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Software Product Management

Introduction

September 21, 2010

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Objectives and Agenda

Learning Objectives

- Understand Motivation, Scope and Objectives of Software Product Management
- Understand Key Concepts, Terms, and Practices
- Understand Product Vision

Agenda

- Course Overview
- Software Product Management
- Reference Models
- Product Vision



Product Management

- Procter & Gamble (1931): languishing soap was strengthened by assigning an individual manager.
- Product Management (Gorchels)
 - Person charged with the success of a product or a product family
 - No direct authority over production or sales
 - Operation of a „business within a business“



The Product Manager

- The Product Manager is the one person officially responsible for a product — its delivery and its continuity.
- This person is both the champion of the product stakeholders and the representative of the product developers.
- It is the product manager who keeps the vision of the product alive and who unites the interests of the users with those of the owners in pursuing a common goal.



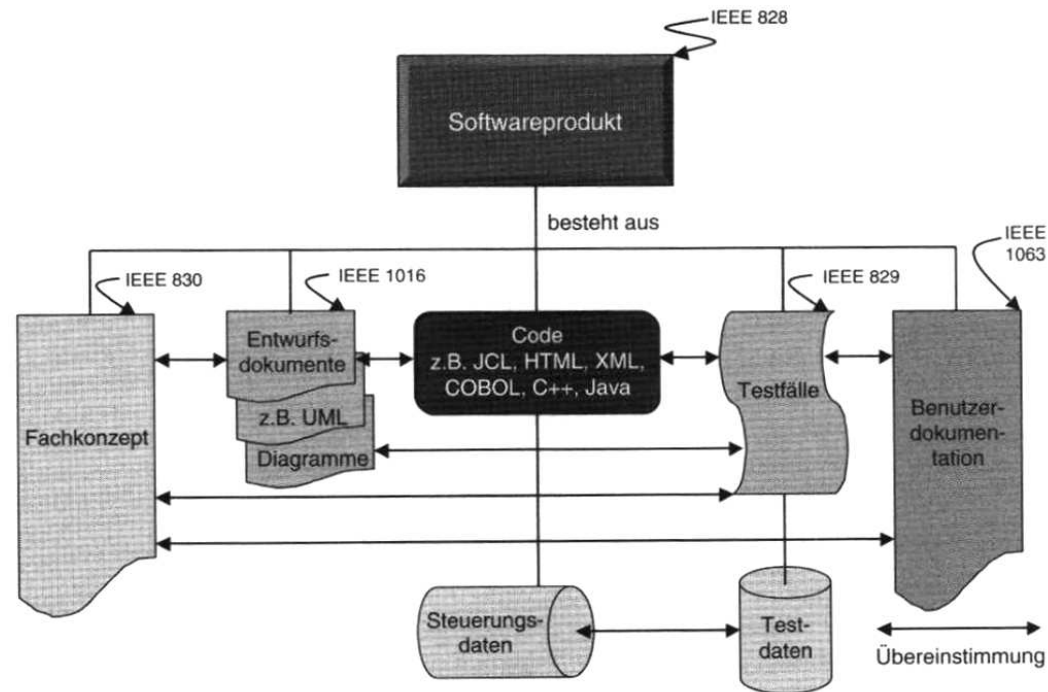
Job Description

- Reports to: Director Product Management
- Key Responsibilities:
 - Represents the product within and outside the company
 - Ensures sustainable economic product success
 - Develops product strategy
 - Negotiates long-term plans and coordinates with other departments
 - Monitors goal achievement
 - Performs product requirements engineering
- Qualifications:
 - MSc in Informatics or Marketing
 - At least seven years of domain experience
 - Broad knowledge of the market
 - Excellent communicator and negotiator



Software Product

- The complete set of computer programs, procedures, and possibly associated documentation and data designated for delivery to a user.



What is Special about *Software* Products?



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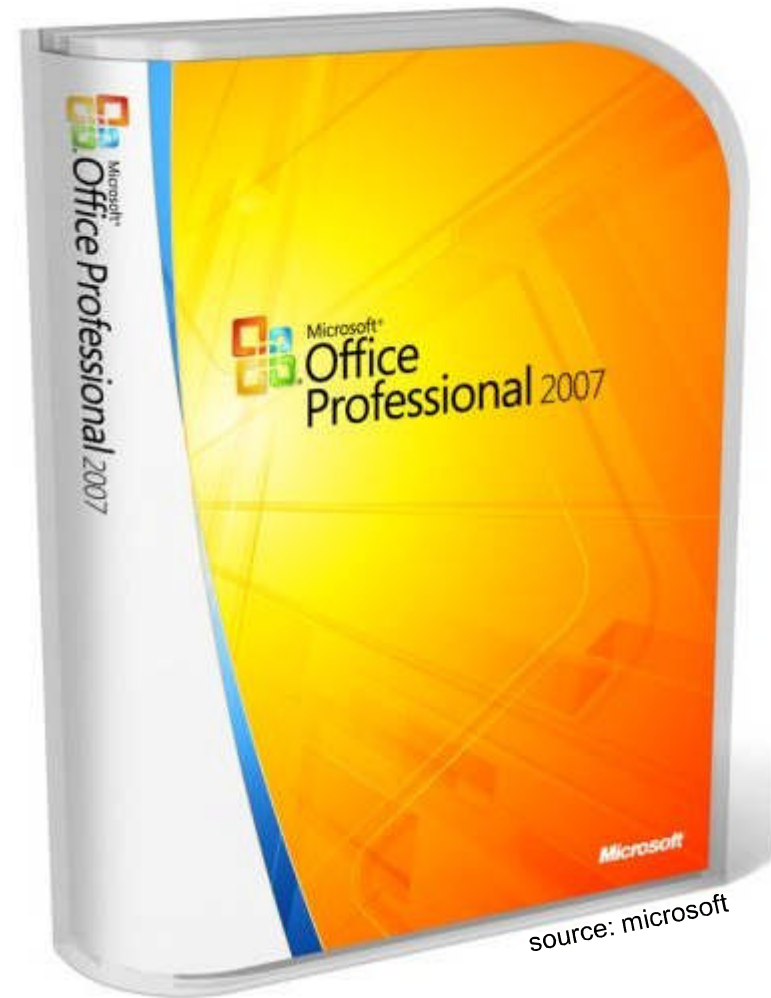


- Software products differ from non-software products in the following concerns.
- Neglectable Lifecycle Cost:
 - Manufacturing and distributing extra copies do not require extra costs for the company.
- Great Flexibility:
 - Software products can be changed or updated relatively easily with patches and updates.
- High Rate of Change:
 - Release frequency is high, since the product can be altered easily.



Software Products

- Product = combination of goods and services which a **party (the supplier)** combines in support of its **commercial interests** to transfer **defined rights** to a second **party (the customer)**.
 - Party: person, corporate unit, company
 - Rights: use, property, resale
 - Interests: not necessarily payment
 - important is the offering, not the buying process
- Software product = product whose primary component is software.



