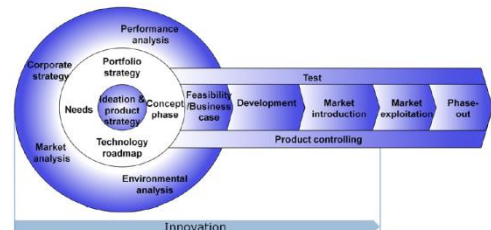


PM terms & definitions



Product = valuable outcome of a business unit's activities → services and goods

- class of produced object with equal properties and production process / comprises services or physical goods of value offered to others that are the outcome of an organization's activities

Product Management = set of activities and responsibilities around an organization's products. Its key targets are to bring the right product successfully into the market and to optimize its marketing up to withdrawal. The **Product manager** is a role within an organization that takes responsibility of product management. The product manager is the "CEO" of a single product or a product portfolio.

Responsibilities of PM



1. **Analyze:** Goal analysis, market analysis, environmental analysis, need findings & analysis, product performance analysis
2. **Plan the product:** portfolio strategy, product strategy, product & technology roadmapping, product feature roadmapping, business plan, marketing requirement management, organizational development plan

3. **Provide the product:** business readiness supervision, project supervision, change request management, obsolescence management
4. **Push the product:** market introduction, product related communication, product promotion commercialization, phaseout management

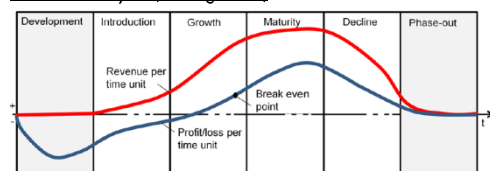
Product portfolio management = find and define the right products for business (bundle of products) / **Product Life-Cycle management** = provide the products efficiently and successfully push products to the market (single core product)

Activities in product portfolio management



Goals of product portfolio management: positioning a bundle of products on a market / dynamic decision process / New projects: evaluated, selected, prioritized / existing projects: accelerated, killed, de-prioritized → focus on making strategic, technological and resource choices that govern project selection and the future shape of the organization.

Product Life-Cycle (management)



Product life-cycle management (PLCM) is the succession of strategies use by business management as a product goes through its lifecycle. The **main goals of PLCM** are: reduce time to market / improve product quality / reduce prototyping cost / identify potential sales opportunities and revenue contributions / reduce environmental impacts at end-of-life

	Introduction	Growth	Maturity	Decline
Marketing objective	Gain awareness	Stress differentiation	Maintain brand loyalty	Harvesting, deletion
Competition	Few	More	Many	Reduced
Product	One	More versions	Full product line	Best sellers
Price	Skimming or penetration	Gain market share, deal	Defend market share, profit	Stay profitable
Promotion	Inform, educate	Stress competitive differences	Remind	Minimal promotion
Distribution	Limited	More outlets	Maximum outlets	Reduced number of outlets

Innovation management overview

Relevance of innovation: Important innovations impact society (invention of longbow/crossbow → downfall of knighthood) / new value creation **boosts business** (investments to new value creation contribute to revenue and profit above average.)

Innovation = essential pre-requisite for on-going success

General characteristics of innovations: novelty, complexity, uncertainty & an ensuring conflict potential / **Innovation as an attribute:** characterized by novelty (new products or procedures) and market penetration (successfully implemented in market) / **innovation as a process:** innovation = invention + development + market introduction / innovation as a process contains the work steps at the early stage of potential recognition and idea creation right up to the proof of evidence of a successful market launch. / **Invention** = prestige to innovation (process of potential recognition, idea- and knowledge creation up to the successful proof of commercial and technical practicability (business case calculation and prototyping).

Innovation engine = approach a company deploys to manage its upstream and downstream innovation activities. Upstream refers to the identification and selection of innovation opportunities. Downstream refers to the development, launch and follow-up of the chosen opportunities.

Characteristics of innovation

increment size: incremental innovation: increase competitiveness in existing markets, low insecurity, using existing knowledge, cost reduction or functional improvements for existing products, development and improved of established products, acquisition of cum. knowledge requires long-term employment contracts, stable career structure, industry-wide trade agreements / **radical innovation:** req. deregulated labour markets and fast access to risk capital, high insecurity, based on new knowledge, results in essential changes which transform whole markets (create new ones), req. sharp disruption of traditional routines, new products with so far unknown characteristics

Radical product innovation takes place in the range of new markets and completely new products/procedures. / **Radical/disruptive technology innovation** especially takes place in the area of combination of emerging technologies with totally new markets.

Innovation approach: idea-driven: ideas are systematically collected from wherever they occur / **research-driven:** ideas are based on directed research activities such as field research and surveys / **analysis-driven:** starts with analysis of the market, environment, own capabilities, visions and strategies

Participation: open innovation: open groups (voice of the customer, lead users, crowd sourcing, open source development) / **networked innovation:** closed groups (joint ventures, co-R&D, topic-specific consortium, open topic consortium) / **closed innovation:** single company (own staff, cultural insourcing of knowledge and workforce)

Customer integration: Chances: gain techn. & market knowledge, easier access to pilot customers, early recognition of demands / **Risks:** effort of cooperation with customers, customer push subjective needs, property rights might be to shared, information passed over to competitors

Positioning in the market lifecycle (+ / -)

First mover → first to market strategy (pioneer position, great uncertainty, bears the most essential part of market development cost, setting standards, large customer base, childhood diseases, bound to initial investments, image, reputation) / **fast follower** → similar offering as pioneer, market still offers many chances / **late follower** → "me too" imitation strategy, market development & customer behaviour are stable, lower prices = more competitive,

Innovation objects → 4 P's = Products (goods, services), Procedures, position, paradigm

How to protect from imitations: set market entry barriers, customer support, customer loyalty, brand → recognition, trust, high quality

