Software Product Management

ISPMA Foundation Workshop

08th April – 16th April 2024
Bangalore

Part 1

Professor S Sadagopan

&

Haragopal (hara) Mangipudi

..would rather have questions that can’t be answered than answers that can’t be questioned

-Richard Feynman*

Introduction

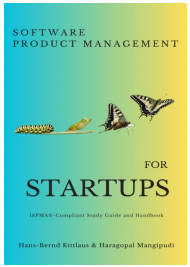
founder :

guNaka

mentor /advisor :

chronicled in:

Co-Author:



distinguished alum :

finuno
smart & trusted

ex-head & exec council member:

Infosys Finacle

founder trustee :

givmor.org

Member of Board / Advisory Council :

current

INTERNATIONAL SOFTWARE PRODUCT MANAGEMEN ASSOCIATION
ISPMA

IIT PALAKKAD

EDUCATE . INNOVATE . IMPACT

past

IIM Lucknow
SCIFI
SIDBI Center for Innovations in Financial Inclusion

adjunct faculty :

IIMB
तेजस्वि नावधीतमस्तु

IIT PALAKKAD

mit-b
ज्ञानमुत्तमम्

100 countries .. touching a billion+ lives..

‘World-class‘ is a verb

Forrester Wave™: Customer-Centric Global Banking Platforms, Q3 ’14

Source: August 6, 2014, “The Forrester Wave: Customer-Centric Global Banking Platforms, Q3 2014” Forrester report

ISPMA®

International Software Product Management Association ISPMA® is an open non-profit association of experts, researchers, and industrial professionals fostering software product management excellence across industries

https://ispma.org/

ISPMA Vision and Mission

- Vision

  Foster software product management excellence across industries by establishing software product management as a discipline of its own in both academia and industry

- Mission

  Establish, disseminate and maintain a certifiable body of knowledge on SPM (SPM BoK) that is recognized as the premier source on SPM by all stakeholders

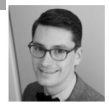
ISPMA Fellows worldwide


ALEXANDER MÄDCHE


ANDREY A. SALTAN


ANDREY MAGLYAS


ANTTI PAAJOKI


KARL WERDER


KATHARINA PEINE


KRZYSZTOF WNUK


LIOR R. ZADICAREO


TONY WASSERMAN


VENKATESH BALAKRISHNAN


ZHI JIN


ZORNITSA NIKOLOVA


BARBARA HOISL


CHRISTOF EBERT


DAVID FRADIN


DIMITRI PETRIK


LUCAS WEBER


MAGNUS BILLGREN


MARC HILBER


MICHAEL A. CUSUMANO


DIOMIDIS SPINELLIS


EFI PAPATHEOCHAROUS


FARNAZ FOTROUSI


FRANCO GATTI


MIKA HELENIUS


NIKLAS ROSVALL


PETER LICK


PETER STADLINGER


GARM LUCASSEN


GEORG HERZWURM


GERALD HELLER


GREG PRICKRIL


RAINER GRAU


ROBERT HUBER


S. SADAGOPAN


SACHA REIS


GREGORY COTICCHIA


GUENTHER RUHE


HANS-BERND KITTLAUS


HARAGOPAL MANGIPUDI

SAMI HYRYNSALMI

SAMUEL FRICKER

SANGEET PAUL CHOUDARY

SANJAI K

HARISH SRIGIRIRAJU

HELENA HOLMSTRÖM OLSSON

JAN BOSCH

KARL MICHAEL POPP

SCOTT MILLER

SEAN YO

SJAAK BRINKKEMPER

SLINGER JANSEN

Industry and Academia have joined forces

ISPMA Board

chairperson

Hans-Bernd Kittlaus

CEO at InnoTivum Consulting

COLOGNE-BONN REGION, GERMANY

board

Haragopal Mangipudi

Founder of guNaka

PHOENIX, AZ, USA

board

Andrey Saltan

Researcher at LUT University

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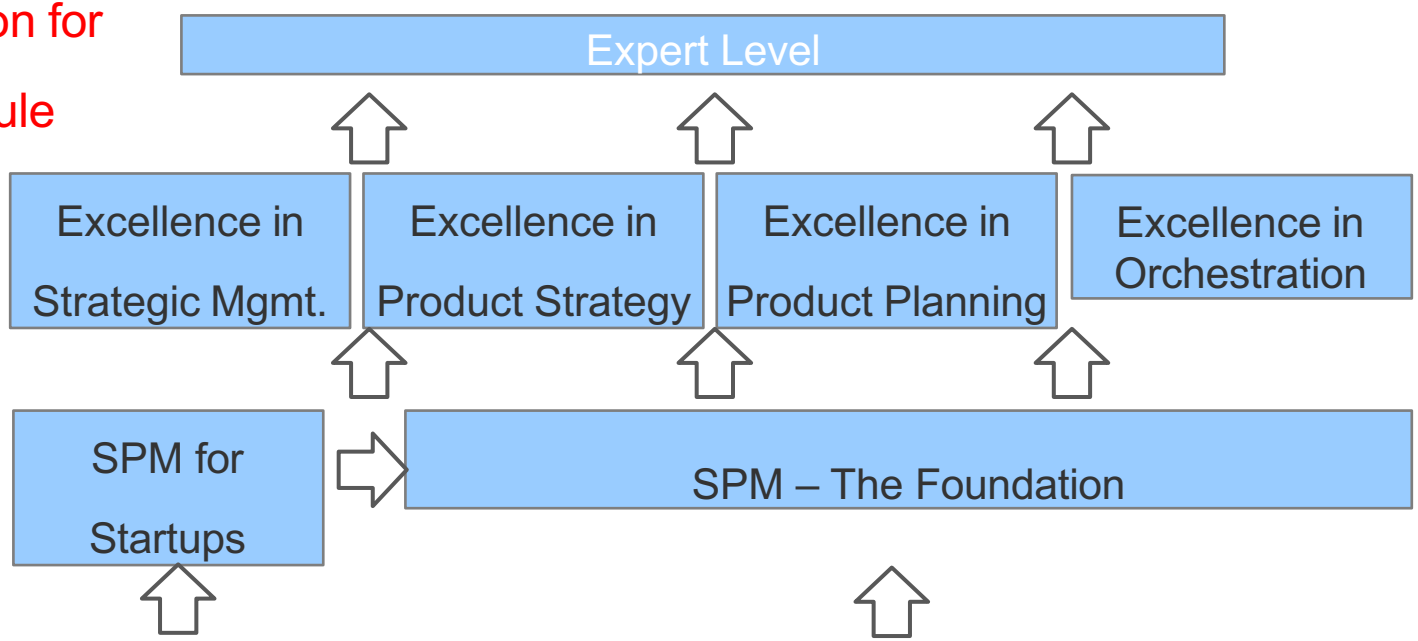
Peter Stadlinger

Head of Product for Freshsales Suite

MIAMI, USA

ISPMA Curriculum and Certifications

Certification for each module



ISPMA Curriculum and Certifications

SPM Reference Framework V.2.0 available

SPM Foundation Syllabus V.2.0 + Certification available

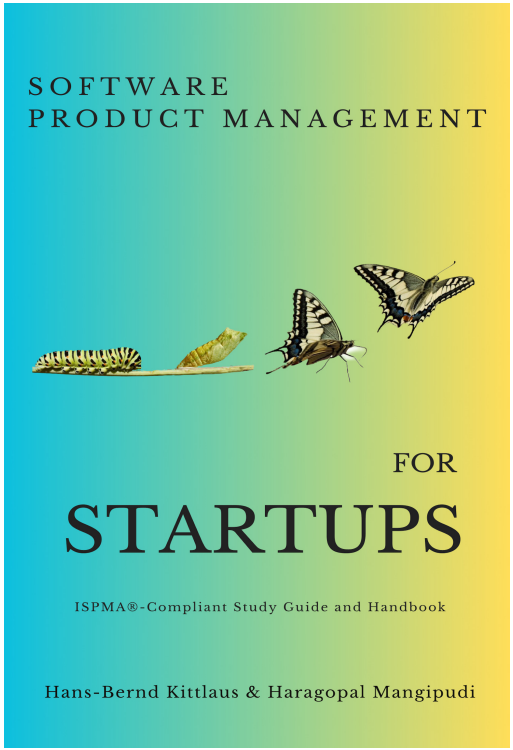
Startup SPM Reference Framework V.1.0 available

Startup SPM Syllabus V.1.0 available

SPM Excellence Level Syllabi + Certifications:

Strategic Management:	V.2.0 available
Product Strategy:	V.2.0 available
Product Planning:	V.2.0 available
Orchestration:	V.1.0 available

ISPMA Compliant Study Guide & Handbook



"Today, software is an integral part of the business of most start-ups. The ability to adopt a software product management perspective in this important part of their business is thus key to the success of many entrepreneurs. This comprehensive book by Haragopal and Hans-Bernd, both of whom have significant product management expertise and experience, is a great guide to the science and craft of software product management for start-ups."
Prof. Rishikesha T. Krishnan, Director & Professor of Strategy, **Indian Institute of Management Bangalore**, India

"As co-founder, practitioner as well as researcher in the product management discipline, I find this book invaluable with its fundamental insights and practical tools – this book is an ideal choice for readers seeking a strong foundation to embark as well as succeed in their startup journey."
Frédéric Pattyn, Co-Founder & Principal Product Manager @ **NOWJOBS** & PhD Student, Belgium

"Across industries, most startups today are trying to create innovative software-intensive products. This is finally the book that guides practitioners how to manage such a product in a startup environment. It is based on ISPMA's pioneering SPM best-practice approach, and written by two of ISPMA's thought leaders. A must-read for every budding entrepreneur and software product manager!"
Prof. S. Sadagopan, Founder and first Director, **International Institute of Information Technology Bangalore**, India

2023. 232 p. Paperback. ISBN 979-8862237580

SPM Summits worldwide

Bangalore, India, February 15th – 17th 2024 (at Indian Institute of Management)

Gothenburg, Sweden, June, 11th – 12th 2024 (at Chalmers University)

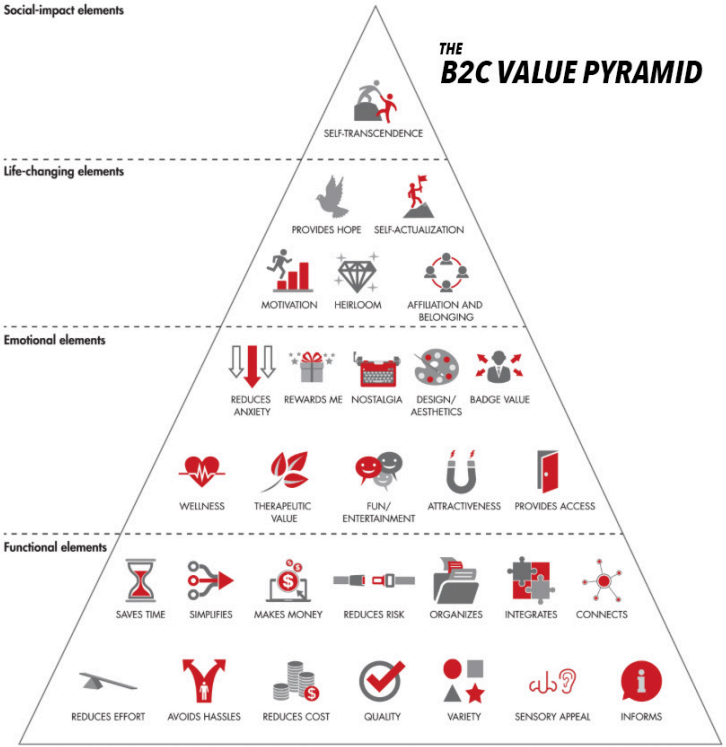
Berkeley, Ca., USA, Dec 06th 2024 (at University of California, Berkeley)
https://spmsummit.org/