Embedded Software

- Embedded Software = software that is not sold stand-alone, but is integrated into a non-software product.
- Hardware and customization affect production and deployment process
 - Degree of software vs. hardware
 - Generic vs. customized

	<i>Pure Hardware</i>	<i>Embedded Systems (HW+SW)</i>	<i>Pure Software</i>
<i>Generic</i>	Note sticks	Mobile phone	Firewall
<i>Customized</i>	Office furniture	Customized car	Enterprise resource planning systems
<i>Customer-Specific</i>	Portrait painting	Military vehicle	Web Site



source: apple

Software as a Service (SaaS)



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- SaaS = business and delivery model that allows customers to use software over the internet without having to install it on their own computers.
 - Contractual terms correspond to Service Level Agreement (SLA) – no significant upfront investment.
 - Scalability without significant customer investment
 - Automated upgrades to latest version
 - Customer data stored on server
 - Availability depends on Internet



Welcome to Gmail

A Google approach to email.

Gmail is built on the idea that email can be more intuitive, efficient, and useful. And maybe even fun. After all, Gmail has:



Less spam

Keep unwanted messages out of your inbox with Google's innovative technology.



Mobile access

Read Gmail on your mobile phone by pointing your phone's web browser to <http://gmail.com>. [Learn more](#)



Lots of space

Over 7489.325717 megabytes (and counting) of free storage.

Sign in with your
Google Account

Username:

ex: pat@example.com

Password:

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Fri Aug 20 2010

If you've been wanting to use voice and video chat on Linux (our top video chat request), then we ...

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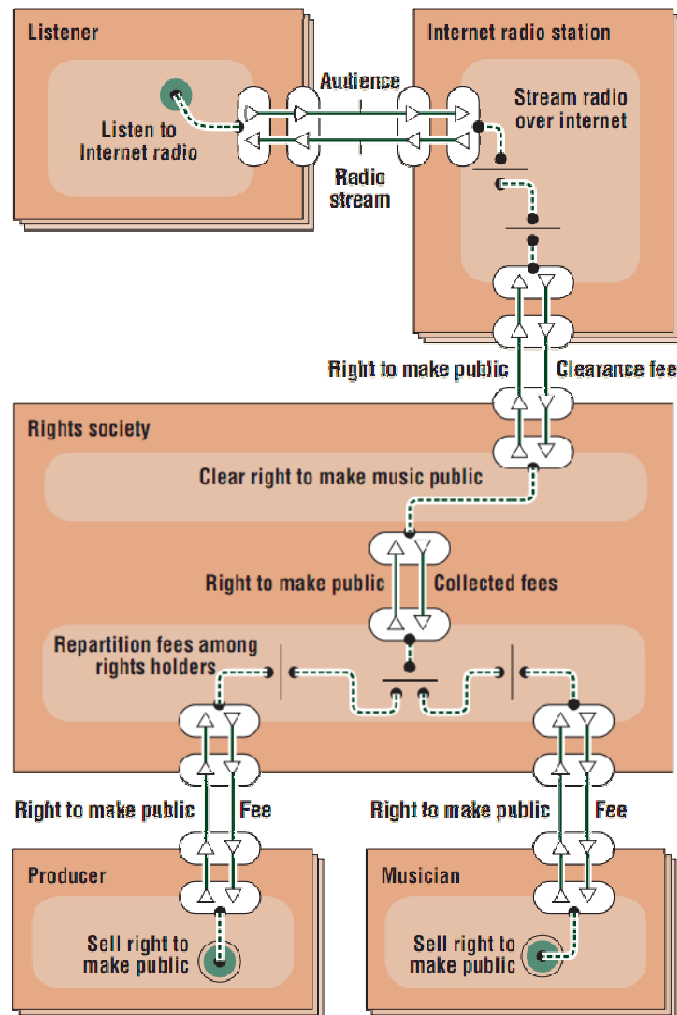
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Business View: SPM = Product Strategy



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Legend:



