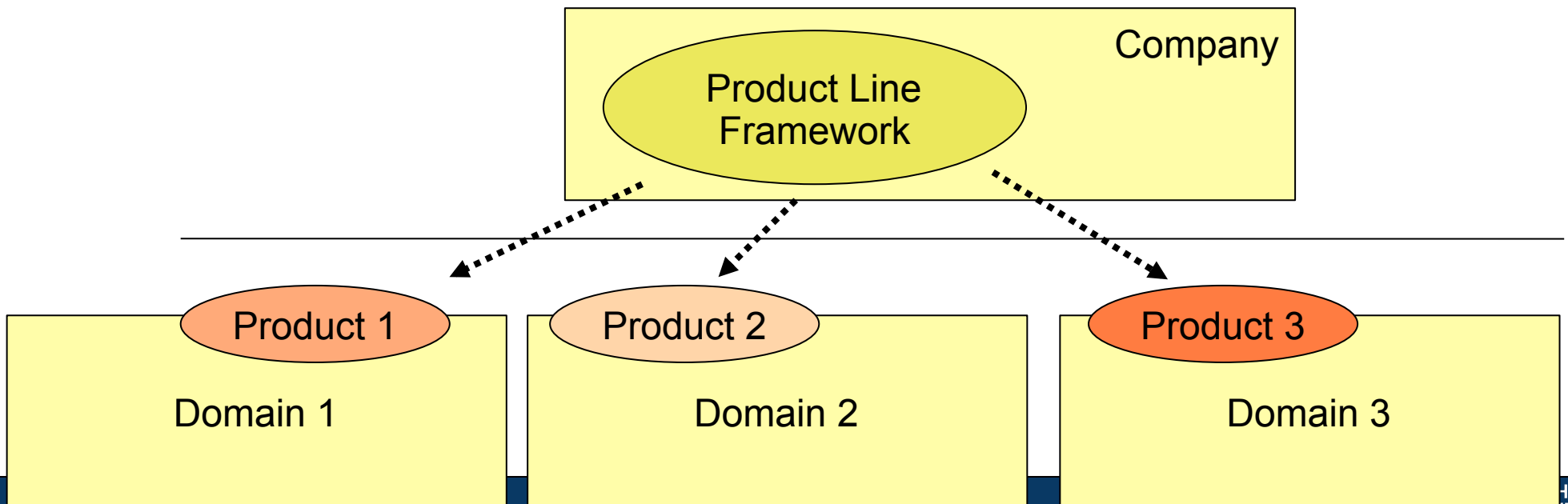
- ▶ It is hard to earn money with software
- ▶ A **business plan** should be made at the beginning, before starting-up or before product introduction
  - Business model
  - Market analysis
  - Cost planning (variant A, B, C)
  - Turnaround planning
- ▶ Business plans are the basis for
  - ▶ Getting a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

- ▶ 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]

- ▶ [http://en.wikipedia.org/wiki/Open\\_source](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://creativecommons.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](http://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

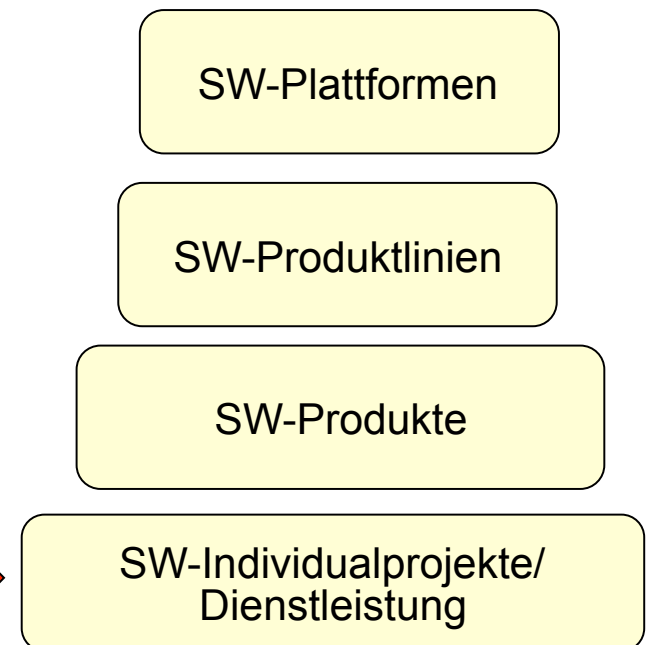
- ▶ Have a framework in-house.
- ▶ Know how: instantiate new products with it, that are sold
  - Keep the product line framework as company secret
- ▶ Examples:
  - SAP, Comarch, many others