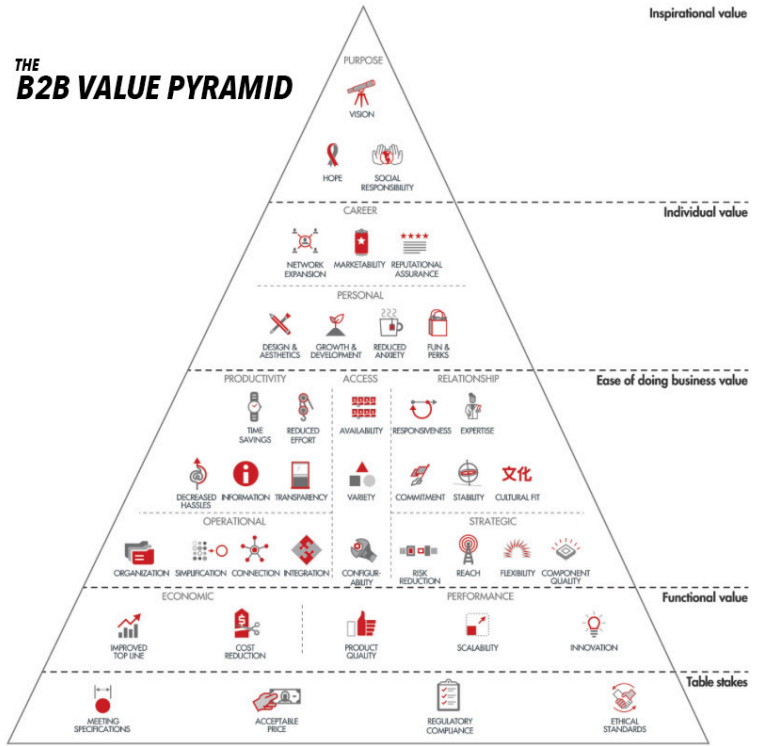
What do they all have in common?

- Marc Andreessen, co-founder of Netscape
- Jeff Bezos, founder of Amazon
- Steve Case, co-founder of AOL
- Michael Dell, founder of Dell
- Larry Ellison, co-founder of Oracle
- David Filo, co-founder of Yahoo!
- Bill Gates, co-founder of Microsoft
- Steve Jobs, co-founder of Apple
- Pierre Omidyar, founder of eBay
- Larry Page, co-founder of Google
- David Packard, co-founder of HP

The story of Three stone cutters..

Customer Value is the prime driver





Art of PRODUCT MANAGEMENT

Can we do this

Should we do this

feasibility

viability

Engineering skills

Business skills

Design skills

Do they need this

desirability

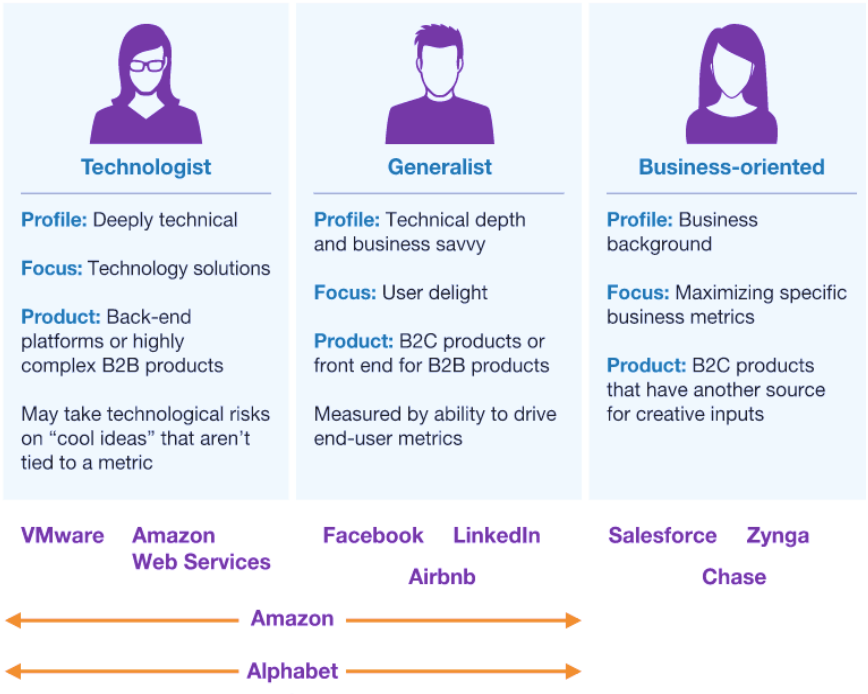
Problem Definers / Problem Solvers

Product Mindset

- Long term vision
- Continuous learning
- Appetite for high risk
- Owners' perspective
- **Customer Value Centric**
- Outcome orientation
- Problem Definer

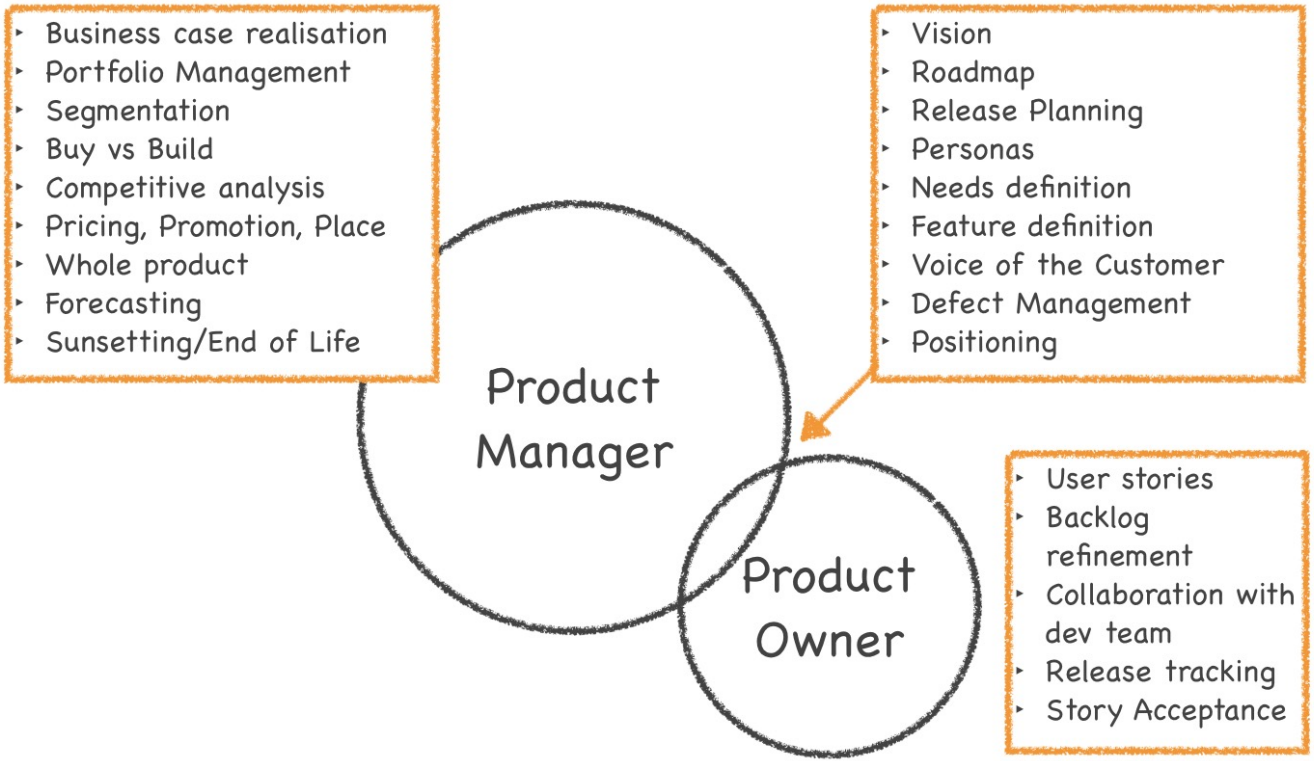
Software Product Manager Archetypes

The mini-CEO is the dominant archetype for Silicon Valley product managers.



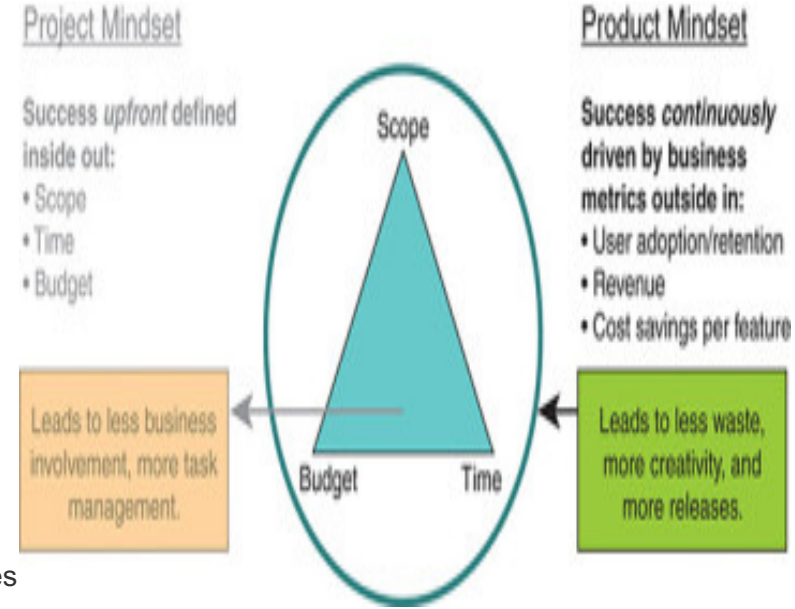
*source: https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/product-managers-for-the-digital-world#