Value interface



Customer need



Value exchange



Value ports



Dependency boundary



OR



AND

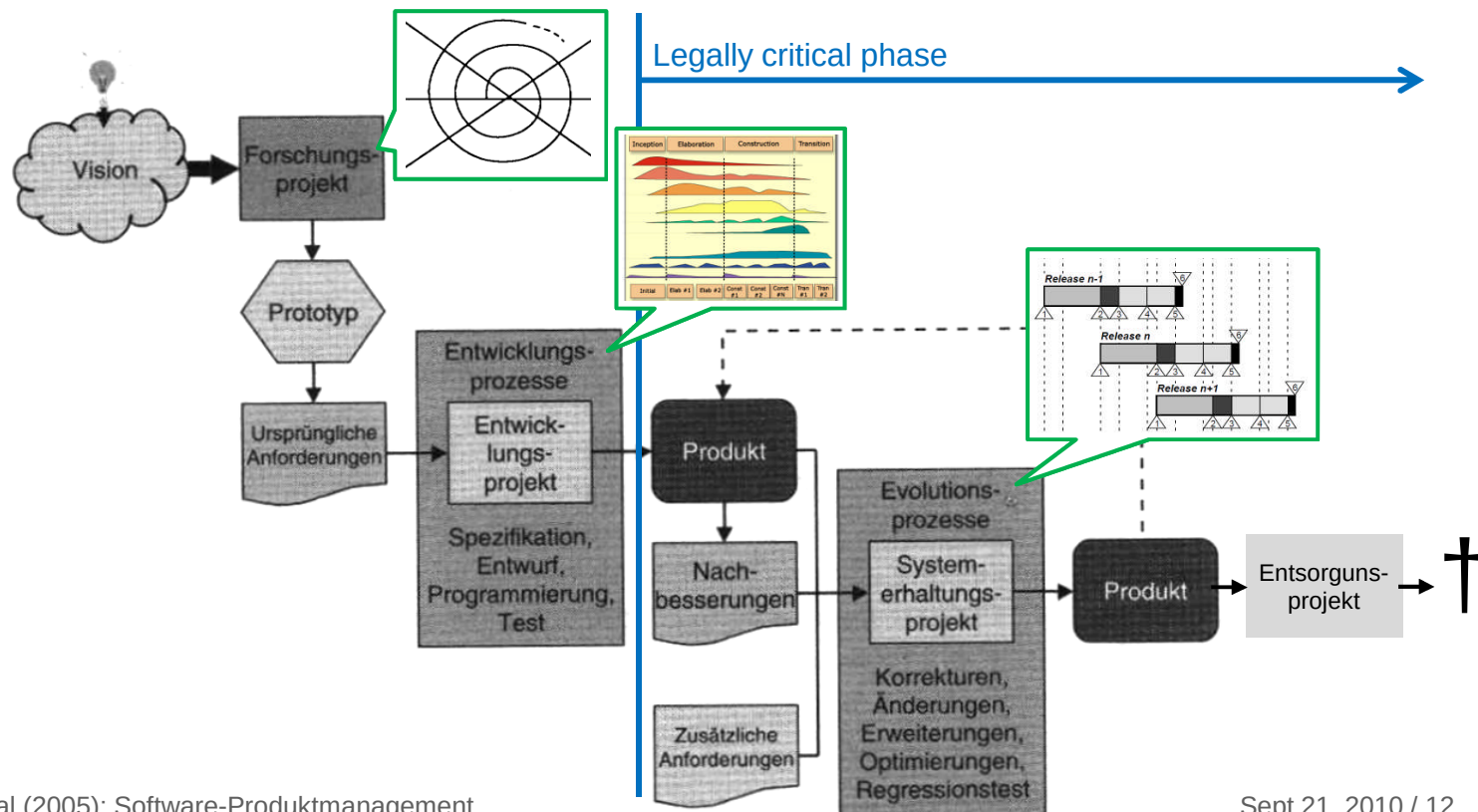
Connection element



Technical View: SPM = Lifecycle Management



- Software Engineering in the Large
 - Prototype, Product, Project, Process



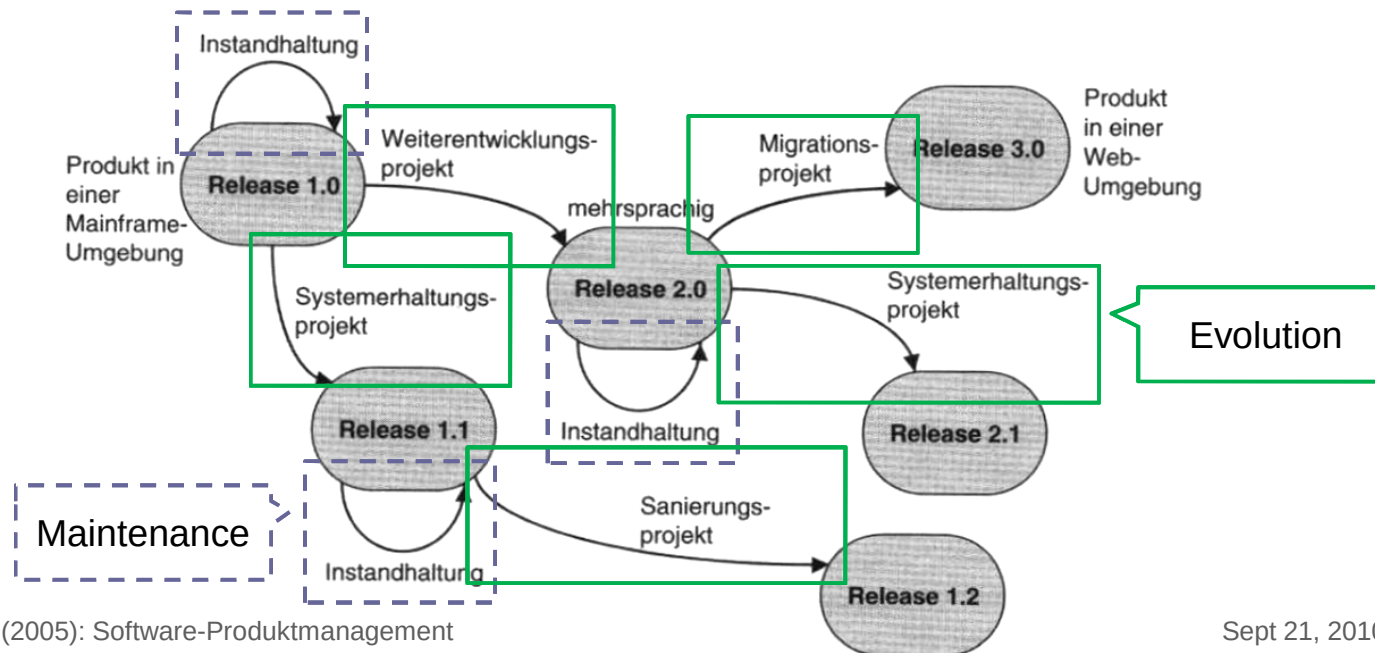
Technical View: SPM = Software Evolution



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- Project of Projects
 - Starts with birth, ends with death of product
 - Define development goals to evolve product
 - Control goal achievement