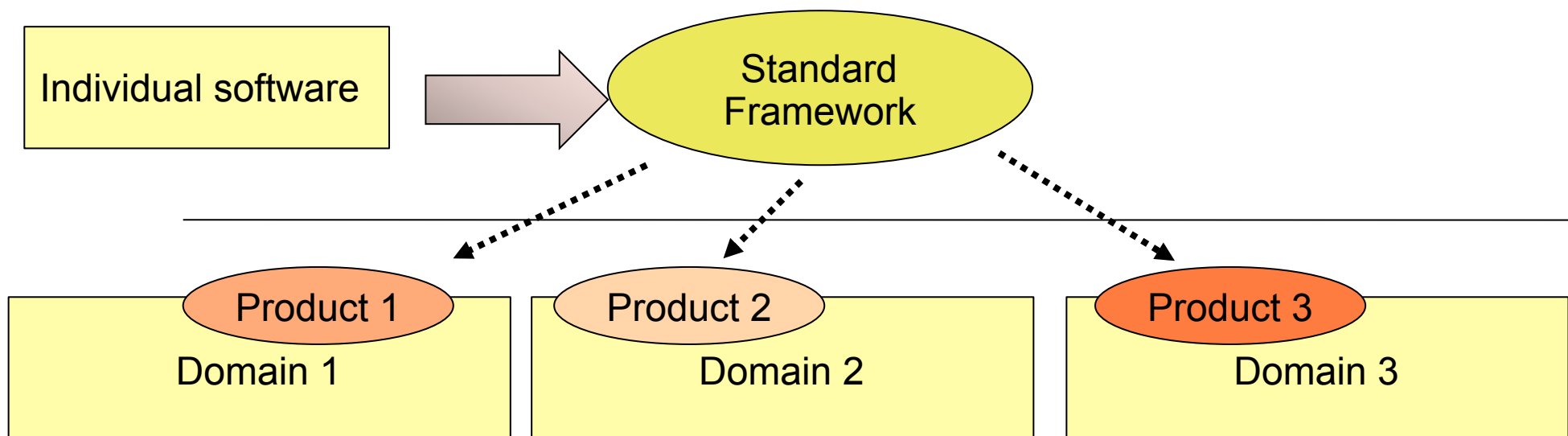


- ▶ Reifegrad gering: i.W. Dienstleistungen
    - keine großen Player außer SAP
    - Viele kleine Firmen (Zersplitterung)
  - ▶ In Sachsen noch weniger; alle Firmenzentralen sitzen im Westen (SD&M, Accenture, Oracle, SAP, Microsoft, Ericsson, Nokia, ..)
    - Einige Mittelständler (SAP-SI, T-Systems MMS, Robotron RDS, ComArch, Saxonia)
  - ▶ Folgen:
    - Begrenzte Innovationskraft von KMU/Dienstleistern
    - keine vorausschauenden Investitionen
- Vorlaufforschung nötig