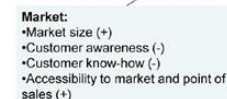
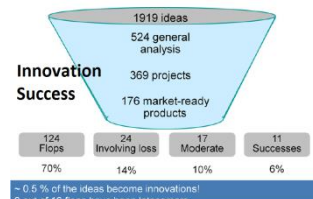
Opportunities, risks and limitations of innovation

Technology leadership: new technologies become strategic success factors which path the way towards new customer- and demand-oriented products and services

Motivation: Company: Reduce costs, increase gross margin & profit, secure company success / **Market:** competitive advantages, differentiation increase revenue, market share / **Society:** keep pace with changes in technology, environment, society

Disruptive technology

innovation: displace currently dominating technologies / are often inferior to established technologies at the beginning, contain the risk of cannibalization, often initiate new business models



What makes innovation happen

Critical success factors: Client user / Organization / Processes / Strategy, plan, / Environment, Deliverables, / Substitution, / Resources, capabilities, infrastructure / culture **preconditions and promoters:** Compatibility with ethical values, Simplicity (easy to use), Testability, Visibility

Culture: "unsupportive culture and climate" is mentioned as the biggest internal obstacle for innovation. **Cultural factors that support innovation:** Trust into employees / high importance of creativity and innovation / well-directed support and promotion of innovative employees / tolerance towards mistakes and failures / adequate information and

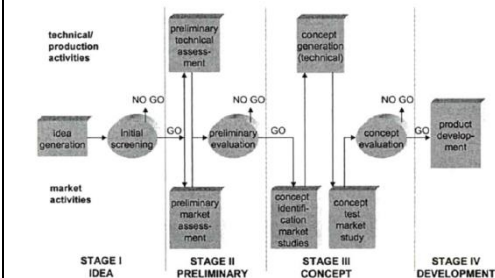
communication behaviour / **Resistance against new ideas:** verbal (contradiction, refutation) or non-verbal (behaviour → start rumors, inactivity, sickness) / "We have already tried that once.", "Everything works well", "You can't do it like this" / **NIH = Not invented here:** refusal of information, decisions and concepts which were developed elsewhere (outside the company) → belief that only successful when all is done inside of a company → mainly undertake in-house innovation activities → cost increase and time delay

Managing innovation

Objectives and tasks of innovation management: overall management of technological innovation includes the organization and direction of human and capital resources toward effectively: creating new knowledge generating technical ideas aimed at new and enhanced products, manufacturing processes and services, developing those ideas into working prototypes and transferring them into manufacturing, distribution and use. / **Tasks of innovation management:** Determine and pursue the innovation goals- and strategies / Make decisions concerning the implementation of innovations, also under economical aspects / Plan, steer and control innovation processes / Create an innovation-promoting organization structure and culture / Install an information system to ensure a quick information exchange to all parties

Activities overview: Invention: Identify potentials, generate, assess, select and prioritize ideas, allocate resources (problems: no time, money, focus, high risk, inefficient, ineffective, no ideas, no big jumps, no feedback, no established innovation culture) / **Realization:** productize, establish structures, develop market, introduce to the market, extend & adapt

Cone of uncertainty: The bigger the content of research and development in a project, the bigger the uncertainty. Uncertainty is reduced during project (narrowed through research). It reaches 0 not before end. **Stage-gate process by Robert Cooper:** Structured staging process with review (GO, NOGO decision at end of every stage)



Product development cycle and minimum viable product: MVP strategy:

find minimal set of functionality that you can bring to market and see how market react → reduce risk, time to market

Human-centred design: process in which needs, wants, and limitations of end users of a product are given extensive attention at each stage of the design process

Market, need and environmental analysis

Customer need analysis

Customer segmentation: Geography (region, size), Demography (age, sex), Psychographics (life style, personality), Behaviour (user status, attitude)

Needs as starting point → better value propositions / risk of producing something nobody asks for is minimized

Deep diving: Look behind the scene! Understand the real motivation, the real need users often don't know themselves or don't explain broadly / **Ethnography = extended user observation:** ethnographic research is a user observational research approach which is applied in the field (expensive and time-consuming, often the sample size is too small, observation influences behaviour)

Empathy mapping: Gains, pains, job to be done → field research: hunt for the basic needs / grounded in a deep understanding of the person for whom you are designing. Empathy Map helps synthesize observations and draw out unexpected insights. /

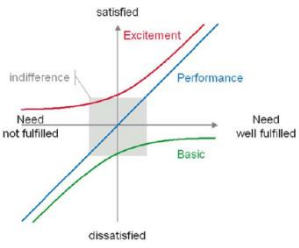
Need Analysis in design thinking: Finding customer needs is one of the most crucial business' activities (Real need → USP → Economic profit) /

Method: identify "who is the user" → persona, identify needs (gains, pains, motivation), design brief, use case scenario

Kano model

Herzberg preferences model: hygiene factors: not fulfilling leads to dissatisfied customers, over-fulfilment is not rewarded / **motivator factors:** customer vales if these are fulfilled (the more the better)

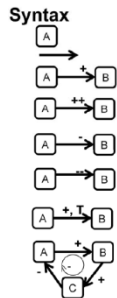
Kano model: developed 1984 by Noriaki Kano and distinguishes customer preferences into five categories. "De quoi s'agit il?" excitement (surprise and delight): provide satisfaction when achieved fully, normally not expected / **performance (more is better):** satisfaction when fulfilled, dissatisfaction when not fulfilled / **basic (must be):** granted when fulfilled but dissatisfaction when not fulfilled / **indifferent:** don't result in either customer satisfaction or dissatisfaction / **reverse (better not be):** result in high degree of dissatisfaction for some people only



Strengths: Popular, can be used with little knowhow and without complex software tools, give indication which factors have highest weight / **Weaknesses:** doubles numbers of questions, keep people motivated to finish survey → doing orally → time consuming for interviewer / **IDs:** **Functional:** If you can (no), how do you feel? → Like, Expect, Neutral, Live with, Dislike