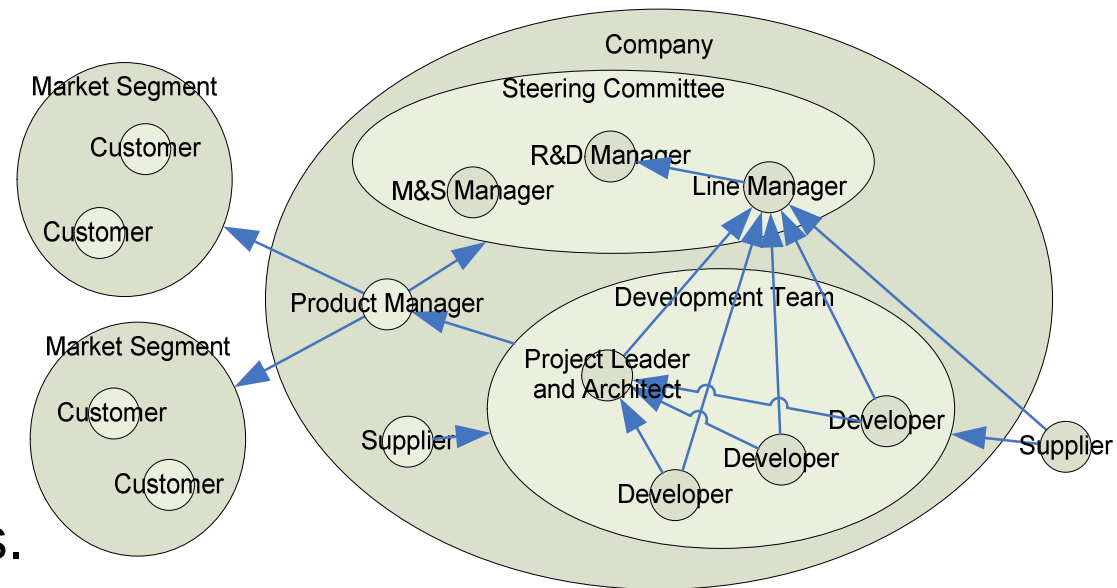
Technical View: SPM = Collaboration



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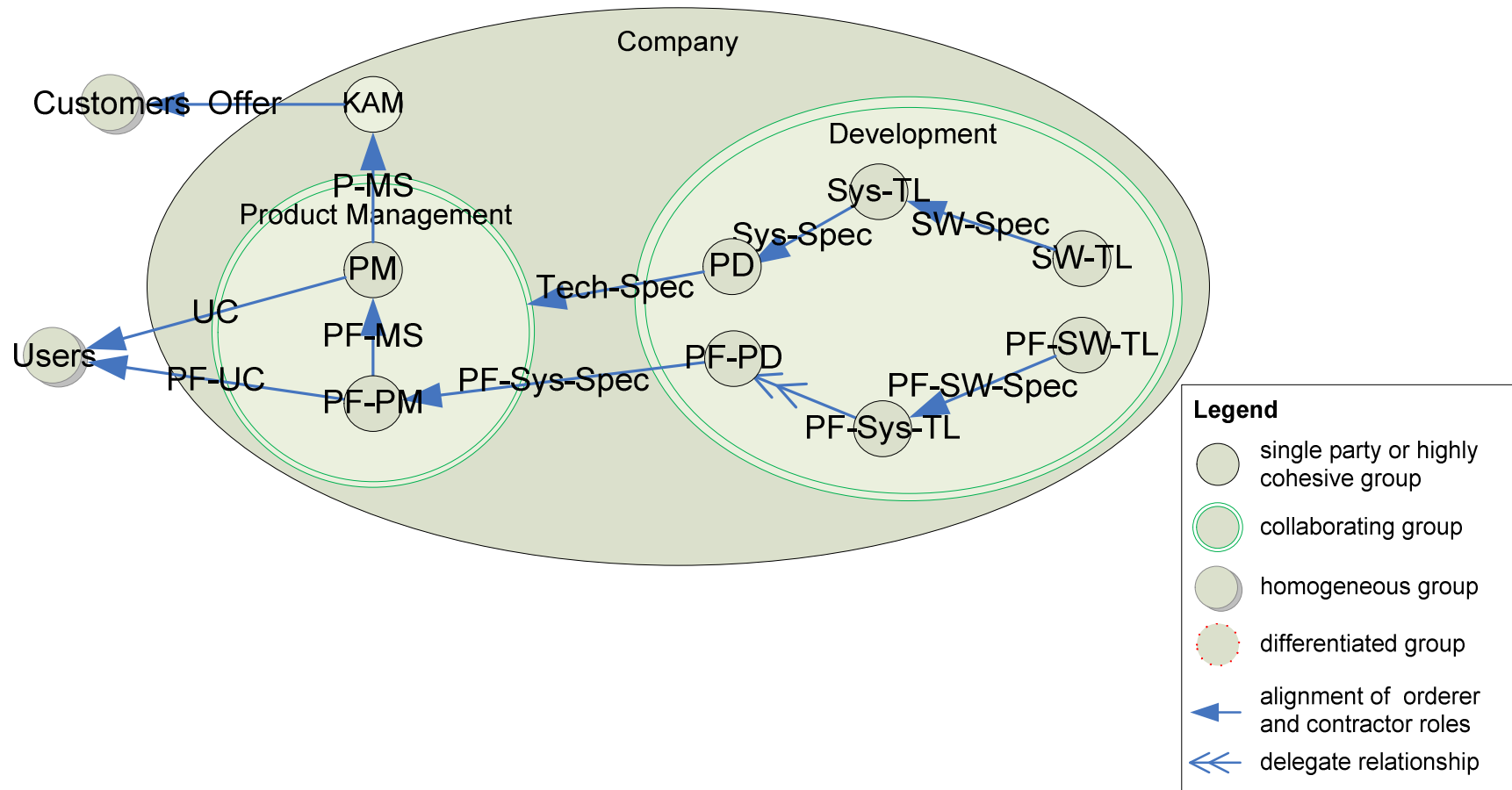
- Marketing, Sales, and Coordination
 - Manage configurations: ensure consistency, completeness, and quality of given product versions.
 - Network: know the stakeholders and be their friend.
 - Sell: convince stakeholders of product value.
 - Adjust: resolve problems and adapt product to evolving context and needs.



Structure of Collaboration at Nokia



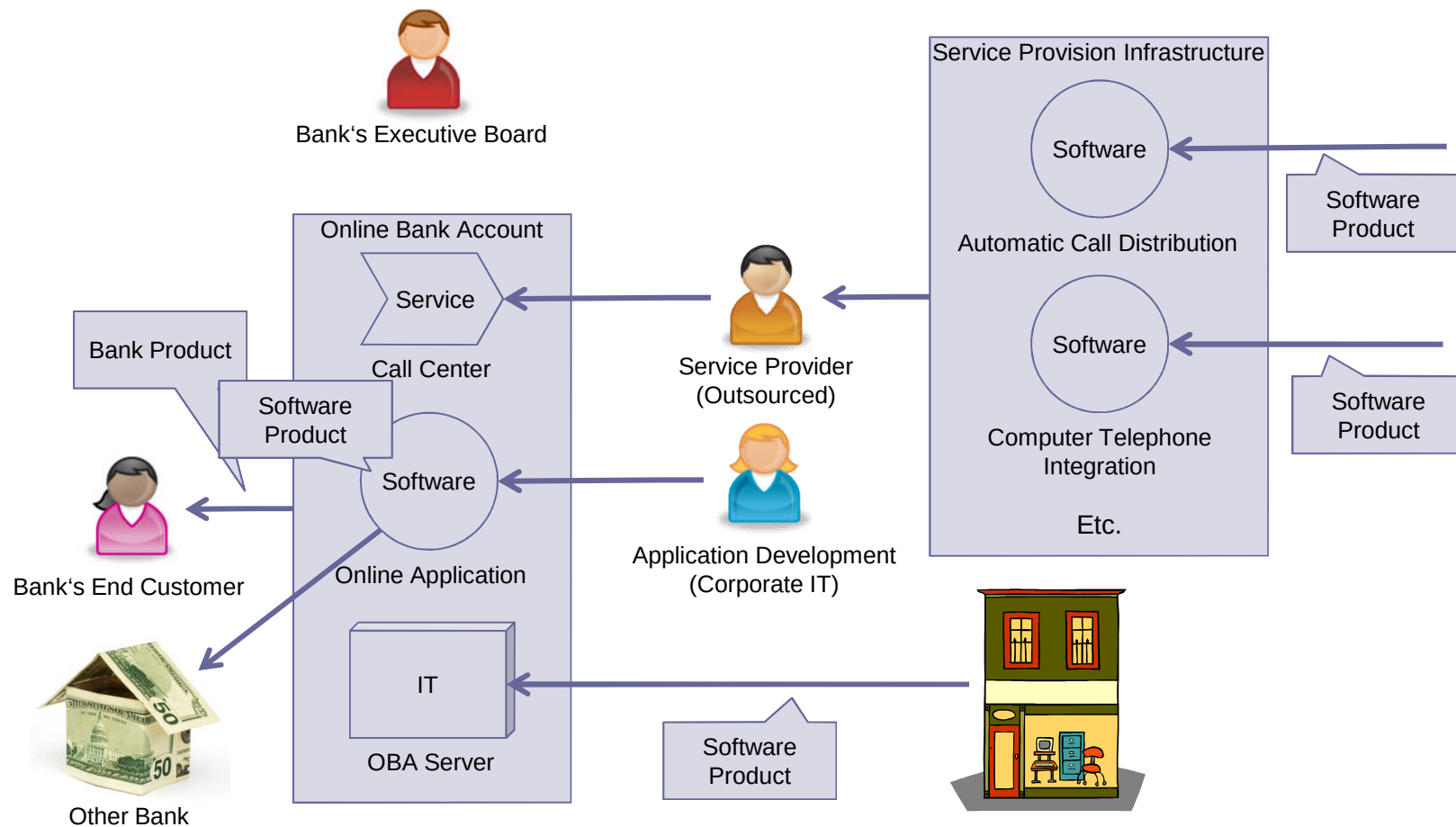
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SPM in the Software Supply Chain



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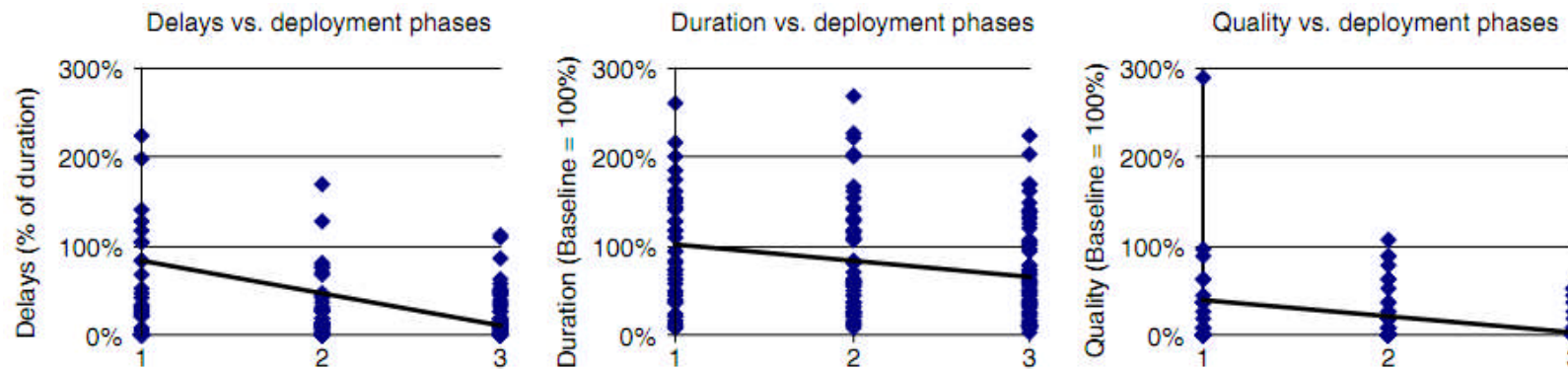
Successful Product Managers