Reifegrad der SW-Industrie Deutschlands/Sachsens

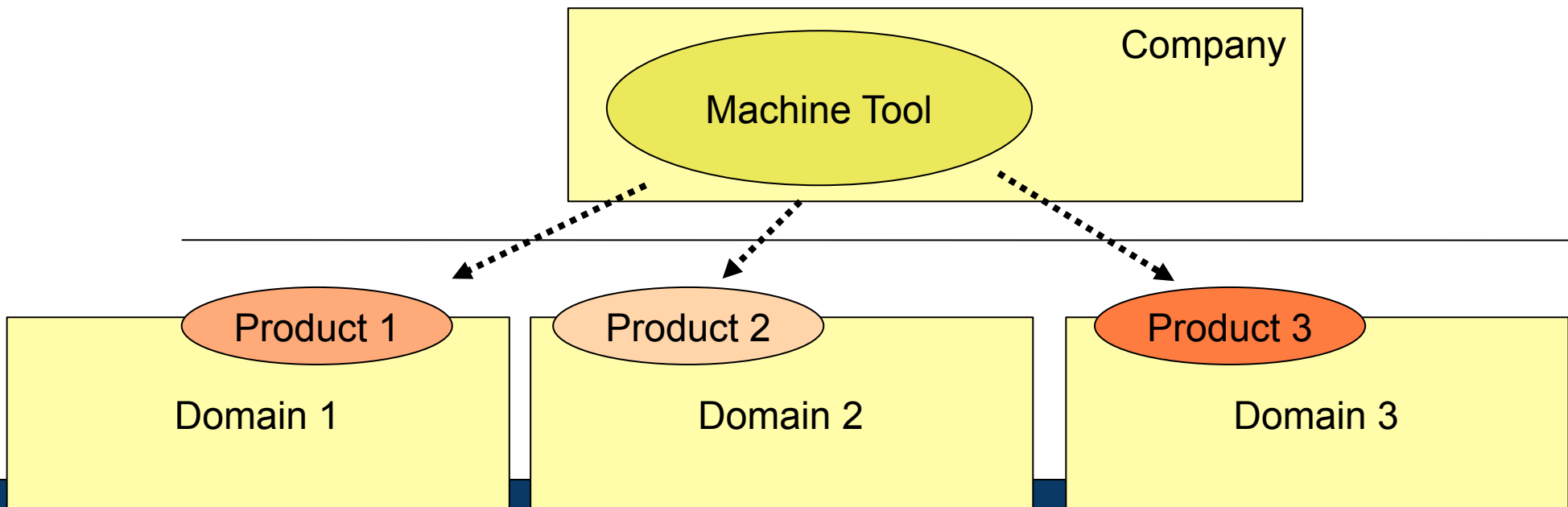


- ▶ The 5 founders of SAP left IBM in 1974 because they planned a standard generic framework which they could instantiate to applications, which IBM didn't foresee
- ▶ The idea is that markets *mature over time* and move from individual software (expensive) to standard software (cheaper)
- ▶ New SAP frameworks (R/1, R/2, R/3, Netweaver, etc) appeared about every 10<sup>th</sup> year and doubled the turnaround of SAP every 5 years