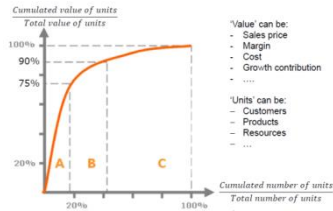
Systemic analysis

Systemic analysis = qualitative approach for modelling complex interdependencies of system elements, leading to a better understanding of cause-effect relations and trends. / **Additive thinking:** Reasons are seen as an additive bundle of arguments / **Pro:** handsome, everyone in firm understands / **Contra:** neglecting dependencies between different factors / **Systemic thinking:** view of interdependent arguments (network of arguments, cause and effect diagram) / **Pro:** consider dynamics and multiple interdependencies between different factors / **Contra:** more complex, heavyweight, hardly unified syntax, difficult to find systems border **Consequence analysis;** Think in networked structures, not just in first order cause-effect relations / include dynamic behaviour (delays, fast and slow responses) / systemic thinking builds models of reality / System can be controlled once understood (but you must know where and how to intervene wisely)



Product performance analysis

Pareto principle (80/20 rule): states that for many events roughly 80% of the effects come from 20% of the causes. Finds appliance in

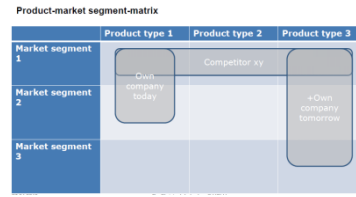


the **ABC analysis** and helps there to separate essential/irrelevant products and as well to identify underperforming products. / Graphical representation = **Lorenz curve** **Pro:** analysis of complex problems with little effort, simple to use and easy to understand, good overview and graph (Lorenz curve), limitation of relevant factors / **Con:** very rough categorization (3 classes), unidirectional orientation on single criterion, qualitative factors not considered, consistent data is precondition

Product portfolio analysis

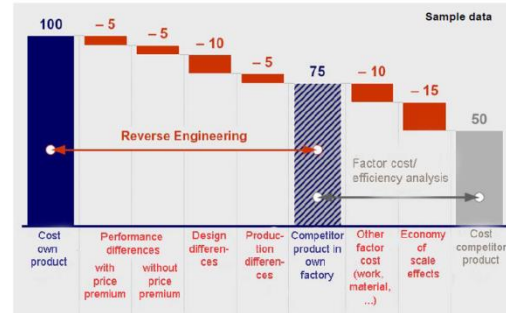
Product portfolio: overview of all products in a company

Portfolio: two-dimensional representation where x-axis represents internal, controllable variable and y-axis represents external, only indirect controllable variable / **Strengths:** support in strategic decisions, get clarity, simple overview of the situation, detect troublesome products, improve communication / **Weaknesses:** simplified representation neglects complex conditions and relations, danger of manipulation (take graph you like most)

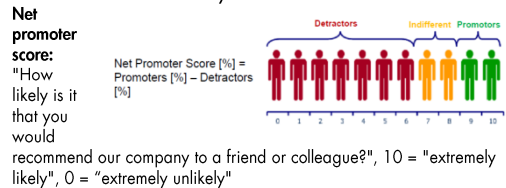


Benchmarking

Benchmarking is the process of comparing one's business processes and performance metrics to industry bests or best practices from other industries. → time, quality, cost / **Internal benchmarking:** between different units of the same organization / **Pro:** availability of data, comparability, low effort, **Con:** limited learning & improvement potential, internal view only, weaknesses common in all dept. cannot be detected / **competitive benchmarking:** between different organizations of the same industry function and market / **Pro:** eval of own position, high efficiency, good learning & improvement potential, **Con:** high effort, details from competitors typically not available, antitrust restrictions limit data exchange, competitors also gain insight / **Functional benchmarking:** between organizations of the same industry functions, but different markets (e.g. logistics telecom vs. logistics healthcare) / **generic benchmarking:** best practice benchmarking, between organizations of different industry functions and different markets / **Pro:** High learning and improvement potential, data more easily available than from competitors, find completely new ideas, **Con:** difficult to find "best in class" organizations, high effort, benchmarks difficult to transfer into results / **Process benchmark;** Identify and observe best practice processes. / **Financial benchmark;** Financial analysis and comparison → assess the overall competitiveness and productivity of the own or competing organizations / **Performance benchmark;** Assess competitive position of products. / **Product benchmark;** Learn from design and marketing of competitor's products (e.g. reverse engineering, price analysis) → improve own products or knowledge of strengths and weaknesses of competitors. / **Competitive cost benchmark**

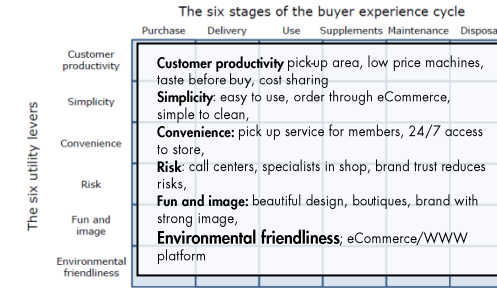


Customer satisfaction analysis



The buyer utility map

Tool to identify and design offering positions that are unique on the market → helps to identify USPs



Product strategy and product plan

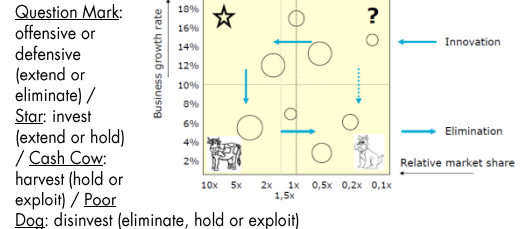
Network buyer effect: Some dealers buying one product also buy the other products, and they only buy the other products if they can get those product from the same supplier. → consider in decision making process, look first what percentage of sales volume max. can be lost due to network buyer effects in order to have at least the same total net margin

Product portfolio management

Purpose of product portfolio management: provide a coherent basis on which to judge which projects should be undertaken, and to ensure a good balance across the portfolio of risk and potential reward.