- Successful PM behavior
 - Behave like an embedded CEO
 - Drive your strategy from market and customer value
 - Be enthusiastic about your product
 - Have a profound understanding of your markets, customers, and portfolio
 - Measure your contribution on sales (top-line) and profits (bottom-line)
 - Periodically check assumptions such as business cases
 - Take risks and manage them
 - Foster teamwork based on lean processes
 - Insist on discipline and keeping commitments
 - Be professional in communication, appearance, and behavior

Impacts of Software Product Management



- Effects of systematized software product management in Alcatel



- Delays: real vs. planned delivery
- Duration: project duration
- Quality: % of defects found after product hand-over to customer

SPM Deployment:

1. Agree on roles and responsibilities
2. Prepare and pilot
3. Institutionalize

Develop and Launch Your Own Product



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- venturelab.ch: education for successful start-ups

VENTURELAB – FROM THE IDEA TO THE START-UP NATIONAL TEAM				
FOR STUDENTS		FOR CUTTING-EDGE START-UPS		
venture ideas Feel the start-up groove. Motivation event: 1/2 day	venture challenge Develop business ideas. Semester course: 14 modules	venture plan Convince banks and investors. Strategy workshop: 5 days	venture training Conquer international markets. Intensive training: 5 days	venture leaders Start-up national team. Business development in Boston (US): 10 days

- ctistartup.ch: start-up evaluation and coaching



Develop and Launch Your Own Product



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- venturekick.ch: financing your growing idea

Startkapital – à fonds perdu



CHF 130'000

to kick-off your startup

Drei Chancen für ihre Vision

CHF	10'000	für eine brillante Geschäftsidee
CHF	20'000	für ein ausge- reiftes Projekt
CHF	100'000	für Ihr Startup

www.venturekick.ch





Books

- Overview
 - Kittlaus, Clough (2009): Software Product Management and Pricing. Springer.
 - Gorchels (2006): The Product Manager's Handbook. McGraw-Hill.
 - Herzwurm, Pietsch (2009): Management von IT-Produkten. dpunkt.verlag.
- Practitioner
 - Lawley (2007): Expert Product Management. Happy About.
- Strategy
 - McGrath (2000): Product Strategy for High Technology Companies. McGraw-Hill.
- Requirements
 - Ebert (2008): Systematisches Requirements Engineering und Management. dpunkt.verlag.
- Collaboration
 - Thompson (2008): The Mind and Heart of the Negotiator. Prentice-Hall.

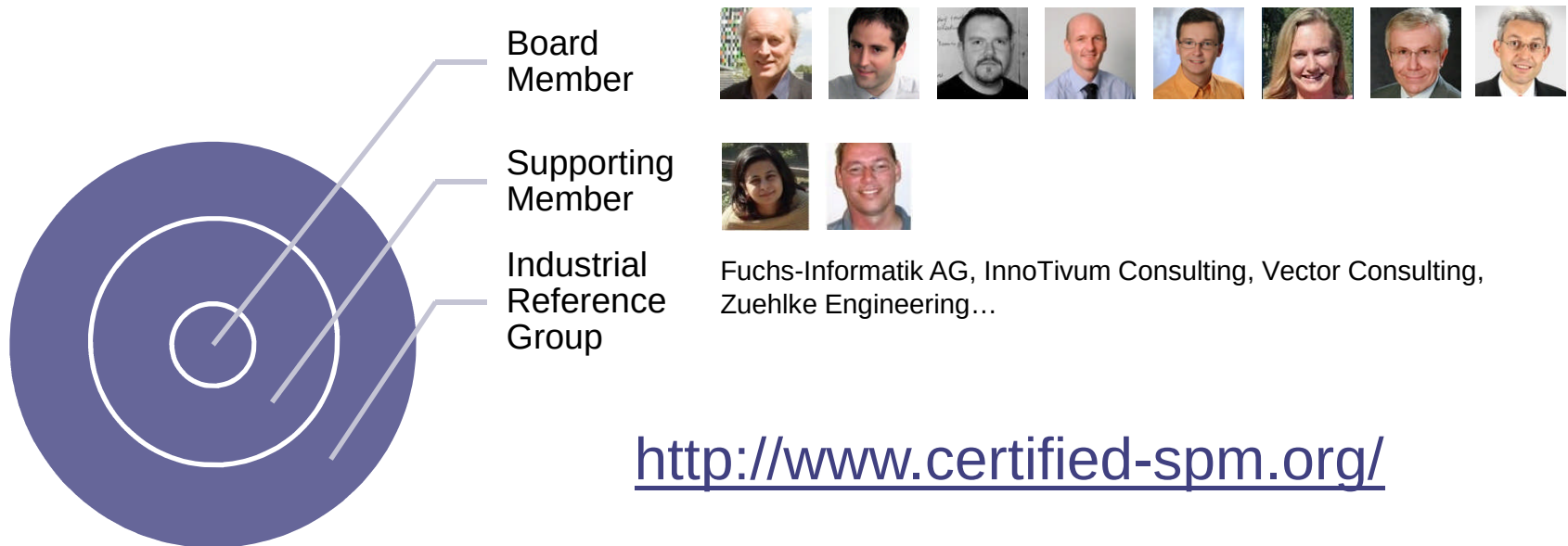
International Software Product Management Board



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- Open group of universities and companies with strong interest in Software Product Management.
- Objectives: Establish international standards for increasing maturity and support of software product management as an individual field.



<http://www.certified-spm.org/>

International Conference on Software Business



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June 21-23 2010, Jyväskylä, Finland info@icsob.org



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THE FIRST INTERNATIONAL CONFERENCE ON SOFTWARE BUSINESS

The inaugural International Conference on Software Business will be held on June 21.-23. 2010 at the [University of Jyväskylä](http://www.jyu.fi), Finland. The ICSOB 2010 conference brings together researchers interested in the software industry, with a specific focus on the business of software.