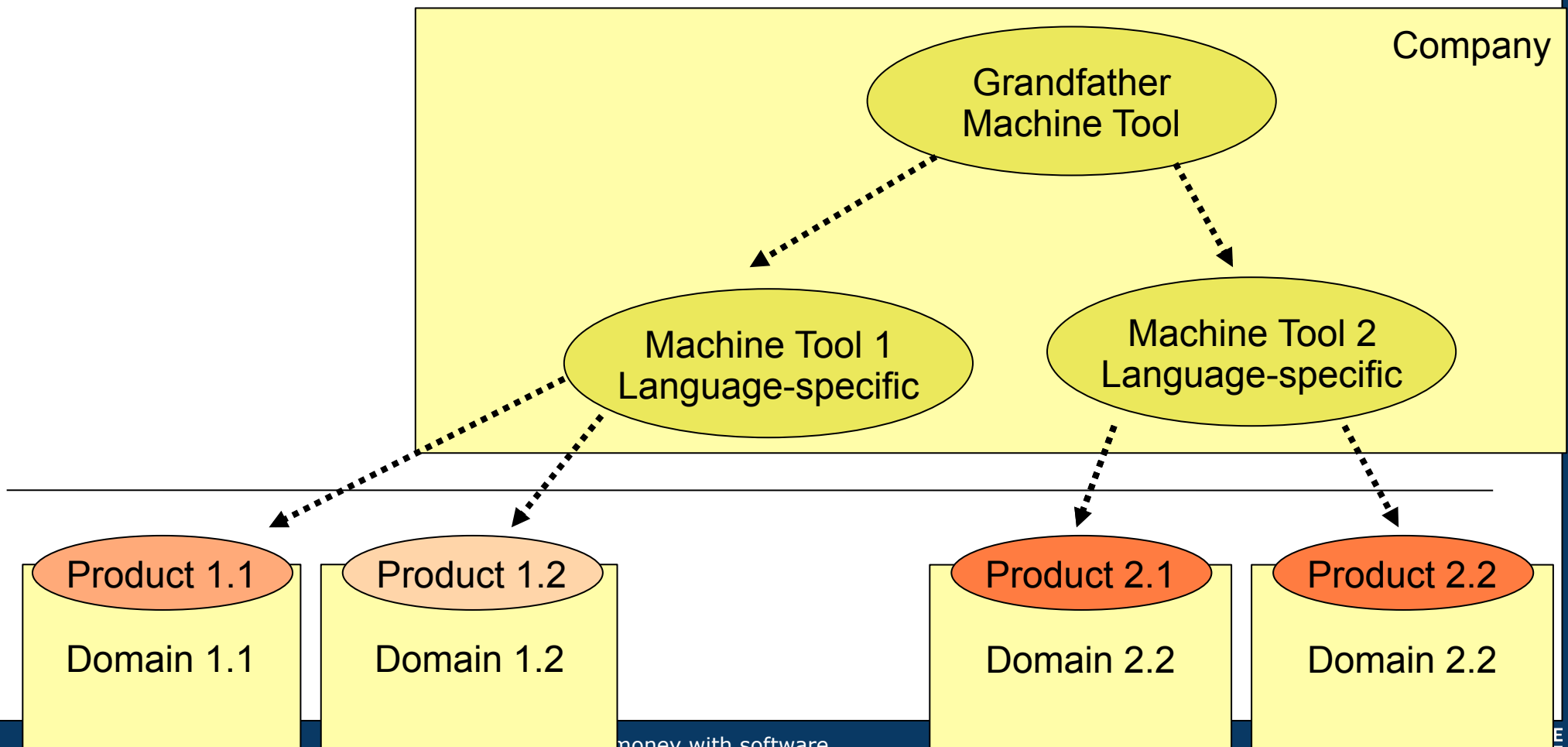


# “Software Machine Tool (SW-Werkzeugmaschinen)”

- ▶ 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](http://www.absint.com))
  - Semantic search engines for different domains ([www.transinsight.com](http://www.transinsight.com), [www.gopubmed.com](http://www.gopubmed.com))