Product Manager Vs Product Owner



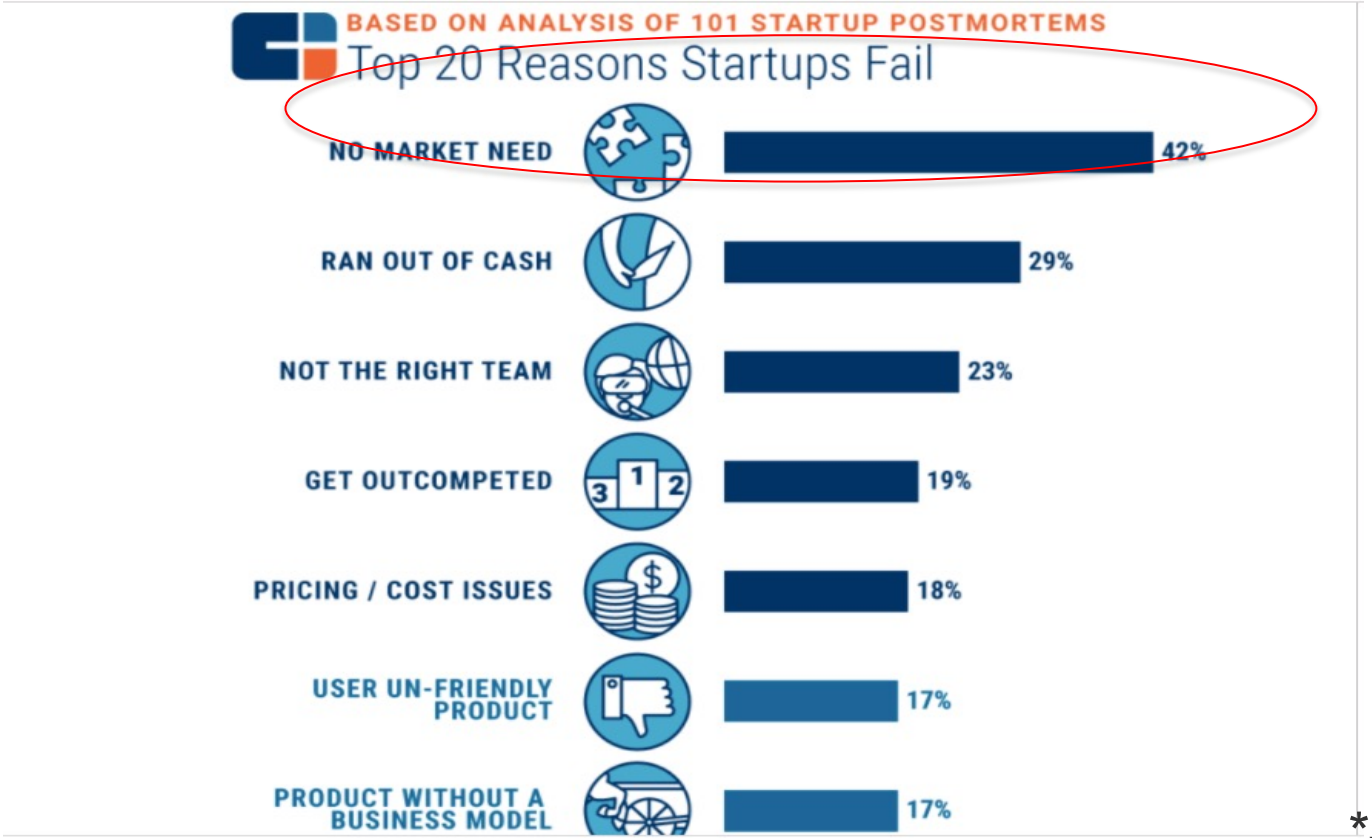
Product Vs Project

- ✓ General Availability :
  - ✓ **General availability** (GA) is the marketing stage at which all necessary commercialization activities have been completed and a software product is available for purchase, depending, however, on language, region, electronic vs. media **availability**
- ✓ Non-linearity
- ✓ Scalability
- ✓ Respect for Intellectual Property
- ✓ Problem Definer Vs Problem Solver
  - ✓ This product is for: (Your Audience)
  - ✓ It will help them solve this problem: (The Problem)
  - ✓ We will do this by: (The Strategy)
  - ✓ We expect a working product to: (The Objective)
  - ✓ Once you've done this definition – you can move on to deciding features
- ✓ Investments – funds, talent & resources



PROJECT	vs.	PRODUCT
outputs		outcomes
scope, time, budget		continuous value
abstract (work management)		concrete (an actual thing)
predictive		adaptive
has a finish		ongoing

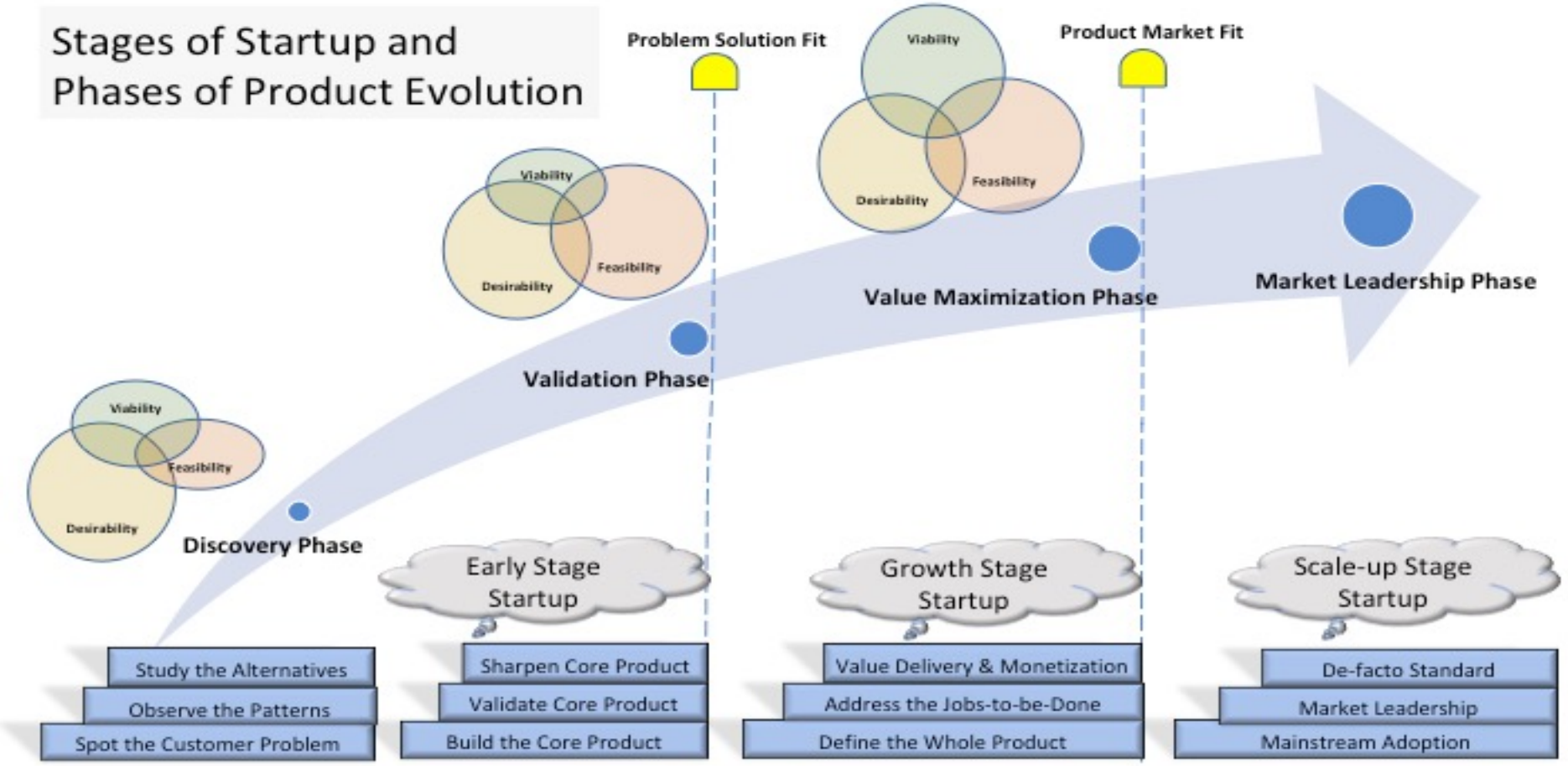
Why Products Fail?



* www.cbinsights.com
April 2024

Some books you'd like to read after the course..

Stages of Startup and Phases of Product Evolution



1. Introduction and Foundations
ISPMA SPM Framework (V.2.0, 2021)

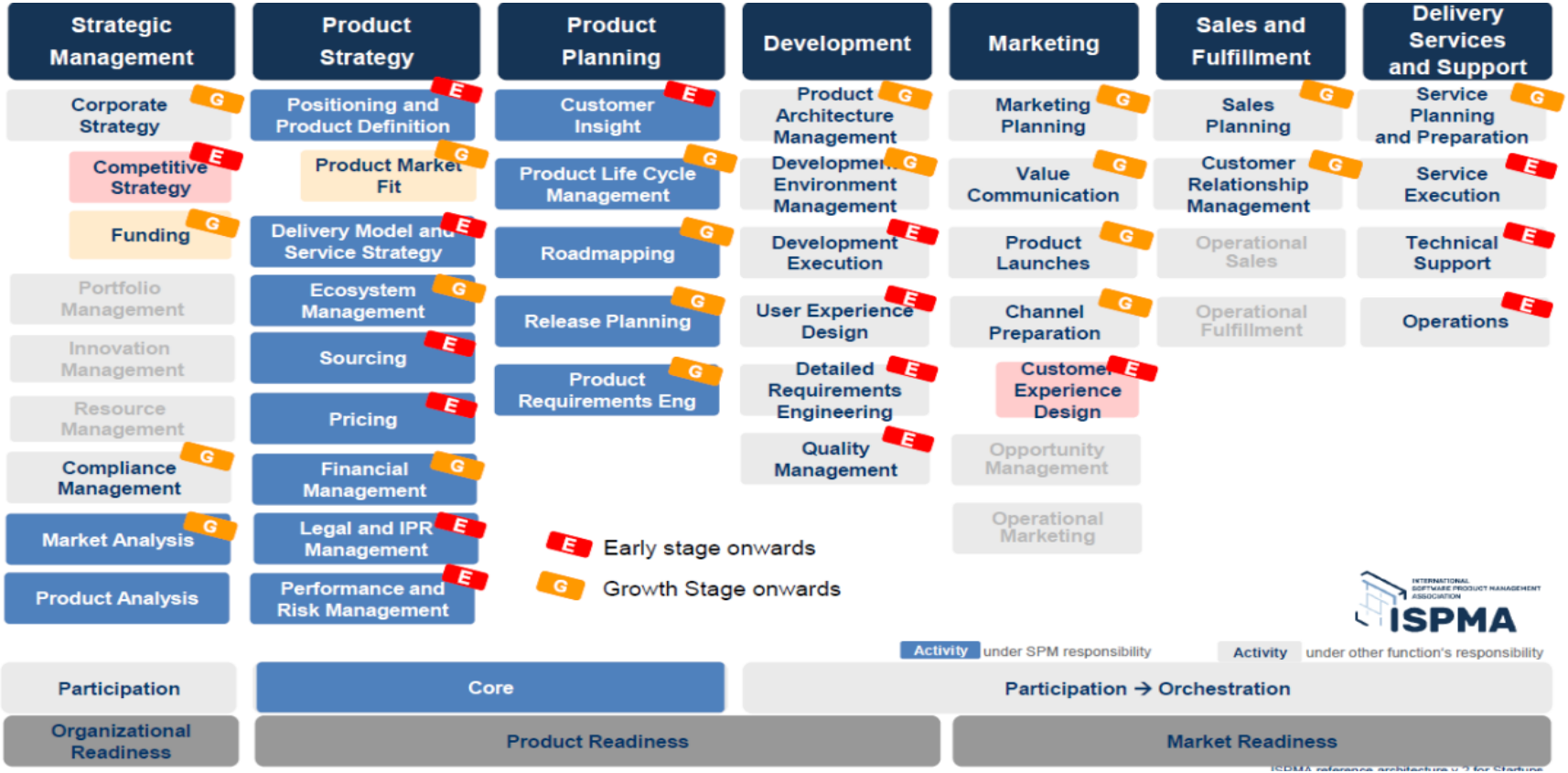
Strategic Management	Product Strategy	Product Planning	Development	Marketing	Sales and Fulfillment	Delivery Services and Support
Corporate Strategy	Positioning and Product Definition	Customer Insight	Product Architecture Management	Marketing Planning	Sales Planning	Service Planning and Preparation
Portfolio Management	Delivery Model and Service Strategy	Product Life Cycle Management	Development Environment Management	Value Communication	Customer Relationship Management	Service Execution
Innovation Management	Ecosystem Management	Roadmapping	Development Execution	Product Launches	Operational Sales	Technical Support
Resource Management	Sourcing	Release Planning	User Experience Design	Opportunity Management	Operational Fulfillment	Operations
Compliance Management	Pricing	Product Requirements Eng	Detailed Requirements Engineering	Channel Preparation		
Market Analysis	Financial Management		Quality Management	Operational Marketing		
Product Analysis	Legal and IPR Management					
	Performance and Risk Management					

Participation | Core | Orchestration

Activity under SPM responsibility **Activity** under other function's responsibility

ISPMA reference architecture v 2

ISPMA Startup SPM Framework (V.1.0, 2021)



Definitions

Software product management (SPM)
means the management of software products and software parts (embedded software) of software-intensive products, i.e. systems or services.