[Important remarks from the program chairs](#)

<http://icsob.it.jyu.fi/>

International Workshop on Software Product Management



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IWSPM 2010

4th International Workshop on Software Product Management

Program

Posted on August 1st, 2010 by samuelfricker

SESSION: Introduction

09.00 - 09.15

Welcome and Introduction
(Aybüke Aurum, University of New South Wales, and Samuel Fricker, University of Zurich and Fuchs-Informatik AG)

09.15 - 10.00



Keynote: Cloud-based Global Product Development
(Tim Buntel and Audra Eng, Atlassian)

10.05 - 10.30

P1: Introduction of Product Management in a Banking & Retail IT Solutions Company - An Experience Report
(Alexander Maedche and Achim Botzenhardt, University of Mannheim, and Christian Schloegel, Wincor Nixdorf)

BREAK

SESSION: Performance Improvement

11.00 - 11.25

P2: The Situational Assessment Method Put to the Test: Improvements Based on Case Studies
(Willem Bekkers and Marco Spruit, Utrecht University)

11.25 - 11.50

P3: Model-Driven Assessment in Software Product Management
(Kevin Vlaanderen, Inge van de Weerd and Sjaak Brinkkemper, Utrecht University)

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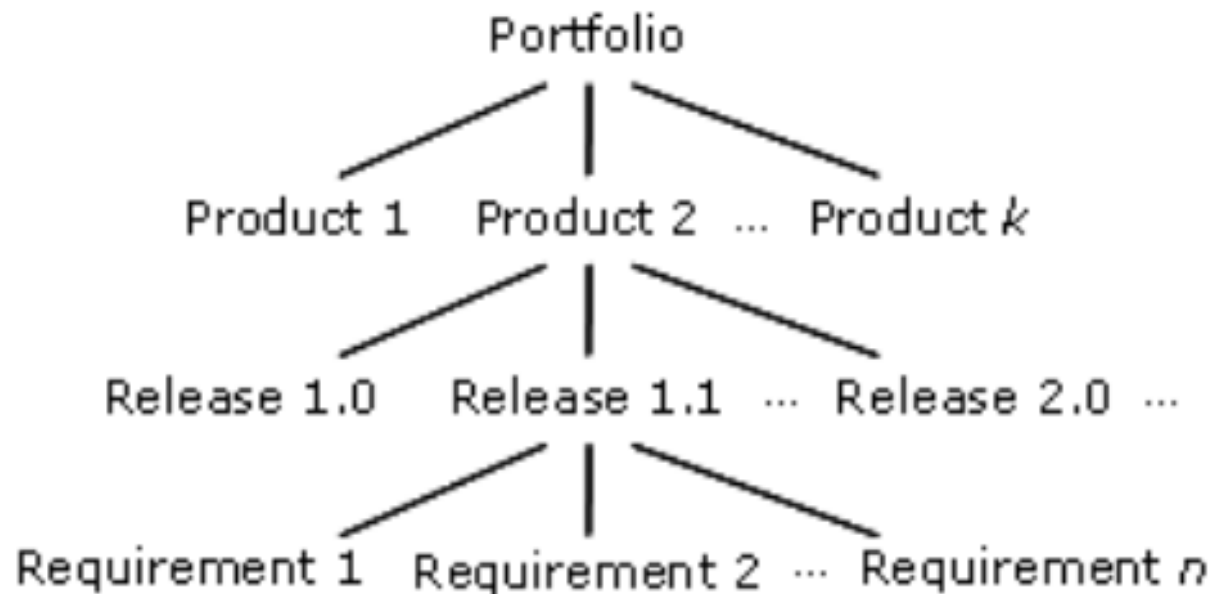
A Product Manager's View on a Software Product



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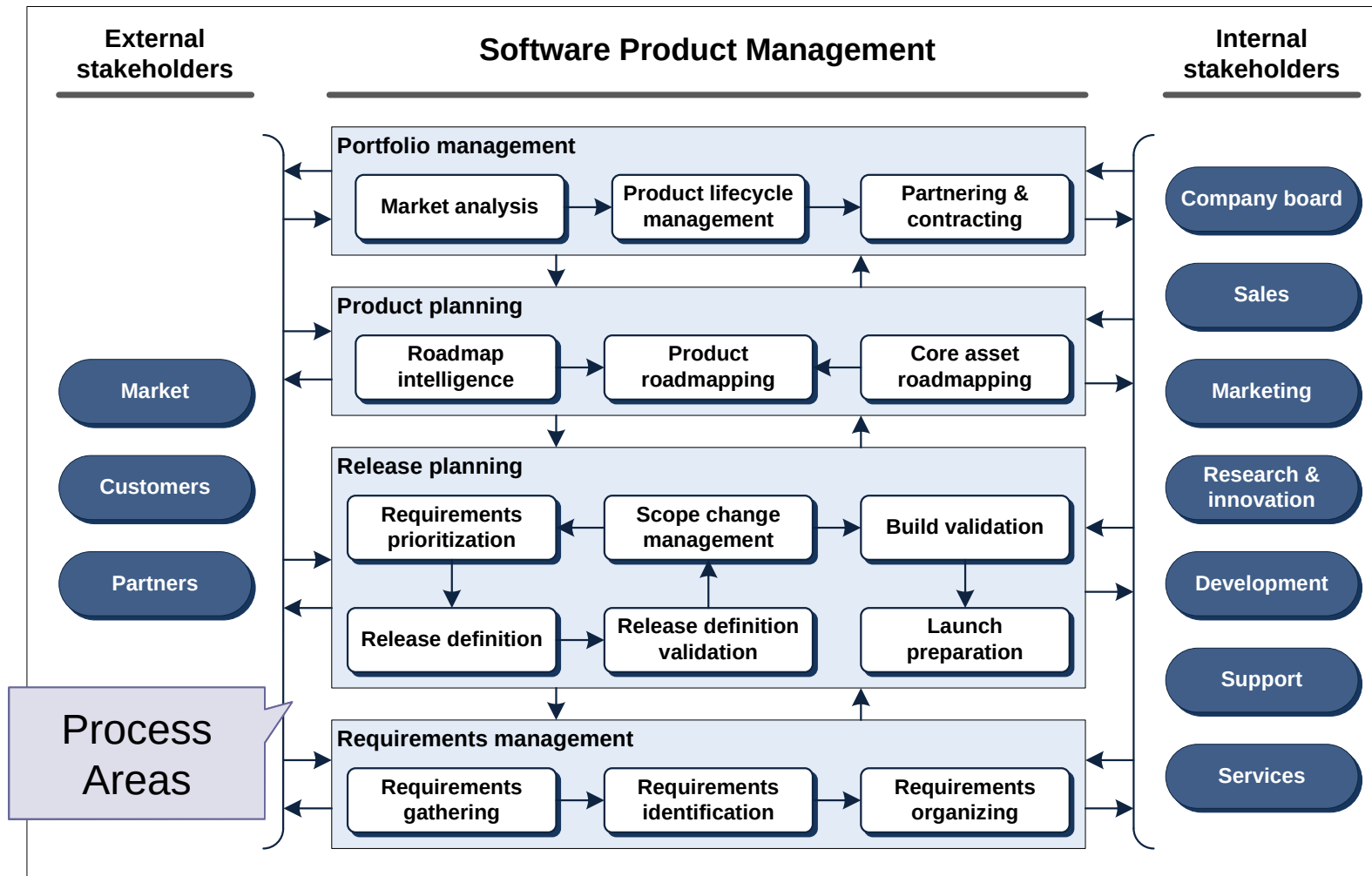
- Software product management is in essence a matter of well-organized processing of issues related to requirements, releases, and products.