Norm strategy: portfolio representations always incorporate a simplification of reality → default strategic recommendations, starting point when developing a product strategy, need further clearance

BCG matrix:



Rel. market share: sales of own company in comparison to largest competitor / **market growth rate:** sales growth in a market per time unit / **circle size:** sales

Pro: Market attractiveness and market share are key factors for determination of investment strategies, easy to do, understood by everyone, frequently used / **Con:** market share and attractiveness only is not enough to define a suitable investment strategy, Strategic recommendations not generally admitted and not suitable in every case. In particular situations close to the border lines are not well handled.

McKinsey matrix (9 field matrix)

		Relative product strength		
		Low	Medium	High
Market attractiveness	High	Invest or withdraw	Invest	Invest and grow
	Medium	Skim the market, stepwise desinvest	Observe	Grow
	Low	Desinvest	Skim the market, stepwise desinvest	Skim the market

Pro: broader consideration of relevant factors in the assessment of market attractiveness and product strength, extensive evaluation of the company situation, leads to SWOT, eval of the relative product attractiveness includes competitors' offerings. / **Con:** Data eval more time

consuming than for BCG, some factors may be difficult to evaluate in objective manner, weight factors are not objective, details for ranking are lost in scalar rating and sum-up

Blue ocean product strategy

Value innovation: alignment of innovation with utility, price, cost → find uncontested market space → find new values to the customer

Red ocean strategy: rivals fighting over a shrinking profit pool	Blue ocean product strategy: success in uncontested markets ripe for growth
Competition in the given market.	Invent and create new markets.
Beat competitors through competitive advantages.	Draw aside competition.
Increase market share and optimally exploit demand.	Develop the potential on non-customers.
Direct relationship between benefit and cost. Be either high quality/high cost supplier or discounter.	Break the rule of quality and cost.
Follow either a differentiation or a cost leadership strategy.	Align towards differentiation and low cost.

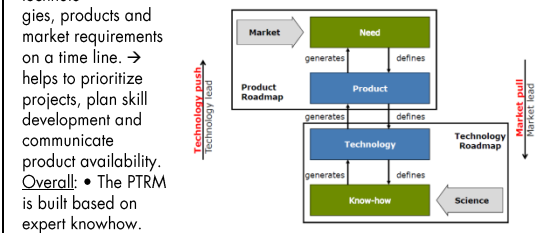
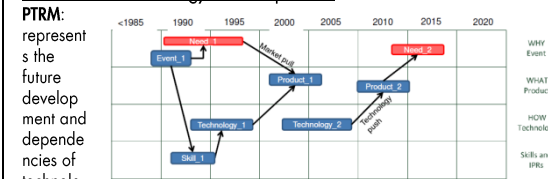
Agile product strategy

Key principles in agile product development: 1. **Product vision:** customer. value propositions, critical needs, how does the product compete, how can money be made, is the product feasible? / 2. **Product owner:** Each new product needs a product owner who has the power to support and guide the product development. / 3. **Entrepreneurial team:** Communicative, empowered, committed, available, qualified / 4. **Organized experimentation:** Plan, do, check, act / 5. **The product roadmap:** Start with the minimum viable product MVP, Incremental releases (with top features and release dates) / 6. **Realization in iterations (sprints).** **MVP:** version of a product which allows a team to collect the max. amount of validated learning about customers with least effort → first product you bring to market should have the least features so you can sell it → go to the market as soon as you can.

Test the product idea: Methods

Design Thinking: user insights and responses based on fast prototypes. 'try often, fail early' / **Standard test markets:** introduce and observe a new product in a regional market through conventional distribution channels. / **Controlled store and minimarket tests:** introduce and observe a new product in a regional market, where the marketing research company has control over the complete distribution channel. / **Electronic test markets (ETM):** like minimarket tests, where the marketing research company additionally is able to collect ongoing scanner-based sales data. / **Simulated test markets:** market simulation in a laboratory with test users.

Product and technology roadmap PTRM



Knowhow gaps need to be identified and eliminated through research **Strengths:** support communication (skills, technologies, products, market events), little effort to build good platform, impact of time shifts is easily understood / **Weaknesses:** no consideration of different scenarios, might mislead to underestimate probability of external events.

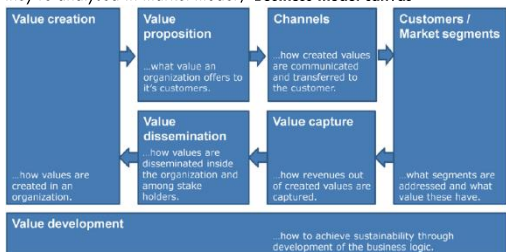
The PTRM must be updated regularly (e.g. once a year in the context of the budgeting process).

Business model

Business model: How does a business work? **Analysis:** Situation analysis, strategy development, business development, competitor analysis,

benchmarking / **Planning**: Business planning, extended product innovation planning / **Communication model**: Internal/external communication

Business modelling is a suitable tool for situation analysis in business strategy development and competition analysis and strategy benchmarking / Competitors are not part of business model because they're analysed in market model / **Business model canvas**



Strengths: reduce complexity, one page view → all key points on one page, easy to use / **Weaknesses**: market & environment analysis is not part of business model → not complete picture, neglect complex relations
Examples: **Value creation**: Layer player, integrator, orchestrator, market maker / partners for distribution | manufacturing, retail network, suppliers, KANBAN, long-term contracts, obsolescence management / **Value proposition**: joyful magazines | shopping, get expertised knowledge, accessories, good feeling, reliable partner / **Channels**: Internet, boutiques, TV, KAM value transfer through agents, call centers / **Customers**: B2B (VARs), B2C (club members, global brand community) / **Value capture**: long-term discount model, up-to-date technology / **Value dissemination**: e.g. VAR contributes most in value creation, therefore gets in exchange % of sales / **Value development**: annual growth by %, growing in B2B, continuous improvement, include all stages in innovation