It is the discipline that governs a software product (or part) over its whole life cycle, from its inception
through growth and maturity to end of life, in order to generate the biggest possible value to the business.

Learning Objectives

- L1 (know): enumerate, characterize, recognize, and name.

- L2 (understand): reflect, analyze, execute, justify, describe, judge, display, design, develop, complete, explain, elucidate, elicit, formulate, identify, interpret, reason, translate, distinguish, compare, understand, suggest, and summarize

Course Outline

1. Introduction and Foundations

- Software as a Business
- Relevant terms, role, objectives
- Software Product Management Overview & Framework

2. Product Strategy

2.1 Essentials

- Role and Elements of Product Strategy and their Interdependencies
- Product Name, Positioning and Product Definition
- Delivery Model, Service Strategy and Sourcing

2.2 Business Aspects

- Business Models
- Business Case
- Costing and Pricing
- Performance & Risk Management

Course Outline

2. Product Strategy

2.3 Ecosystem Management

- Role and Elements / Stakeholders

2.4 Legal Aspects

- Contracts / Management of Intellectual Property Rights (IPR)

3. Product Planning

3.1 Product Requirements Engineering

- Role of Requirements Engineering in Software Product Management
- Inquiry cycle with elicitation, analysis, and validation

3.2 Release Planning

- Release Planning Process and its conflicts / Structure of Release Plan

3.3 Road mapping

- Product Roadmap and its elements
- Sources of input / Usage of Roadmaps

3.4 Product Life Cycle Management

- Phases of the Life Cycle

Course Outline

3.5 Impact From Development Methodologies

4. Strategic Management

- Portfolio Management and Corporate Strategy
- Innovation and Resource Management
- Market and Product Analysis

5. Orchestration of Functional Areas

5.1 Development

5.2 Marketing

5.3 Sales and Distribution

5.4 Service and Support

5.5 The Role of SPM as Orchestrator

- Roles and Responsibilities of SPM
- Orchestration Challenges and Strategies

6. Project presentations

7. Certification Exam (optional and direct with ISQI)

Learning Objectives, Pedagogy & courseware

- ✓ Understand the nuances of software products business
- ✓ Understand the pivotal role of Software Product Manager
- ✓ Understand the orchestration between product management and other business functions
- ✓ Understand the global best practices in Software Product Management

- ❑ Lecture with a “practitioner's perspective”
- ❑ Experiential Learning with intern projects
- ❑ Global Knowledge through Expert interactions

Exam Questions Types

Single Choice: They yield 1 to 2 points.

- After the presentation of the question, 4 – 5 possible answers will be supplied, of which only one will be correct. This will be the one to check. Some single choice questions may be presented in a negative form (which one is the only wrong answer?).

- *Evaluation:*
  - *Correctly checked answer: full point value*
  - *Incorrectly checked answer: 0 points*
  - *More than one checked answer: 0 points*

Exam Questions Types: Example

Single Choice

A software product evolves and exists in different releases. Which **one** of the following release types is often called “version”? (1 point)

A) Major release

B) Minor release

C) Update release

D) Service release

E) Patch

The only correct answer: A

Evaluation:

- *answer A: 1 point*
- *all other answers: 0 points*

Exam Questions Types

Multiple Choice: They yield 1 to 2 points, depending on the difficulty.

- After the presentation of the question, a number of possible answers will be supplied of which 2 or more can be correct. The expected number of answers *n* is given in the presentation; e.g. Name the **three** types of diagram suitable for modeling … (*n* = 3).

- You do not have to give the total number of expected answers (*n*). In doubt it may be better to give fewer answers in order to avoid deduction of points (see evaluation below). Multiple choice questions often call for the identification of the best, most likely, or best fitting answers from a gray area. Some questions may be presented in a negative form (e.g. which two elicitation techniques are not suitable for …).

Exam Questions Types

Multiple Choice: They yield 1 to 2 points, depending on the difficulty.

- *Evaluation:*
  - *– for each correctly checked answer within the limit n: 1/n times the full points*
  - *– for each incorrectly checked answer within the limit n: deduction of 1/n times the full points*
  - *– less than n answers checked: without consequence*
  - *– more than n answers checked: total of 0 points*
  - *– The points for correct choices and the deduction for incorrect choices are totalized per question. If the total for a question results in a negative figure, the question will be evaluated with 0 points.*

Exam Questions Types: Example

Multiple Choice: They yield 1 to 2 points, depending on the difficulty.

A product manager has to keep track of the business success of his product.
Which **two** of the following items are suitable measures for business success?
A) Profit (2 points)
B) Customer satisfaction
C) Amount of incoming change requests
D) Average development time
E) Size of development team

Correct answers: A, B

Evaluation:

- *answer A: 1 point, answer B: 1 point*
- *all other answers: -1 points*
- *more than 2 answers: total of 0 points*
- *points and penalty points are totalized and evaluate to 0 points minimum*

Exam Questions Types

True / False Questions: They yield 2 – 3 points, depending on the difficulty.

- After the presentation of the question, *n* statements will be supplied, each with two checkboxes for "true" and "false" or “applicable” and “not applicable” or "suitable" and "unsuitable", etc. You need to mark each statement as "true" (“applicable”, "suitable") or as "false" (“not applicable”, "unsuitable"). Statements with no check mark will be deemed unanswered. You do not have to give the total number of expected answers (n), in doubt it may be better to give less answers in order to avoid deduction of points (see evaluation below).

Exam Questions Types

True / False Questions: They yield 2 – 3 points, depending on the difficulty.

- *Evaluation:*
  - *– each correctly checked statement: 1/n times the full points*
  - *– each incorrectly checked statement: deduction of 1/n times the full points*
  - *– less than n answers checked: without consequence*
  - *– The points for correct choices and the deduction for incorrect choices are totaled per question. If the total for a question results in a negative figure, the question will be evaluated with 0 points.*

Exam Questions Types: Example

K question example (true/false question):

Which statements are true for business cases and which are false? *(2 points)* A business case...		
	True	False
A) ... compares expected financial results with the required investment for a given undertaking	❑	❑
B) ... for a new product should be written by the company board	❑	❑
C) ... should contain an elaboration of possible scenarios and contingencies	❑	❑
D) ... should only focus financial investments and results and not on development resources in terms of capabilities and man hours	❑	❑

Correct answers: A true, B false, C true, D false

Evaluation:

- *each correctly checked answer: 0.5 points*
- *each incorrectly checked answer: -0.5 points*
- *points and penalty points are totalized and evaluate to 0 points minimum*

Software Product Manager

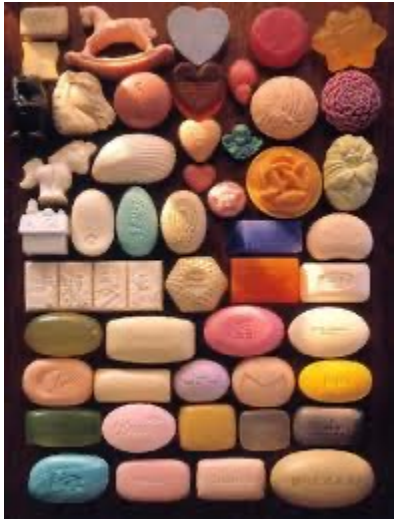
Photographed in Yerevan, Armenia, 5.6.07

1. Introduction and Foundations: Product Management

- First occurrence: Procter & Gamble 1931 for consumer goods (soap)

- Explicit management of products as sustainable assets of a company, i.e.
- Management and coordination of all relevant areas within and outside of the company

- Objective: sustainable optimization of product success



1. Introduction and Foundations: Characteristics of Software Products

- **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.

1. Introduction and Foundations: Characteristics of Software Products

- **High Complexity:**
  - Some of the most complex systems mankind has produced.
- **Stickiness:**
  - Once a software product is installed and widely used in a company, it is difficult and costly to replace.

1. Introduction and Foundations: Characteristics of Software Products

- **Simple Copying:**
  - Irrelevance of production and logistics.
- **Marginal Cost Close to 0:**
  - Manufacturing and distributing extra copies do not mean extra cost for the company.
  - Any additional license goes directly to the bottom line.
- **Law of Increasing Returns:**
  - Market leadership as a key success factor.

1. Introduction and Foundations: Software Product Management

Any software organization needs to do it:

- Software product companies
- Companies with software-intensive products and services (in all industries)
- Companies in transition from (human) service to product business
- Corporate IT organizations (in all industries)

1. Introduction and Foundations: Software History

- „Software“ as a term: J.W. Tukey 1958
- Initially free add-on to a computer as a hardware product

- Over time decoupling of software from hardware due to
  - Higher level programming languages and their compilers
  - IBM‘s /360 processor series: same APIs for a family of processors with a broad performance range
  - Pressure on IBM by US Ministry of Justice in 1969

- Worldwide enterprise software market
  - 2014: 310 bill. $
  - 2017: 352 bill. $
  - 2018: 391 bill. $
  - 2022: 530 bill. $ (CAGR 8.5 %)

Gartner Market Databook (April 2018), 1Q18 Update.

1. Introduction and Foundations
Definitions

Product

Combination of (material and/or intangible) goods and services, which one party (called supplier) combines in support of their commercial interests, to transfer defined rights to a second party (called 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.

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

1. Introduction and Foundations
Definitions

Embedded Software =

software that is not sold stand-alone, but is integrated into a non-software product.

source: apple

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

1. Introduction and Foundations
Examples

- Mobile phone:
  device including software with telecommunications and other capabilities
- iPhone app: software product
- Games console: games product including software
- Game for console: software product
- Online account: banking product including software or software product

1. Introduction and Foundations
More Definitions

- **Product family**

  Set of software products which for marketing reasons are marketed as belonging together under a common family name

  (example: Microsoft Office 365).