Reference Model for Process Improvement



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Capability Levels

	0	1	2	3	4	5	6	7	8	9	10
<i>Requirements management</i>											
Requirements gathering		A		B	C		D	E	F		
Requirements identification			A			B		C			D
Requirements organizing				A		B		C			
<i>Release planning</i>											
Requirements prioritization			A		B	C	D			E	
Release definition			A	B	C				D		E
Release definition validation					A			B		C	
Scope change management				A		B		C		D	
Build validation					A			B		C	
Launch preparation		A		B		C	D		E		F
<i>Product planning</i>											
Roadmap intelligence				A		B	C		D	E	
Core asset roadmapping					A		B		C		D
Product roadmapping			A	B			C	D		E	
<i>Portfolio management</i>											
Market analysis					A		B	C	D		E
Partnering & contracting						A	B		C	D	E
Product lifecycle management					A	B			C	D	E

Process Area: Product Planning (Extract)



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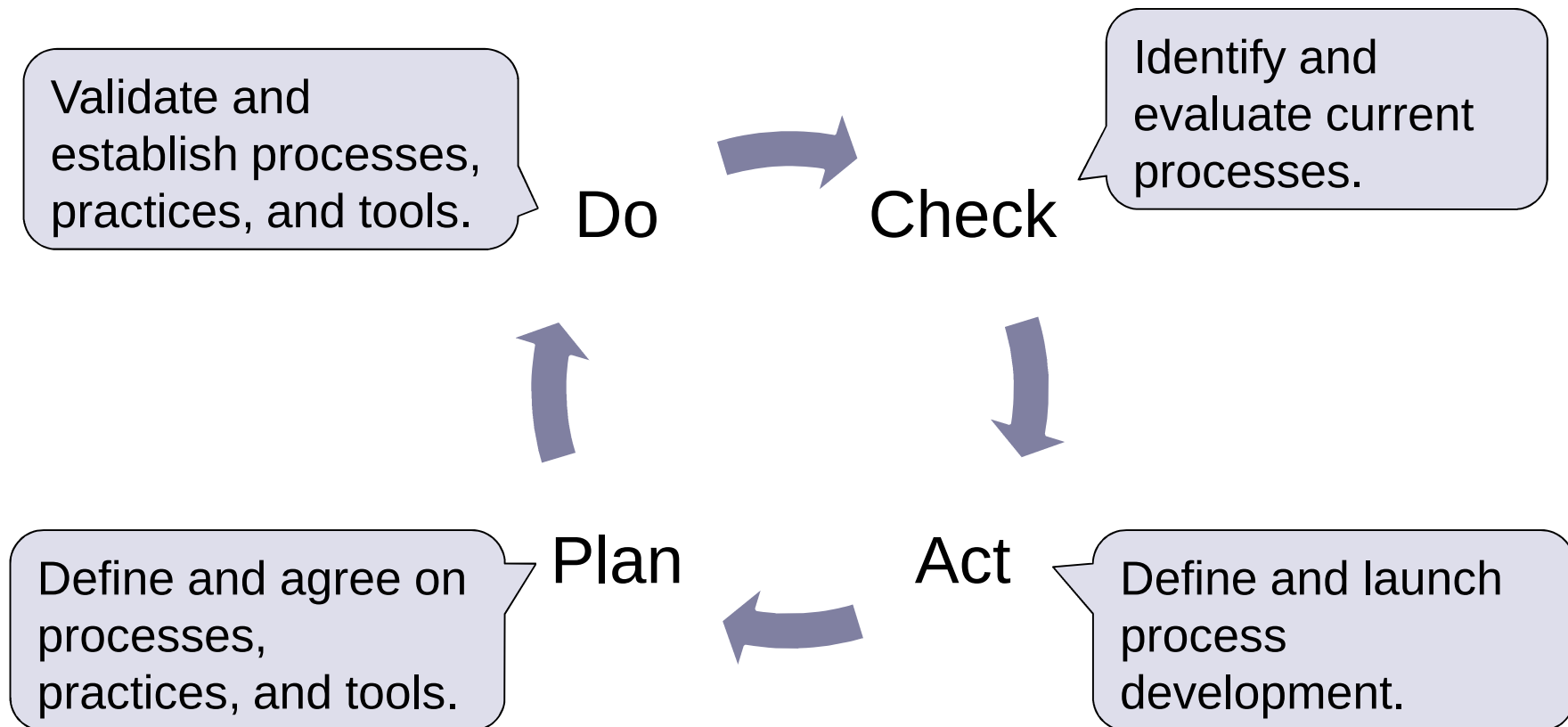


- Focus Area „Product Roadmapping“
 - A (Capability Level 2) Practice „Short-Term Roadmap“
 - Goal: Develop a short-term vision of the product(s).
 - Action: A roadmap is developed detailing the short-term plans. The plan spans more than one release.
 - B (Capability Level 3) Practice „Theme Identification“
 - Goal: Structure releases and roadmaps: themes are used to give a clear direction to the roadmap and later on to structure the requirements.
 - Action: Release themes are identified and maintained. Themes are decided together with the internal stakeholders. Identification of the themes results in a list of release themes that are stored centrally, so that requirements, core assets, market trends, etc. can be linked to it.
 - ...

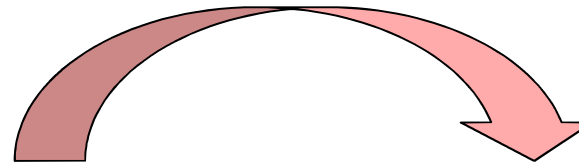


Process Development Procedure

Plan-Do-Check-Act Iterations (Deming 1986)



Incremental Improvements



	Maturity Levels	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10		
SPM																										
Product Planning																										
	Roadmap Intelligence				A		B		C		D	E					A		B		C		D	E		
	Core Asset Roadmapping					A			B		C		D					A			B		C		D	
	Product Roadmapping				A		B			C	D		E				A	B			C	D		E		
Requirements Management																										
	Requirements Gathering			A		B		C		D	E		F				A		B		C		D	E		F
	Requirements Identification				A				B		C			D				A			B		C			D
	Requirements Organizing					A			B		C							A		B		C				
Release Planning																										
	Requirements Prioritization				A		B		C	D		E					A		B		C	D		E		
	Release Definition				A	B		C				D		E				A	B		C			D		E
	Release Definition Validation					A				B		C						A				B		C		
	Scope Change Management				A			B		C		D						A		B		C		D		
	Build Validation					A			B		C							A			B		C			
	Launch Preparation			A		B		C	D		E		F				A	B		C	D		E		F	