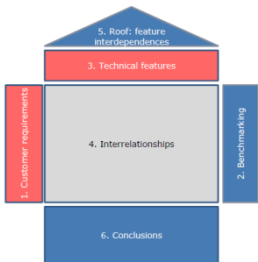
Market requirement specification MRS

MRS describes the functional, qualitative and quantitative requirements the (typical) customer puts on a product → market view
MRS content: System overview, Reference use cases, Requirements (Variants, options and standard configurations of a product, Target price, target cost, Quality requirements and standards, Basic functionality Mechanical design, Maintainability, testability, reliability, Produceability, Interfaces, Configuration and management, Deployment), Design-predefinitions, Documentation, Packaging and distribution / **Reference use cases**: explain the intended application of a product (,where and how') / **Good requirements** are: SMART, designfree, complete, consistent, unambiguous and understandable, correct, atomic (represent a single need), prioritized, justified

ID	Prio	Description	Refcase	Status
1	Must	The <product> shall <do> <what> (<under what circumstances>).	RC1 (why)	Fulfilled

Requirement optimization

CTQ tree = Critical to quality tree: Once customer needs are identified, CTQ trees can be used to translate them into specific, actionable and measurable performance requirements. / **HoQ = House of Quality**: systematic answer to the questions: What does the customer expect / How can an organization optimize its product in order to best meet the customer expectations / **Strengths**: interdisciplinary team development → better support from, different departments, customer focused R&D, good documentation, optimization of technical features considering customer requirements / **Weaknesses**: Complex (especially if there is a larger number of factors to be



considered → focus on priorities!), Rankings cannot always be well justified, Weighting factors arbitrary.

Risk management

Risk is an uncertain event, which, in case it occurs, has negative impact on target achievement. / **Risk management** is the total of institutions, processes and instruments, which focuses on the goal oriented design of the risk situation.

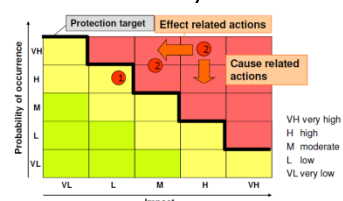
Risk categories:

- Technical**: Technology, Scope & Requirements,
- Complexity, Performance, Reliability, Quality /
- External**: Subcontractor

s, suppliers, Political legal / **Organizational**: Project dependencies, Resources, Funding, Prioritization / **Project management**: Estimating, Planning, Controlling, Communication / **User**: Input, Commitment, Skills, Training

Risk identification: done throughout the life-cycles of a project, although a majority of the risks should be identified early on, so proper response planning and monitoring can occur (SWOT, 5W, Scenario, Cause-effect analysis) / **Risk analysis** may be qualitative (quicker) or quantitative.

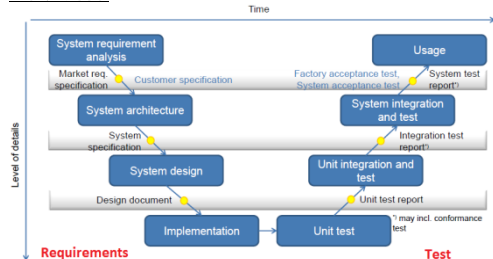
ZHA = Zurich Hazard Analysis:



Response planning: During response planning, strategies and plans are developed to minimize the effects of the risk to a point where the risk can be controlled and managed. Higher priority risks should receive more attention during response planning than lower priority risks.

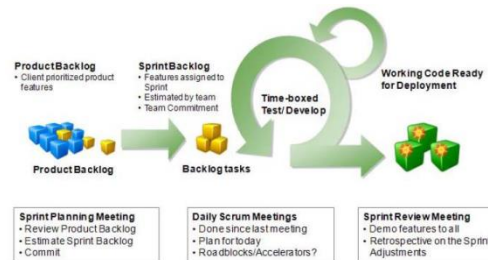
PM in the development phase

The V Model



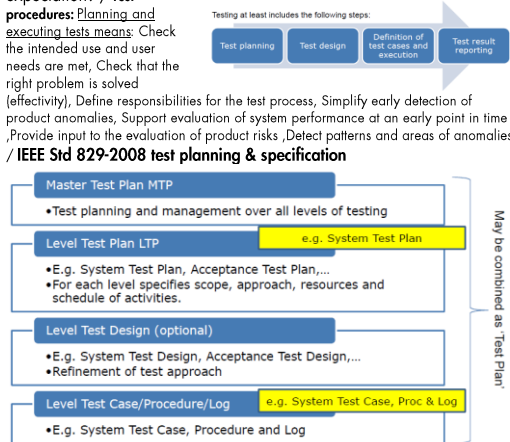
The agile development model

Agile development is iterative and incremental development, where requirements and solutions evolve over time. / **Scrum**: framework for managing SW projects and product development. Focus on "a flexible, holistic product development strategy where a development team works as a unit to reach a common goal" as opposed to a "traditional, sequential approach".



Testing

The sooner you detect a bug, the lower the costs to change / the sooner you introduce a bug, the higher the costs when you detect it in a later stage.
Unit test: test smallest part of implementation / **unit integration test**: Modules combined and tested as a group / **System integration test**: test the automation of aggregated components and the dependencies that exist between them / **Regressive integration test**: add new units and test all you have done until that point / **acceptance test**: test to determine if the requirements of a specification or contract are met / **Alpha testing**: Simulated or actual operational testing by potential users/customers or an independent test team at the developers' site, but outside the development organization. / **Beta testing**: Operational testing by potential and/or existing users/customers at an external site not otherwise involved with the developers, to determine whether or not a component or system satisfies the user/customer needs and fits within the business processes. Often employed as a form of external acceptance testing for off-the-shelf software in order to acquire feedback from the market. / **Type test**: after development phase, once per release, prove construction plan is correct / **series test**: done for every unit produced (e.g. military, very expensive / **Typical product test activities**: **Functional**: typically performed in the last phase of production line, final quality control → quality assurance / **Performance**: speed and effectiveness of something / **environmental conditions**: how product respond to environmental stressors / **safety**: assures that product is safe and compliant to applicable requirements / **stres**: repeatedly bring product towards boarder of specification / **endurance**: product fulfil product life expectation? / **Test procedures**: **Planning and executing tests means** Check the intended use and user needs are met, Check that the right problem is solved (effectively), Define responsibilities for the test process, Simplify early detection of product anomalies, Support evaluation of system performance at an early point in time, Provide input to the evaluation of product risks, Detect patterns and areas of anomalies / **IEEE Std 829-2008 test planning & specification**