- **Product platform**

  technical foundation on which several software products are based

  (example: Microsoft Windows)

➔ The concepts of family and platform are not necessarily aligned.

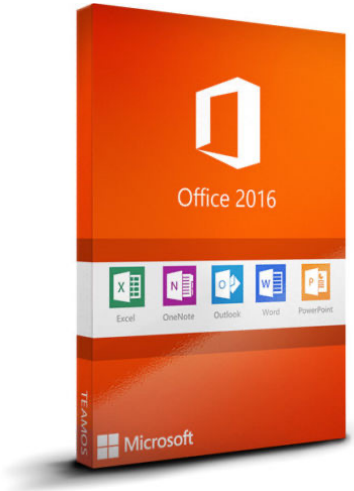
- **Product line**

  Set of software products which are based on a common platform with defined variability (example: Google Android)

1. Introduction and Foundations
Product Family

- A product family provides a basis for efficiently marketing a set of products: recognition and cost decrease.

Address a specific problem as a set of products



Common features, integration, interface similarities

Technological similarity

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

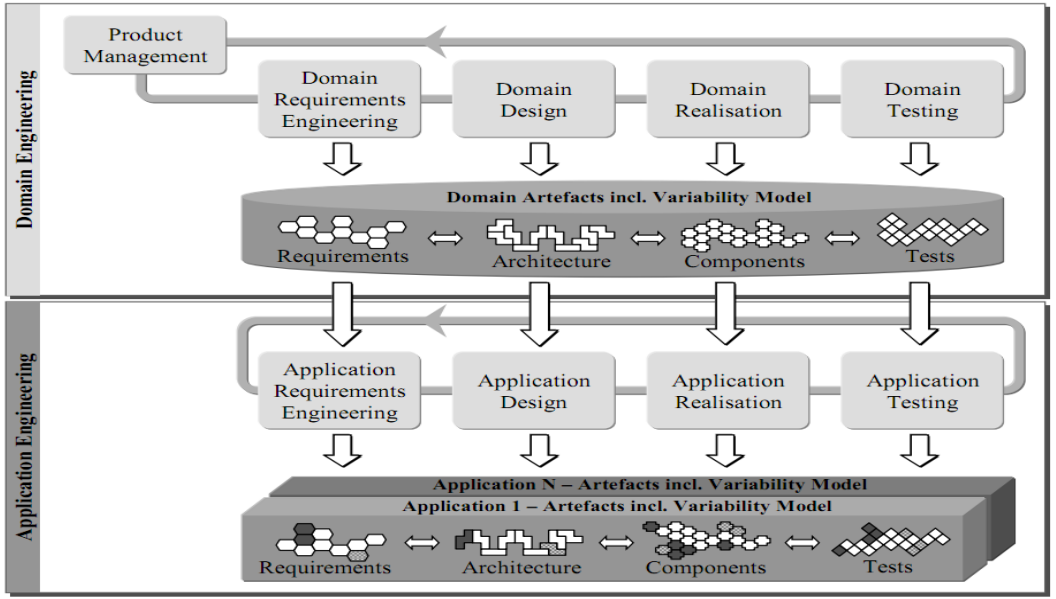
1. Introduction and Foundations
Product Line

- A product line provides a basis for tailoring a product to different market and user segments: quality increase and cost decrease.
- A product line is based on a platform that acts a basis for developing one or a family of products

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

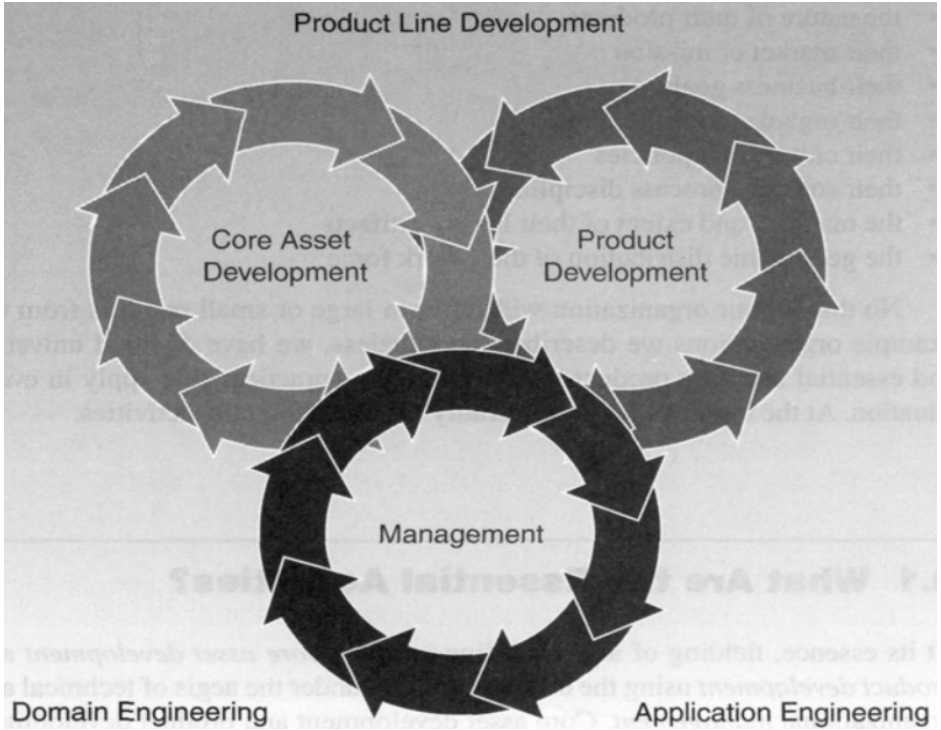
1. Introduction and Foundations
Software Product Line Engineering

- Combination of mass customization and a common platform
  - Reuse a common base of technology
  - Bring out products in close accordance with customers‘ wishes
- Implications on development
  - Core asset development: creating the platform
  - Product development: utilize planned flexibility
  - Management: organizing the company



Pohl, Böckle, van der Linden (2005): Software Product Line Engineering. Springer.

1. Introduction and Foundations
Software Product Line Engineering



Clements, Northrop (2002): Software Product Lines: Practices and Patterns. Addison-Wesley.

1. Introduction and Foundations
Definitions

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It is the discipline that governs a software product (or part) over its whole life cycle, from its inception
through growth and maturity to end of life, in order to generate the biggest possible value to the business.

1. Introduction and Foundations
SPM Objective

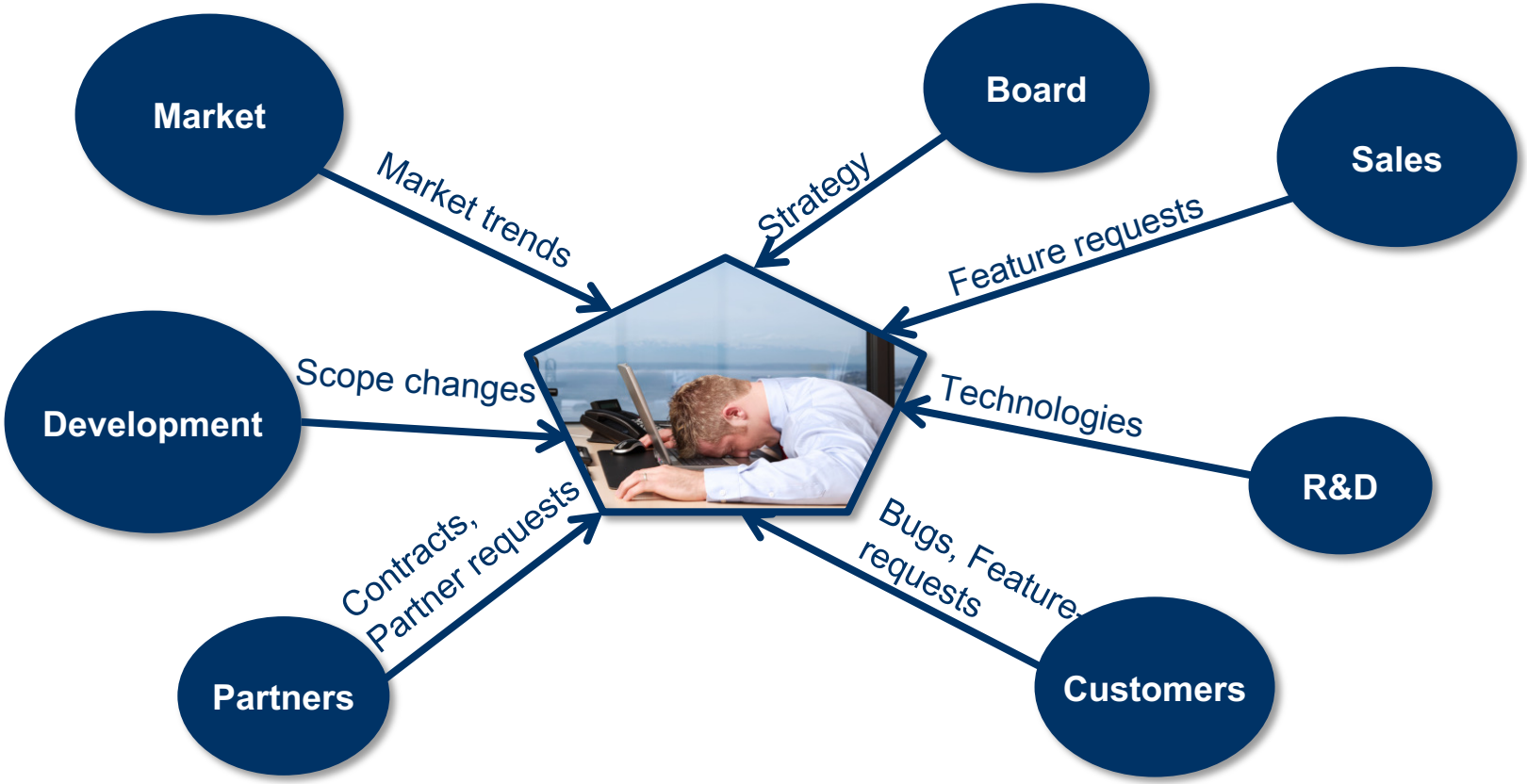
- Objective: sustainable success of the software product across its life cycle
- Measurements (long term and delayed):
  - Profit
  - Customer satisfaction
  - Market penetration

➔ Continuous tracking of relevant measures (with the help of Controlling)

- Software product management as a continuous task (with subtasks having project or process charter)

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

1. Introduction and Foundations
SPM Role



1. Introduction and Foundations
SPM Role

- Central **leadership** role for all aspects that concern the product

➔ **„Mini-CEO“**

- Typically without (full) hierarchical management responsibilities

➔ Convincing (persuading) moderator

- Skill profile: ideally extremely broad but nobody could meet that
- Management capabilities with deep knowledge/experience in some areas fully sufficient

➔ Alternatively split of work in bigger teams

- Many different names

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

1. Introduction and Foundations
SPM Role

- Prioritize
- Focus on the important rather than the urgent

  ➔ Not the universal caretaker

  (➔ Program Management or Project Office)

- ISPMA approach:
  - Software Product Manager and
  - Product Marketing Manager

  are two separate roles that in some companies are assigned to the same person

Kittlaus, Fricker (2017): Software Product Management: The ISPMA-Compliant Study Guide and Handbook.