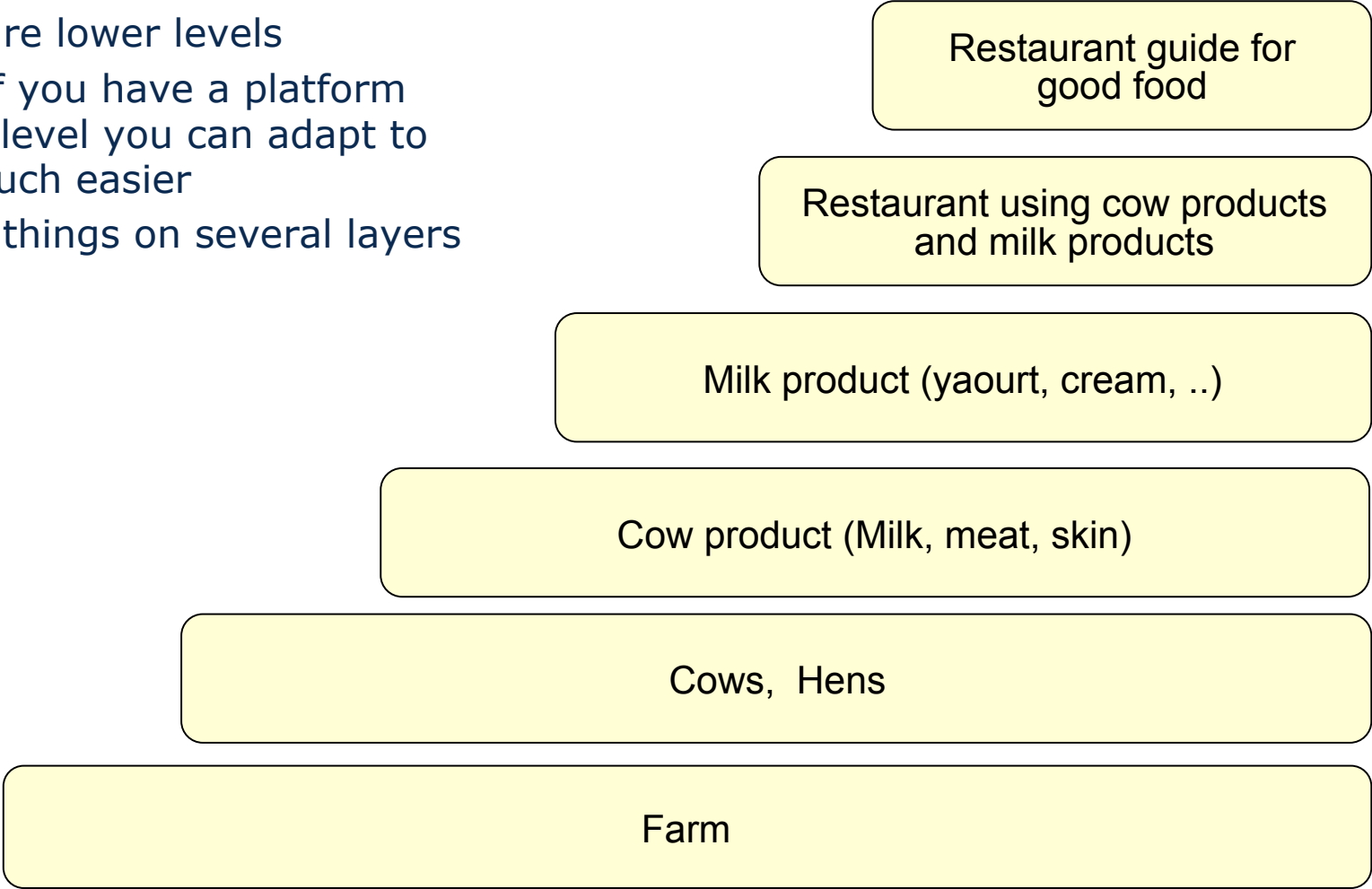


- ▶ Language-Universal Tool generates
  - Language-1-specific tool generator
  - Language-n-specific tool generator
- ▶ Those machine tools continue to bear grandchildren products