Master Test Plan MTP: • Test planning and management over all levels of testing
Level Test Plan LTP: e.g. System Test Plan
 • E.g. System Test Plan, Acceptance Test Plan, ...
 • For each level specifies scope, approach, resources and schedule of activities.
Level Test Design (optional):
 • E.g. System Test Design, Acceptance Test Design, ...
 • Refinement of test approach
Level Test Case/Procedure/Log: e.g. System Test Case, Proc & Log
 • E.g. System Test Case, Procedure and Log

Test plan: define scope, approach, resources, schedule of activities, proof that you did it, can easily be reused when written down / **Test case**: specific executable test, detailed description how to do and results which should be achieved

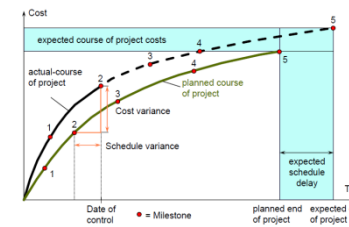
Change request management

Change request: refers to adaptation of originally intended functionality (behaviour or functional extension/reduction) → always impact MRS, can destroy architecture and quality, time & cost impact, communication is important, CR paid by customer (whereas bug fix is paid by yourself)

CR process: Start → Fill in CR → Communicate → Analyse → Offer → Put to product feature map → Communicate
CR document: Header (name, identifier, Project manager, initiator, version), Journal (history), change request specification, consequence analysis (description, recommendation, summary)

Controlling in new product development

Milestone: gate, shows an important achievement in a project (deliverables) and indicates if project is on track at specific point in time (e.g. Priorities set? Cost forecast within budget? MRS approved?)
Monthly progress control (TQC report): periodic (monthly) report and review shall assure the project is on track w.r.t. time (T), quality (Q) and cost (C) aspects. Consists of: 1. Cost overview (Budgeted, to-date, cost to complete, total cost) / 2. Milestones (Planned/Expected) / 3. Changes / Risk management (Resource situation / Cooperation issues / Customer satisfaction / Specific/miscellaneous risks) / 5. Technical progress last month / 6. Request to the management



Time & cost deviation

Market introduction

Product launch plan

Product launch plan	Planning activities
Early in the innovation process	• Confirm key targets (time, cost, quality)
Middle of the innovation process	• Arrange sales training dates • Arrange generation of marketing materials • Plan promotional events • Activate operational units (sales, production, customer support, ...)
At product launch	• Set up risk management for product launch • Updates 4P definition • Plan loading of distribution channels with the new product • Plan metrics for launch control • Explicit go/no go decision / kick-off

Criteria	Yes	No	Comment
Marketing materials complete			
Sales training complete			
Product and/or market tests complete			
Customer service agent training complete			
Operational systems ready			
Analyst briefings lined up and ready			
Events planned and ready			
All risks reviewed			
All business documentation validated			
Channels ready			
Pricing programs (price lists) approved			
Web site ready			
Logistics ready			
Announcement date agreed upon			
Master plan updated			
Review meeting scheduled			
Conclusion: go for launch?			Haines S. (2009), The Product & Me!

innovation process (latest at the beginning of the development phase), detailed in steps throughout the innovation phase and implemented during product launch
 ← launch review checklist:
The launch audit

is a standardized performance evaluation of the launch plan and activities. It's done at the end of the market introduction phase. The launch audit at least covers: Timing relative to targets set in the business plan / Executive support / Synchronization status of business plan and launch plan / Quality and availability of sales and marketing collateral / Sales training / Operational system readiness / Launch metrics / Lessons learned / **Launch metrics**: Forecast vs. actual units sold / Average price compared with plan / Time to first order after launch / Average amount of time to fill an order / Duration of the sales cycle / Percentage of shipments sent on time / Degree to which discounts have to be used / Customer satisfaction ratings

Market exploitation

Overview of PM activities

Situation analysis: understand the product performance, market and tendencies → Do market, environment and competition research, Monitor financial figures (sales, revenue, profitability, etc.), Monitor product

quality and production capability, identify the in-market life cycle state of the product / **Strategic level:** adapt the product strategy → Adapt the value proposition and the marketing mix / Address new market segments / Adapt and plan the product portfolio (incl. services, auxiliary products, new product development,...) / Plan the product investment / Improve product features and services (training, customer support, ...) / **Tactical/operational level:** boost the sustainable product performance → Adequately promote the product, address new customers / Optimize customer loyalty / Optimize operations efficiency, cost structure, margins, sales volumes, distribution channels, upsales / Secure readiness for delivery / coordinate sales planning / Analyze problems, continuously improve and adapt / Manage maintenance activities (PR, CR, Obsolescence)

Obsolescence management

Components relevant to the production chain may become obsolete (not available anymore). Obsolescence messages (end of life announcements) from suppliers typically are handed to the company through the production unit or the supply chain manager. → it's difficult to get those messages from the suppliers...

Problem report management

A problem (bug) refers to promised or naturally expectable features that are not fulfilled by the product. → specs in MRS that are not fulfilled, often covered by warranty (free for customer), customer can rise claims for damages caused by faulty products / problems may have severe damage to a company's image. However, a professional and accurately timed handling of problem reports is even a change to increase image.