1. Introduction and Foundations
SPM Role in Different Environments

- Some business aspects like pricing or legal aspects like contracts are only relevant on a product level

➔ Typically not relevant for SPM for embedded software

➔ See addendum of the FL syllabus for different types of companies

1. Introduction and Foundations
Successful SPM Behaviour

- Behave like an embedded CEO („mini-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 long-term sales (top-line) and profits (bottom-line)
- Periodically check assumptions such as business cases
- Take risks and manage them
- Prioritize

Ebert (2009): „Software Product Management“. CrossTalk.

1. Introduction and Foundations
SPM in the organizational structure

- Software Product Management (and Pricing) always conflict-ladden
- Whatever the organizational structure, cooperation across the organization is to be coordinated and managed, mostly without hierarchical management competencies
- Success depends on clear and precise definition of tasks and responsibilities by executive management
- Role in corporate processes:
  - Representation of the product in portfolio management
  - Representation of the product in other planning processes

1. Introduction and Foundations
SPM in the organizational structure

Organizational structures are needed because

- Growing organisations need functional specialists
- Management has limits in numbers

Categories:

F: *Functional*

HRM, Development, Sales, Marketing, …

P: *Product*

ERP, Middleware, BIS, Localizations, …

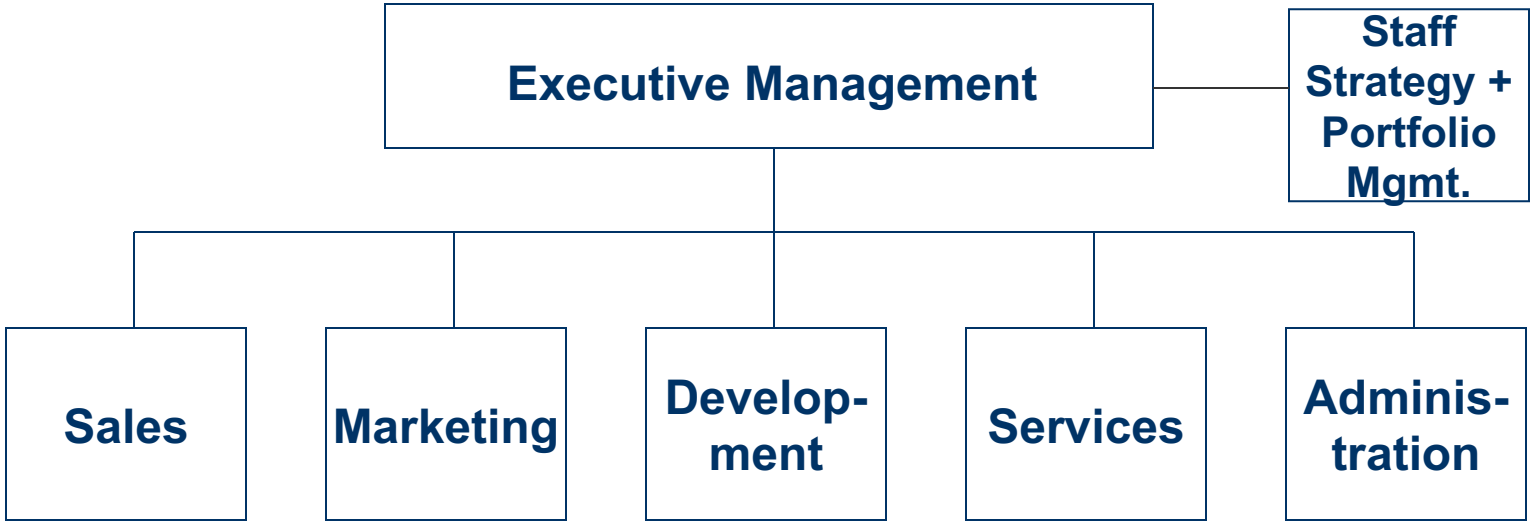
M: *Market*

Large accounts, SME, Public, Banking and Insurers, …

G: *Geografic*

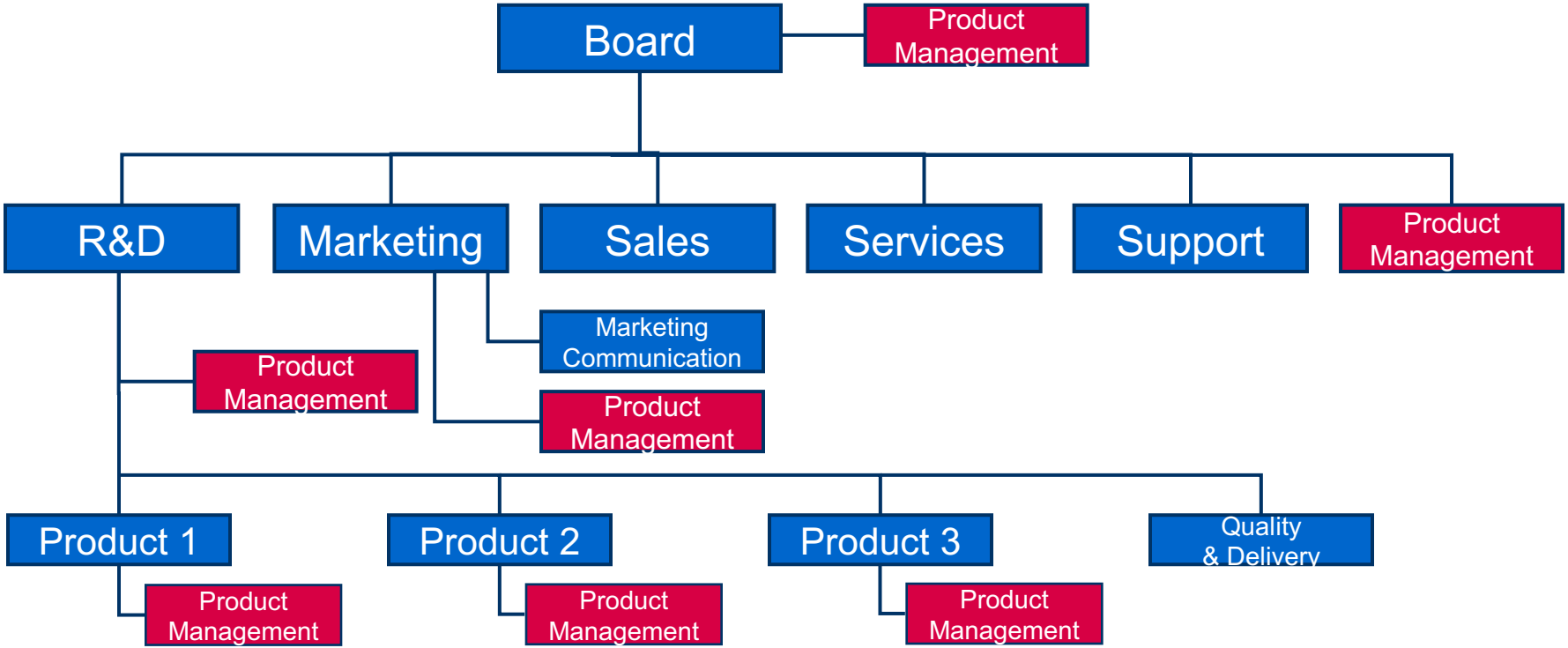
Benelux, Nordic, UK, France, …

1. Introduction and Foundations
Functional organization

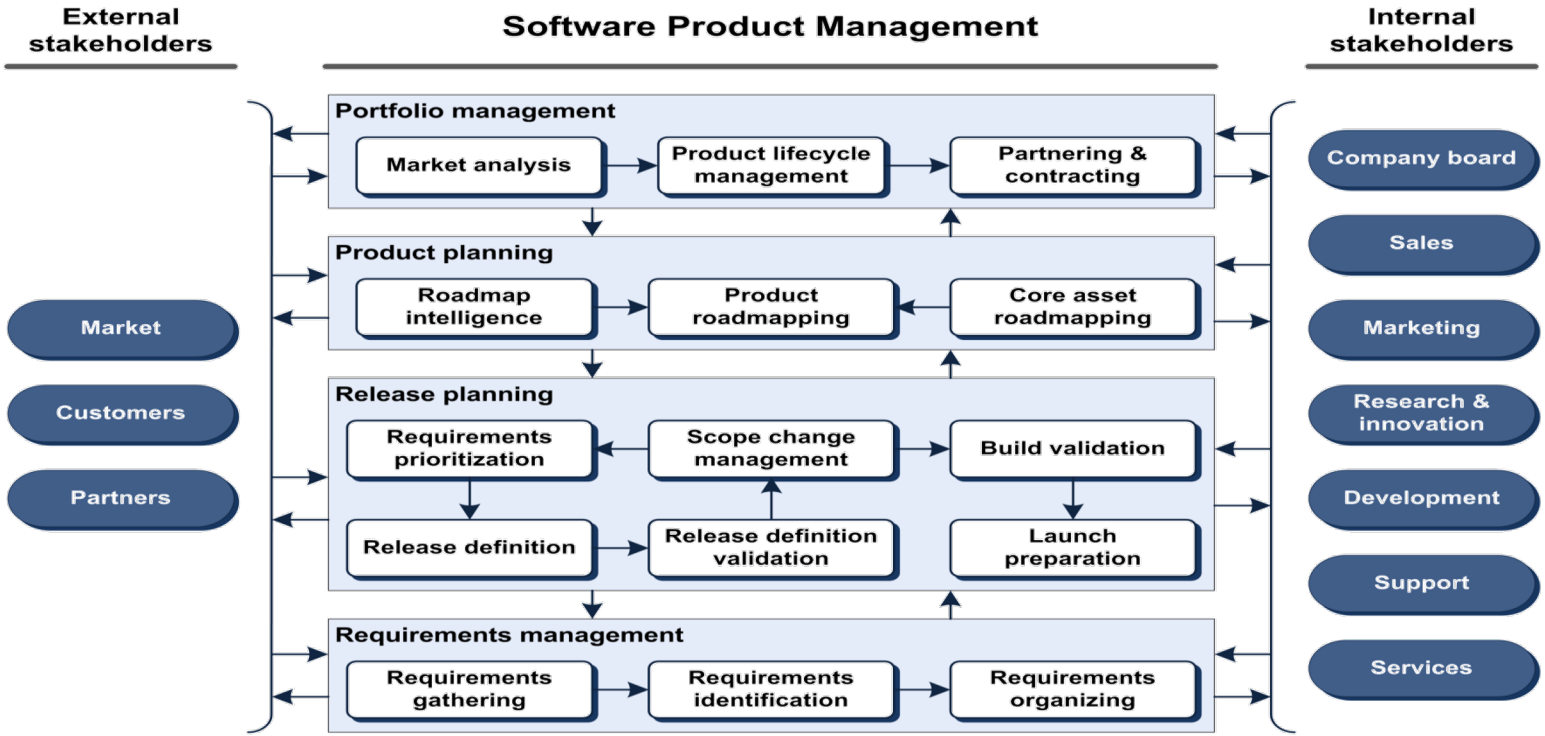


1. Introduction and Foundations
Product organization

1. Introduction and Foundations
Organizational alternatives



1. Introduction and Foundations
SPM Framework (v.d. Weerd, Brinkkemper, 2006)



1. Introduction and Foundations
SPM Framework (Kittlaus/Clough, 2009)

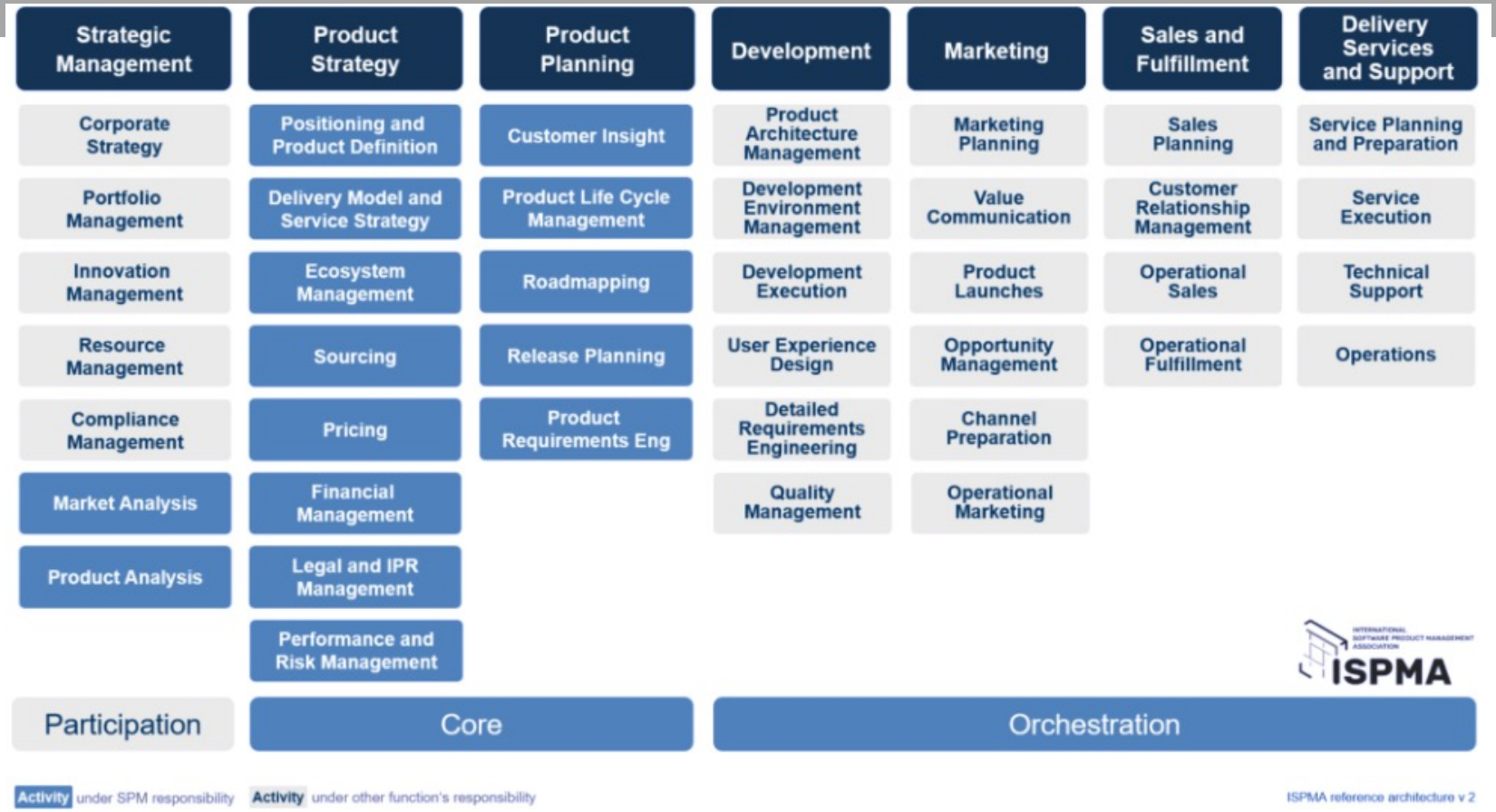
	Market Analysis	Product Analysis	Product Strategy	Product Planning	Development	Marketing	Sales and Distribution	Support and Services
Often on Corporate level			(Corporate Strategy) Portfolio Management	Resource Management	Resource Management	Marketing Strategy and Plan	Sales Strategy and Plan	Resource Management
Product (family) level	Market Research Market Sizing Market Problems Technology Assessment Competitive Analysis	Product Performance Customer Satisfaction Win/loss Analysis Opportunities	Positioning Delivery Model Sourcing Business Aspects (incl. Pricing) Ecosystem Legal Aspects	Product Life Cycle Management Roadmapping Release Planning Requirements Management (Functional Specification)	Project Plan Technical Specification Project Requirements Management Implemen-tation 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

Software Product Management Framework
(Core Product Management, Core Pricing, Tasks to participate in or to orchestrate)

1. Introduction and Foundations
ISPMA SPM Framework (V.1.2, 2018)

Strategic Management	Product Strategy	Product Planning	Development	Marketing	Sales and Distribution	Service and Support
Corporate Strategy	Positioning and Product Definition	Product Life-Cycle Management	Engineering Management	Marketing Planning	Sales Planning	Service Planning and Preparation
Portfolio Management	Delivery model and Service Strategy	Roadmapping	Project Management	Customer Analysis	Channel Preparation	Service Provisioning
Innovation Management	Sourcing	Release Planning	Project Requirements Engineering	Opportunity Management	Customer Relationship Management	Technical Support
Resource Management	Business Case and Costing	Product Requirements Engineering	User Experience Design	Marketing Mix Optimization	Operational Sales	Marketing Support
Market Analysis	Pricing		Quality Management	Product Launches	Operational Distribution	Sales Support
Product Analysis	Ecosystem Management			Operational Marketing		
	Legal and IPR Management					
	Performance and Risk Management					
Participation	**Core SPM**		**Orchestration**			

ISPMA SPM Framework (V.2, 2021)