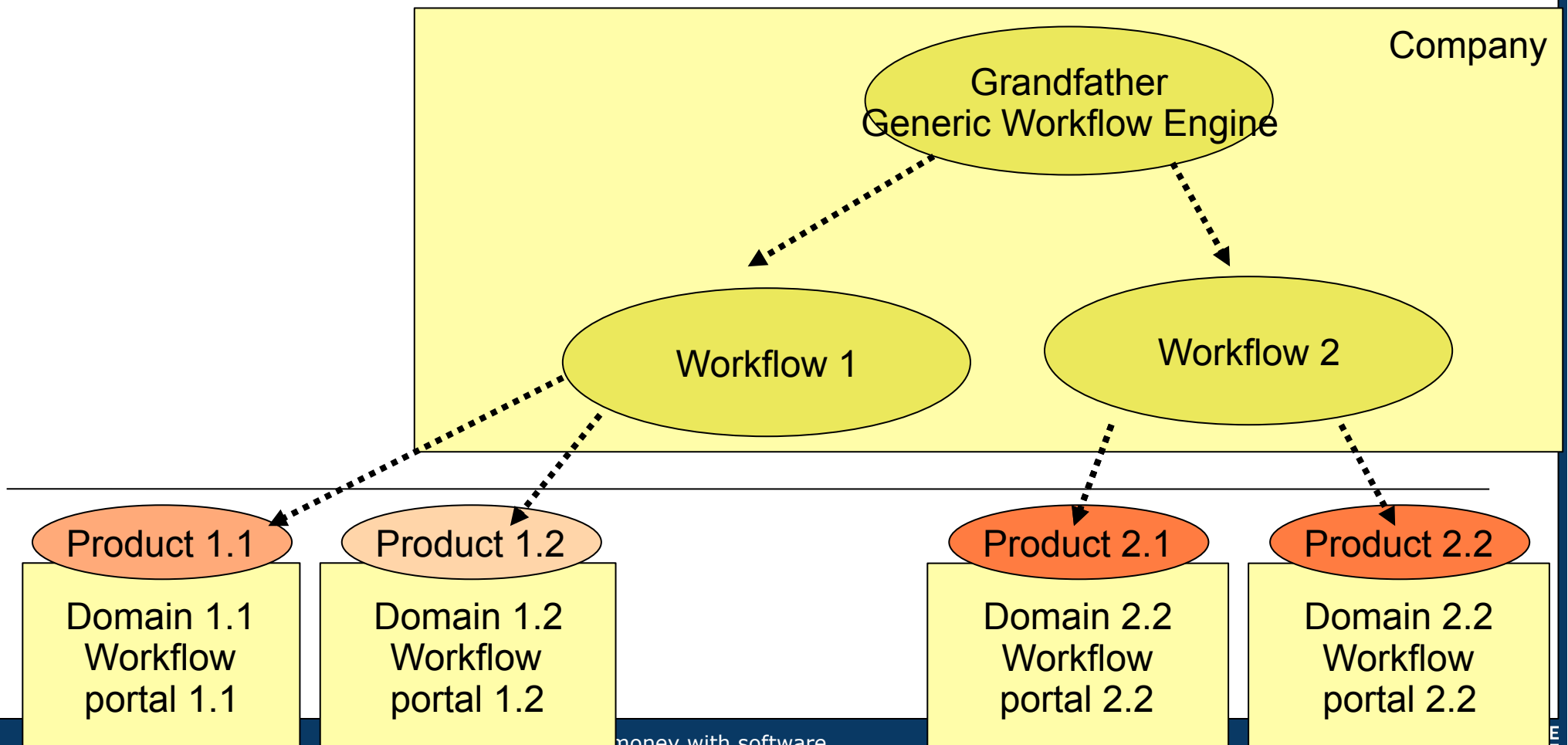


➤ With machine tools and product lines, you get an ecosystem of products and services.