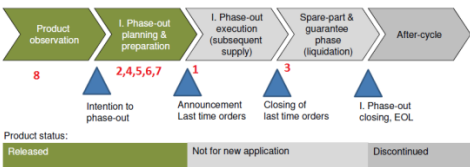


Severity level: Problem severity determines how a problem shall be handled → **Critical** (Relevant functionality is constrained), **Minor** (Use of relevant functionality is not constrained) / **PR document:** Header (name, identifier, product, customer, initiator), Journal (history), problem description, reproduction instruction, problem analysis (description, recommendation, summary)

Phase-out

There is clarity: clear end, clear what, clear responsible, good reason / **Key activities**

1. Product discontinuation notice
2. Analysis of customer feedback and contracts
3. Planning and execution of last production (Last time buy)
4. Product discontinuation document
5. Stock supply strategy for spare-part provision
6. Formulation of scenarios for disposal and recycling of stock
7. Adjustments in documentation and SAP
8. Cost control



Product elimination strategies: Long term skimming strategy (Abschöpfung), Short term cash-flow-generation/ fast sell-off, Immediate stop of all activities
Product discontinuation document (internal planning document), **Content:** Header (Name of product, Date of original introduction, Name of product manager, Name of technical product responsible, Date of this document) / 1. Executive summary / 2. History and chronology of the product / 3. Product description / 4. Related organizational and portfolio impacts / 5. Business assumptions / 6. Financial data / 7. 1. Phase-out plan and schedule / 8. Risks and contingencies / 9. Recommendation / **Product discontinuation notice** informs customer about: Whom the discontinuation notice addresses / Which products, spare parts, services are discontinued / What replacement recommendations can be given (if possible): fit/form/function replacement / Reason for discontinuation / Individual list of customer's purchases of the respective products within last 24 months / Lasttime buy conditions (date, order placement procedure, pricing, acknowledgment of order, delivery conditions) / General terms and conditions, liabilities, warranties

Decision criteria

Criteria for elimination

- Quantitative:**
- Shrinking profits, profit margins
 - Decreasing sales volume
 - Decreasing market share, total market
 - Increasing costs

- Qualitative:**
- Production flaws
 - Inability to continue production
 - Introduction of competitive alternative
 - Bad influence on firm's reputation
 - Changing customer needs
 - Missing features
 - Legal changes
 - Environmental risks
 - Strategy changes

Criteria against elimination

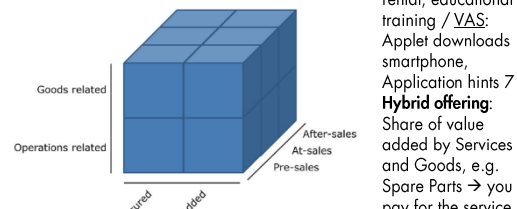
- Product shall attract new customers
- No direct replacement (fit, form, function) possible
- The company temporarily has excessive capacity to continue production and distribution
- Product is made of disposed or recycled products that have no other use
- Image
- Withdrawal could strengthen the competitors / customers cannot be encouraged to switch to another product from own company

Service management

Particularities in service management

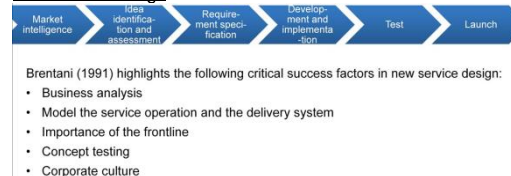
Goods: physical, see & touch (book, pen etc) / **Services:** intangible, provided by other people (haircut)
Differences between services and goods: **Intangibility:** services are more intangible than tangible → hard to build trust, often value communication through substitutes (brochures etc.) / **Inseparability of production and consumption:** services are consumed as they are produced, often in presence of customers or they require substantial interaction with a client / **Variability of the offering:** Services often depend on input from the client, thus the actual service outcome can vary at each purchase occasion → customized, tailor-made, configured / **Perishability:** Services cannot be produced in advance, but must be produced in time the customer asks for it.

Typical services companies: Financial (Banking and Trust, Insurance), Management services (system management services, marketing and advertising, management consulting, accounting), Transportation and communication (Shipping and transportation, communications)
 - Value secured services (VSS) → support the appropriate use
 - Value added services (VAS) → extend the appropriate use
 - Presales (consulting), aftersales, aftersales (claims, spare parts)
Goods related services (GRS): VSS (fitting glasses, warranty, spare parts, loans, Build Operate Transfer, Pre-Financing, (Remote) Maintenance, Configuration / VAS: extension of PLC, modernization, customer specific integration, car tuning / **Operations related services (ORS):** VSS: Consulting, Facility Management, Operation, Pay as you use, Helpline, SaaS, European rental, educational training / VAS: Applet downloads smartphone, Application hints / **Hybrid offering:** Share of value added by Services and Goods, e.g. Spare Parts → you pay for the service



contract (service), but also for every spare part (goods) you get

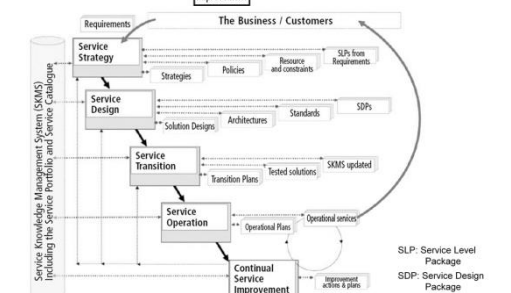
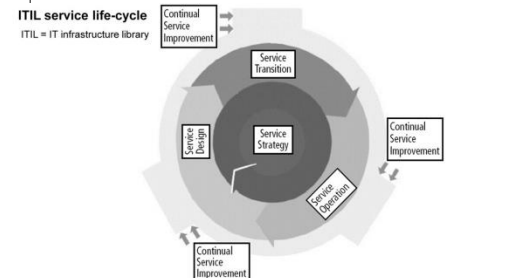
New service design