Agenda

0. **Prelude**
   - Participants / ISPMA
   - Intro to training and exam
1. **Introduction and Foundations**

2. **Product Strategy**

2.1 Essentials

2.2 Positioning and Product Definition

2.3 Delivery and Service Strategy

2.4 Sourcing

2.5 Pricing

2.6 Financial Management

Agenda

2. Product Strategy

2.1 Essentials

2.2 Positioning and Product Definition

2.3 Delivery and Service Strategy

2.4 Sourcing

2.5 Pricing

2.6 Financial Management

2.7 Ecosystem Management

2.8 Legal and IPR Management

2.9 Performance and Risk Management

2.10 Business Models

Elements of a Product Strategy (Document)

- Product vision
- Product definition
- Target market and segments
- Delivery model
- Product positioning
- Sourcing
- Business plan summary
- Roadmap (attached)

2. Product Strategy
2.1 Essentials

- Timeframe: between 1 and 5 years into the future
- iterative process to achieve consensus over elements of the product strategy, linked to
- Corporate strategy process:
  ➔ 4. Strategic Management

2. Product Strategy
2.1 Essentials: Interdependence

- High level of interdependence of product strategy elements
- Examples:
  - Internationalization ➔ Product definition ➔ Requirements (cost) ➔ Target markets ➔ Revenue
  - SaaS ➔ Product definition ➔ Requirements (cost) ➔ Legal aspects

➔ Challenge: Consistency across all product strategy elements (on different levels of abstraction)

- On corporate level: interdependence with product strategies of other products and with corporate strategy

➔ 4. Strategic Management

2. Product Strategy
2.1 Essentials: Product Name

2. Product Strategy
2.1 Essentials: Product Name

- Name finding mostly for new product
- Name change for existing product signals radical change like:
  - New platform technology
  - Integration into a product family (often after take-over)

- Major problem: Everybody feels competent
- In general more relevant for B2C than B2B

- Legal clearance advisable
- Help from specialized naming agencies

2. Product Strategy
2.1 Essentials: Vision

High level description:

- Product concept: conceptual image of what the future product will be (where do we want to go?; what is it?; how can the product satisfy the needs of potential customers better than competition?)
- Business model (how can the product be built, sold and supported in a profitable way?).
- Approach (How are we going to do it?; why will we succeed?)
- Covers organisation, product, project

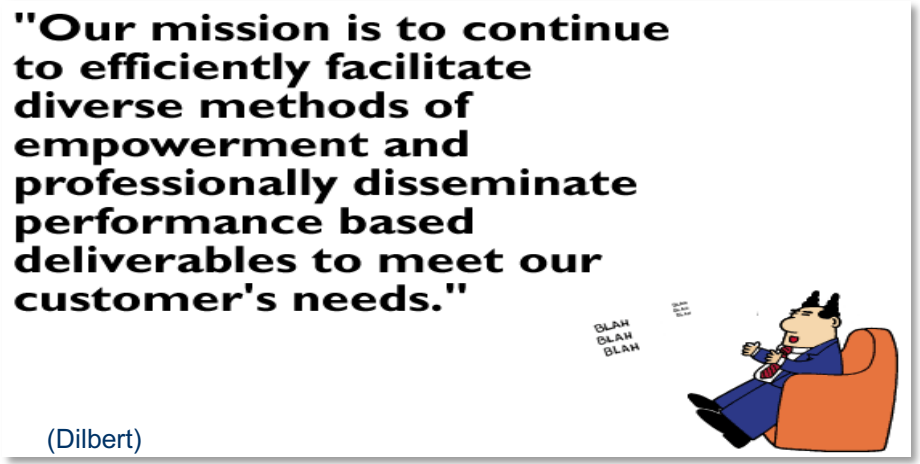
- The other elements of the product strategy provide the details that turn the vision into a manageable and executable path into the future.

McGrath (2000): Product Strategies for High-Tech Companies.

2. Product Strategy
2.1 Essentials: Vision

Example: CRM SaaS

"For a mid-sized company's marketing and sales departments who need basic CRM functionality, the CRM-Innovator is a Web-based service that provides sales tracking, lead generation, and sales representative support features that improve customer relationships at critical touch points. Unlike other services or package software products, our product provides very capable services at a moderate cost."



(Dilbert)

2. Product Strategy
2.1 Essentials: Vision

Example: CA Gen (2007)

In brief, the current drivers of the CA Gen vision include:

- Continued support of J2EE and .NET as these frameworks evolve
- Extending support of Web services
- Infrastructure enhancements
- Integration with CA systems management, security and application life cycle solutions

Our goal is to continue to deliver the core capabilities CA Gen has provided for two decades:

- Platform independence
- Application portability
- Productivity
- Proven Solutions
- 100% code generation of a complete solution

CA Gen is a world-class enterprise application development environment.

2. Product Strategy
2.1 Essentials: Vision

Blackberry (older)

For business e-mail users who want to better manage the increasing number of messages they receive when out of the office, BlackBerry is a mobile e-mail solution that provides a real-time link to their desktop e-mail for sending, reading and responding to important messages. Unlike other mobile e-mail solutions, BlackBerry is wearable, secure, and always connected.