Reference Model for Education



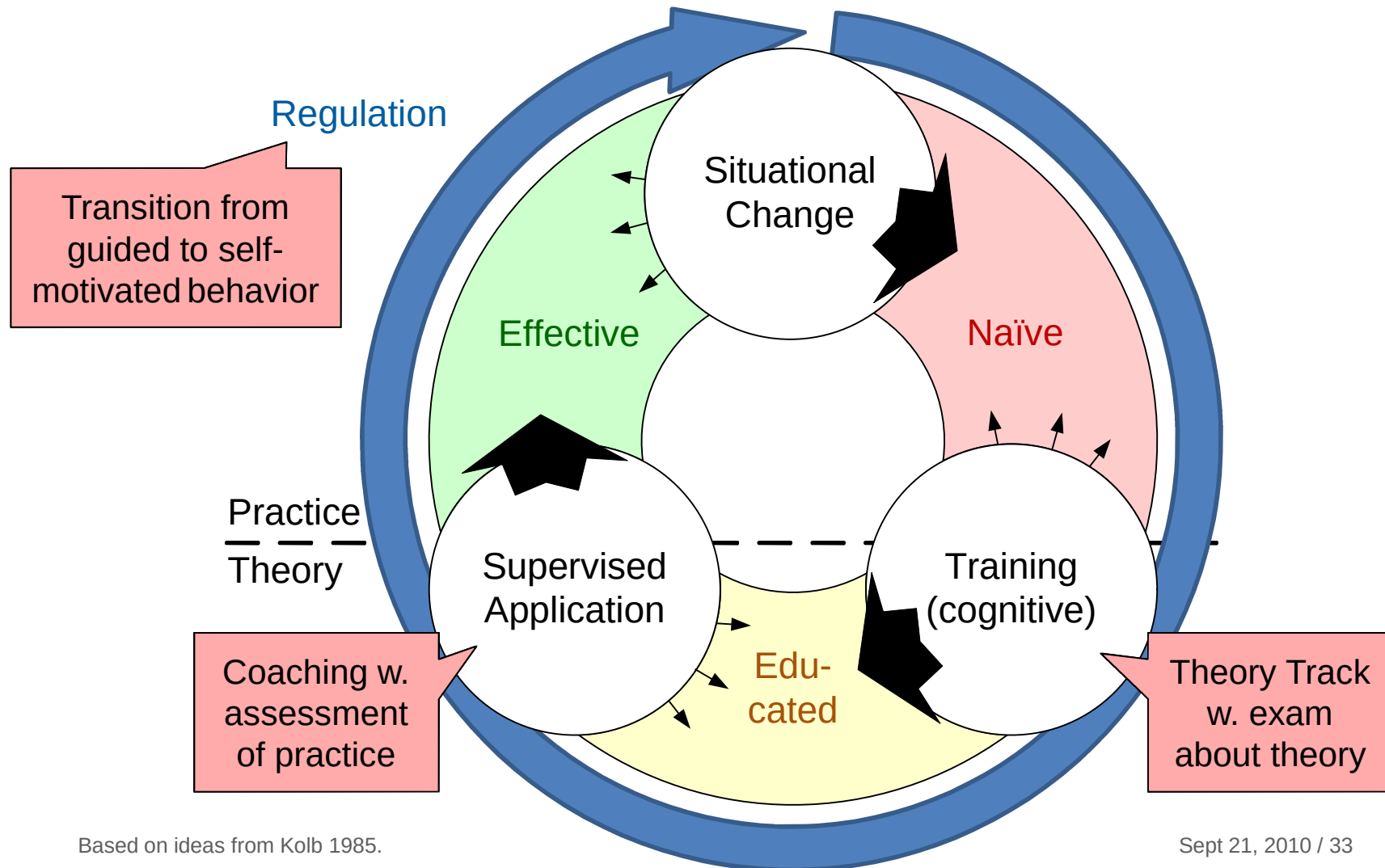
	Market Analysis	Product Analysis	Product Strategy	Product Planning	Development	Marketing	Sales and Distribution	Support and Services
Often on corporate level			Portfolio Management	Resource Allocation	Resource Allocation	Marketing Strategy and Plan	Sales Strategy and Plan	
Product (family) level	Market Research Market Sizing Market Problems Technology Assessment Competitive Analysis	Product Performance Customer Satisfaction Win/loss Analysis Opportunities	Positioning Delivery Model Pricing Model Pricing Business Case Make or buy Ecosystem Legal terms Protection of Intellectual Property	Roadmap Release Plan Requirements Management Functional Specification	Project Plan Technical Specification Project Requirements Management Implementation Quality Assurance Technology Innovation	Launch Plan Customer Analysis Partner Management Operational Marketing Material	Channel Preparation Operational Sales Operational Distribution Material	Customer Support Technical Support Marketing Support Sales Support Services Preparation Operational Services Provision

Artifacts and Activities

Learning Cycle for Behavioral Knowledge



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Early Lessons

Process Improvement

Applicability

- Product planning concerns, even in small organizations
- Product business and collaboration only little supported

Assessment

- Balance crosschecks with efficiency

Process Development

- SPM Reference Model is an incremental guideline
- Process development affects power bases

Learning Cycles

Education

- Training alone insufficient
- Practice without knowledge stays naïve

Coordination across coaches

- Process definition and learning objectives
- Discipline expertise
- Process consistency

Coaching, Assessment Efficiency

- Process homogeneity
- Tool support

Focus



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	Market Analysis	Product Analysis	Product Strategy	Product Planning	Development	Marketing	Sales and Distribution	Support and Services
Often on corporate level			Portfolio Management	Resource Allocation	Resource Allocation	Marketing Strategy and Plan	Sales Strategy and Plan	
Product (family) level	Market Research Market Sizing Market Problems Technology Assessment Competitive Analysis	Product Performance Customer Satisfaction Win/loss Analysis Opportunities	Positioning Delivery Model Pricing Model Pricing Business Case Make or buy Ecosystem Legal terms Protection of Intellectual Property	Roadmap Release Plan Requirements Management Functional Specification	Project Plan Technical Specification Project Requirements Management Implementation Quality Assurance Technology Innovation	Launch Plan Customer Analysis Partner Management Operational Marketing Material	Channel Preparation Operational Sales Operational Distribution Material	Customer Support Technical Support Marketing Support Sales Support Services Preparation Operational Services Provision



Elements of a Product Strategy

- Vision: Your Idea
- Business Model: How You Make Money
- SWOT: Where You Are
- Roadmap: How to Get There



Vision

- Defines the direction / theme / positioning of something new.
- Objectives:
 - Increase chances for product success by aligning the organization
 - reduce development time of a product to be faster than competitors.
- Objects of a vision: organisation, product, project.

Vision of Apple Macintosh Computer:
to create a business with the theme of a computer "for the rest of us," with ease of use as a clear basis for differentiation



Elements of a Vision

- Two ways to travel:
 - Select a direction or goal and then go there.
 - Just start wandering and let surprise you where you get.
- Three elements of a vision:
 - Where do we want to go?
 - How do we get there?
 - Why will we be successful?



Quality Criteria for a Vision

- Focus
 - Compaq (1993): We want to be the leading supplier of PCs and PC servers in all customer segments worldwide. We intend to accomplish this goal by leading the industry in developing new products, pricing competitively, controlling costs, supporting customers, and expanding distribution. Compaq understands the dynamics of the industry and is poised to move decisively to exploit new opportunities.

"Our mission is to continue to efficiently facilitate diverse methods of empowerment and professionally disseminate performance based deliverables to meet our customer's needs."

(Dilbert)





Quality Criteria for a Vision

- Clarity: people charged with implementing a vision need to interpret the vision consistently.
- Feasibility and Support: a vision needs not only to look good, but needs also to be implemented with the knowledge and capabilities of the organization.
- Stability: an ever changing vision confuses and frustrates.

Vision Quality vs. Product Success



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	Vision clarity ¹	Vision support ²	Vision stability ³	Innovation type
Successful				
Apple IIe	+	+	+	Incremental
Apple Mac+	+	+	+	Incremental
HP Vectra II	+	+	+	Incremental
IBM PC	+	+	+	Market
HP 85-Controller	+	✓	—	Technical
Unsuccessful				
HP 125	—	—	✓	Incremental
HP Vectra I	—	—	✓	Incremental
Apple III	—	—	—	Radical
Apple LISA	—	—	—	Radical
IBM DataMaster	—	—	—	Radical
IBM PCjr.	+	—	—	Radical
HP 150	✓	—	—	Radical
HP 85-PC	—	✓	✓	Radical
Questionable				
Apple Mac	++	+	+	Incremental

Measures:

¹ + = Very Clear; ✓ = Somewhat Clear; — = Unclear

² + = Widespread Agreement on Team and with Top Management;
✓ = Some Agreement on Team and with Top Management; — = Disagreement within Team or with Top management

³ + = Very Stable; ✓ = Somewhat Stable; — = Unstable



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