Brentani (1991) highlights the following critical success factors in new service design:

- Business analysis
- Model the service operation and the delivery system
- Importance of the frontline
- Concept testing
- Corporate culture

Success factors in new service design: 1. have a detailed/formal service design process in place / 2. make use of overall corporate synergies / 3. assure market competitiveness / 4. assure service is attractive / 5. provide expert based services / 6. provide equipment based services / 7. service innovativeness / 8. service quality evidence / 9. service newness to the supplier / 10. effectiveness of new service design mgmt. / 11. service complexity/customerness / 12. quality of service experience / 13. standardization of service process / 14. market newness to the supplier / 15. specialized initial market / 16. responds to the demand cycle / 17. market segment adjustment



Key elements to improve serviceability: Early inclusion of service related produce requirements into the product lifecycle / standardized remote access capability / documentation and knowledge database / ability to migrate to system updates and upgrades / standardize serviceability requirements / service mindset within the organizations

Service Analysis

Environment	Customers, users, needs	Organization	Process	Strategy, plan	Benchmark
ABB Turbo Systems as market leader	- Equipment on open sea - MTTR is critical	- global service network - service business separate from new product business	- processes optimized to service tasks - continuous product improvement (CPI) - short lead and delivery times	- cost leadership - highest quality - short lead and delivery times	
	Value proposition, deliverables - product portfolio: turbo chargers (misc. types for navy, stationary and traction) - service portfolio: OPAC (price per operating hour), MMA (facturing per case), CPEx (exchange program), EoL (2nd hand replacement parts with warranty), training courses - 724 worldwide service offering	Resources, capabilities, infrastructure - aturb/web (installation database, maintenance planner), DSA (parts database) - Replacement parts center Baden	Culture - Commitment to excellent service execution		

Service concepts

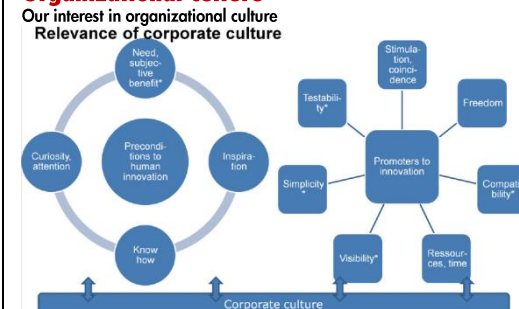
Mult-tiered technical support: **Tier / Level 1:** support basic customer issues (gather customer's issues, simple repair, preventive maintenance) / **Level 2:** support advanced customer issues (problem analysis and fixing based on known solution strategies) / **Level 3:** fixing issues where the solution strategy is unknown in advance, support often

done by the product development team. / **24/7 service:** service available 24hrs a day, 7 days a week / **Hotline service:** Telephone service, often as Service entry point / **Onsite support:** Service provision at customer's site / **Remote service:** service provision from outside customer's site, typically from supplier's site, eliminating travel expenses and time / **Preventive maintenance:** Maintenance of wear parts according to a predefined maintenance schedule / **Return and repair service:** defective parts are replaced or repaired by the supplier as soon as physically received at supplier's site. Supplier has choice to return a replacement part out of his own stock or to repair the defective part and return it afterwards / **Repair stock:** stock of spare material kept at supplier's or customer's site in order to shorten repair times. / *aaS: as a service, not licensed to the customer or owned by the customer, but the customer pays for the service to make use of it → leasing / **E-Service:** usually referring to provision of services via WWW
SLA (Service Level Agreement): negotiated between two parties / records a common understanding about services, priorities, responsibilities, guarantees and warranties / commonly include segments to address: definition of services, performance and problem management, customer duties, warranties, disaster recovery, termination of agreement

Outlook

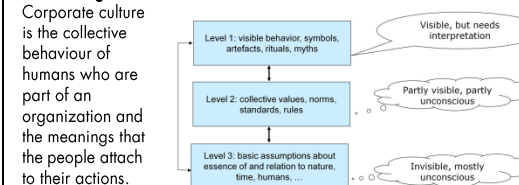
Smart Products: Extension of products with IT and communication capability improves knowledge of product use and supports new business models → intelligent car initiative (avoid accidents and reduce damages, avoid traffic jams, optimize choice of transportation means, reduce emission) / **Product-Service Systems (PSS):** typically improve sustainability of a service and thus reduce resource usage

Organizational culture



Hawthorne effect: form of reactivity whereby subjects improve or modify an aspect of their behavior being experimentally measured simply in response to the fact that they know they are being studied, not in response to any particular experimental manipulation.

What is organizational culture



Test the Product Idea on the market (Methods): **Design Thinking:** user insights and responses based on fast prototypes. 'try often, fail early' / **Standard test markets:** introduce and observe a new product in a regional market through conventional distribution channels. / **Controlled store and minimarket tests:** introduce and observe a new product in a regional market, where the marketing research company has control over the complete distribution channel. / **Electronic test markets [ETM]:** like minimarket tests, where the marketing research company additionally is able to collect ongoing scanner-based sales data. / **Simulated test markets:** market simulation in a laboratory with test users.

Severity level definition (example):

Impact	Very low	Low	Moderate	High	Very high
Objective					
People safety	slightly insured, at most patch required	Insurance without medical care, few days reduced capable of work	Insurance with medical care, few days incapable to work	Slight remaining damage caused to health	Death or severe remaining damage caused to health
Cost	Insignificant cost impact	< 10% cost impact	10-20% cost impact	20-40% cost impact	> 40% cost impact
Schedule	Insignificant schedule impact	< 5% schedule impact	5-10% schedule impact	10-20% schedule impact	> 20% schedule impact
Scope	Barely noticeable	Minor areas impacted	Major areas impacted	Changes unacceptable	Product becomes useless
Quality	Barely noticeable	Noticeable, but relevant functionality ok	Main functionality ok	Main functionality not ok	Product becomes effectively useless