Blackberry (2017)

A connected world.

Amazon (2017)

To be Earth's most customer-centric company, where customers can find and discover anything they might want to buy online.

2. Product Strategy: 2.1 Essentials: Vision Quality vs. Product Success

	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

Lynn, Akgün (2001): „Project Visioning: Its Components and Impact on New Product Success“, JPIM.

2. Product Strategy
2.1 Essentials: Vision

Example: Operating Theater Tracker

2. Product Strategy
2.1 Essentials: Vision

Problem statement

- the problem of — immense effort for reporting consumables
  affects — nurses, respectively the clinic
  the impact of which is — inefficient use of operating theatres
  a successful solution — automates reporting

Position statement

- for — nurses and analysts
  who — administrate, assist in, and improve operations
  the — consumables tracking solution (CTS)
  that — tracks the use of consumables in an operation, enables its analysis, and automates reporting
  unlike — the current manual work
  our solution — increases the efficiency of the operation work and deliver decision-support for consumable planning and improvement

Exercise 2

2. Product Strategy
2.2 Product Definition

- Functional scope: rough functional boundaries
- Quality scope: dependent on type of software and target market
- UX Design scope: dependent on type of software and target market
- Intended use and users: rough description of usage scenarios and user profiles

- Take compliance aspects into account
  (product- and company-specific)

McGrath (2000): Product Strategies for High-Tech Companies.

2. Product Strategy
2.2 Product Definition

- Offering architecture: definition and structure of (separately priced) components of the product (suite, platform) offering, and tailorability options (incl. complete set of components that determine the offering)

- Business architecture (only for application software):
  domain-specific architecture, i.e. a logical data model, process model, business object model, etc.

2. Product Strategy
2.2 Positioning

- Value Proposition: value definition from a customer perspective for the target market segments
- Focus with regard to the target market and segments, the company product portfolio, and the product life cycle phase (e.g. revitalization)
- Channel options
- Partnerships and alliances

2. Product Strategy
2.2 Positioning: Target market (segments)

Questions:

What is the relevant market today? How will it evolve over time?

- Definition (scope)
- Volume
- Competitive products and their market shares
- Segmentation by customers, geography and/or functionality

2. Product Strategy
2.2 Positioning : Target market (segments)

- International markets and their opportunities
  - Country-specific requirements can be more than just language
  - ➔ Make sure that you understand the markets you go after
  - ➔ Input from Market Research and consultants

2. Product Strategy:
2.3 Service Strategy

- Product-related services are part of the total offering (or whole product offering)
  - To be provided by internal unit or external partners

- Certain services need to be supported by product features, e.g. tailorability options

2. Product Strategy: 2.3 Service Strategy: Service Definition

The Webster Dictionary differentiates:

- Useful labor that does not produce a tangible commodity (as in “professional services”)

Human

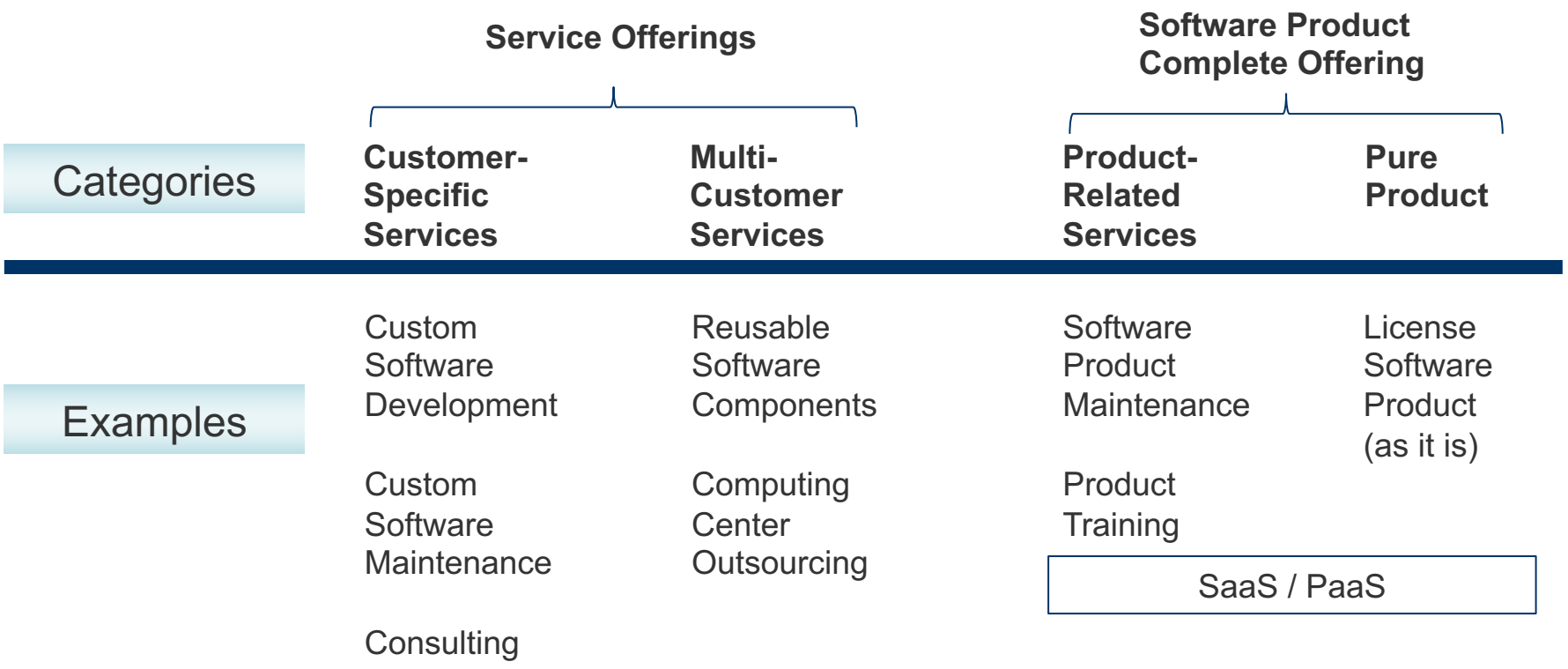
- A provision for maintenance and repair (as in “software maintenance service”)

Human

- The technical provision of a function through a software component that can be accessed by another software component, often over a network and executed on a remote server (as in “web services” or “Software-as-a-Service”)

Technical

2. Product Strategy: 2.3 Service Strategy: Service Product Continuum



2. Product Strategy:
2.3 Delivery Model

Decisions:

- Licensed product (on premise) vs. Software as a Service (SaaS)
- Tailorability strategy incl. degree of tailorability
  (from simple standard to highly customizable)
- Mode of delivery
  (online access, online download, combination with services, etc.)
- Decisions need to be made early since they can result in significant requirements that need to be implemented in an integrated way during the development phase

2. Product Strategy
2.3 Delivery Model: SaaS

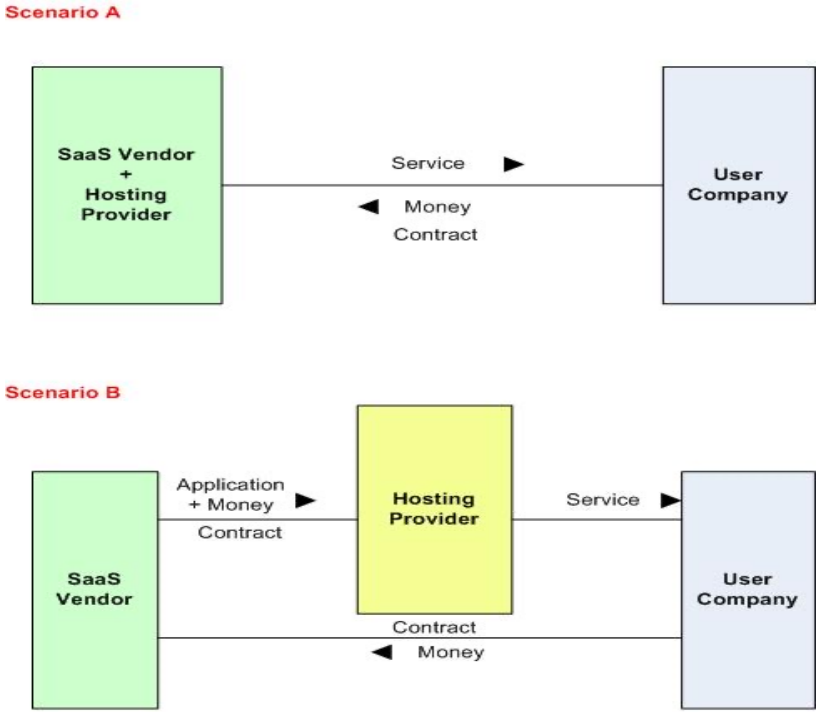
Cloud Computing

- Service and delivery model for the provision of IT components through the internet based on an architecture that enables a high level of scability, reliability, and fine-grained usage pricing.

Software as a Service (SaaS)

- Cloud computing for software.

2. Product Strategy
2.3 Delivery model: SaaS



2. Product Strategy
2.3 Delivery model: SaaS

Drivers

- Drastically improved price/performance of:
  - Network
  - Hardware (processor + storage)
- New architectures and concepts enable new levels of scalability and resource sharing:
  - virtualisation
  - grid computing
  - service orientation
- Internet access „anytime anywhere“
- Vendors‘ interest in smoother revenue curve over time

➔ All the major players are adopting SaaS (SAP, Microsoft, IBM …)

➔ Plus significant new players (Amazon, Google, Salesforce.com …)

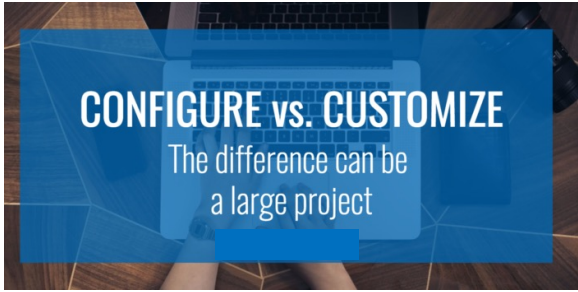
2. Product Strategy
2.3 Delivery model: Tailorability Options

Tailorability:

the enablement of the product for customer- or market-specific adaptations by providing properties that can be changed after system development

Categories:

- Configuration — setting or changing parameters
- Composition — adding or arranging components
- Customization — adding or changing program or descriptive code



- Non-invasive (through standard interfaces)
- Invasive (in the standard code)

Critical

2. Product Strategy
2.4 Sourcing

Internal or external

- Specialists
- Full teams
  - Capacity
  - Cost

Risks for Outsourcer

- Hidden vs. direct cost
- Skills (Life boat test)

Location

- In house
- Near shore
- Off shore

2. Product Strategy
2.4 Sourcing

Make or Buy decision

- For all or part of a product
- To be driven by SPM based on business considerations (time to market, quality, cost, capacity, skills)

In the buy case

- White label approach vs. visibility of partner
- Contract needs great care

2. Product Strategy: Business Plan + Roadmap

Business Plan

- Costing (budget and resource plans)
- Revenue forecast

➔ 2.6 Financial Management

Roadmap

- Bridge between Product Strategy and Product Planning

➔ 3.5

Legal Statement