- 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

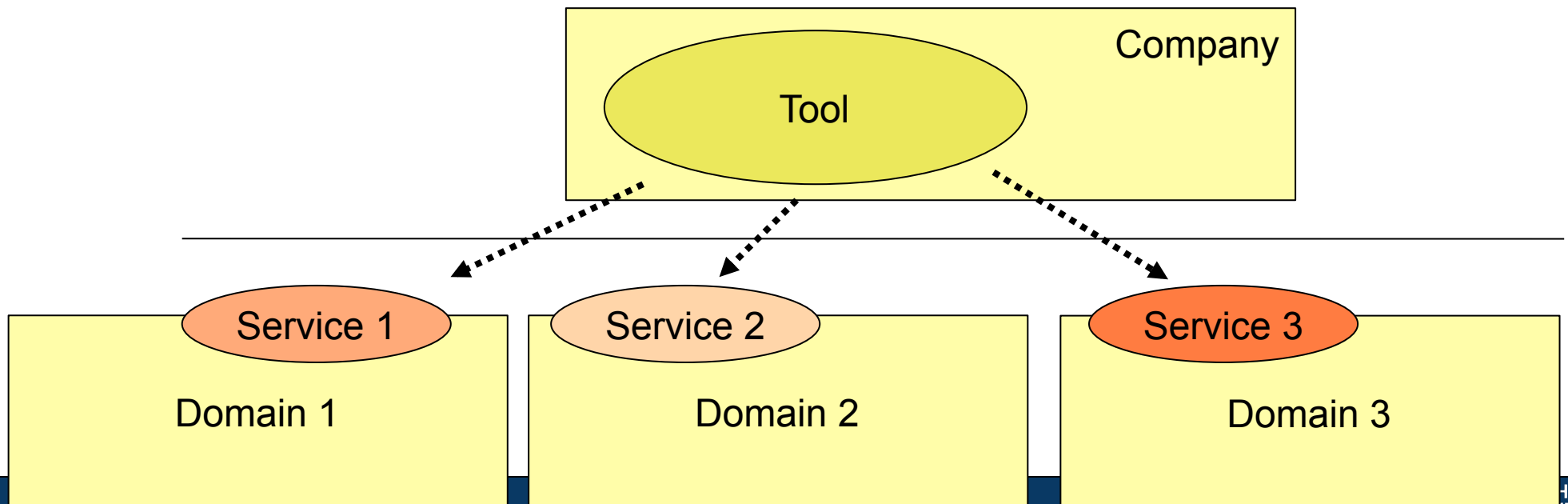


- ▶ Workflow-Universal Tool generates
  - Workflow-1..n
- ▶ Those workflows continue to bear grandchildren workflow portals (form-filling portals)



# "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





- ▶ A **software platform** is [Popp]



- ▶ 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

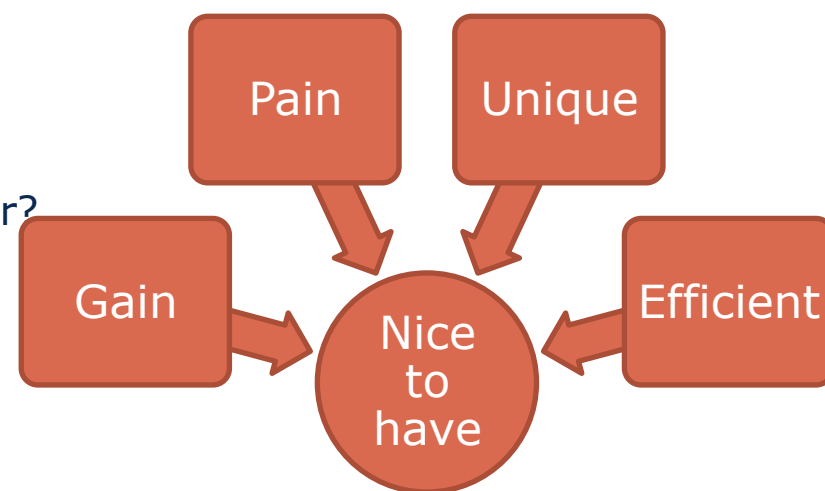


# 40.4 SALES MEETINGS

- ▶ 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
  - Commitment

[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!



- ▶ 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?"

- 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

- 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?

- 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 effectivity 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



- 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