



Product Management for IT and Software

Mini-Tutorial, 09. Sep. 2008

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V1.0 2008-09-09



Instructor: Dr. Christof EBERT

Christof Ebert is managing director at Vector Consulting Services. He is helping clients worldwide to improve their product development.

Prior to that, he held engineering and management positions at Alcatel for more than a decade, most recently as Director of Engineering, with global responsibility for software platforms, engineering processes and tools.



A senior member and distinguished visitor of IEEE, Dr. Ebert authored several books. He lectures at University of Stuttgart and serves on editorial boards of several journals and as a frequent keynote speaker at conferences.

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Consulting Competence evolution

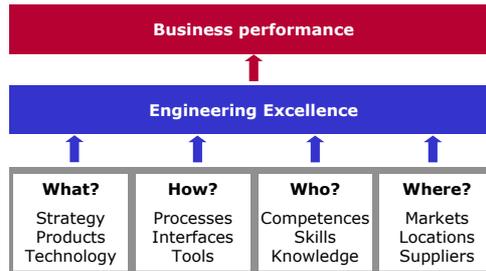
- ❑ CMMI, SPICE
- ❑ Efficiency improvement
- ❑ Safety and security
- ❑ Engineering methodology
- ❑ Project / product management
- ❑ Change management

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What is a Product?

- ❑ A deliverable which creates a value and an experience
- ❑ A bundle of benefits: Customers don't buy products, they seek to maximize benefits
- ❑ Can be a combination of systems, solutions, materials and services delivered as is or as a component for another product



Goods



Skills



Services



Ideas

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A Look to a Winning Product

The iPod is a portable MP3 player with appealing design, a proprietary file format and a secured supply chain for content and payment.

Its business model is based on continuously updated fashionable devices which are cult to very different persons plus a premium for content downloads.

It is not about innovative technology but about improving of what is already around (MP3 player, content management).

It was primarily marketing that redefined an already existing market with many incumbents

Profits are immediately used to innovate the product and thus generate new needs in short timeframes.

Basic features remain unchanged, but products and appearance rapidly innovate (design changes, size, music → video)



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The Reality: Product Development As We Know It

"Competition already has it."

"My customer won't buy unless it's red."

"We Need it NOW!"

"Today markets demand SOA and OSS."

"Reduce cost!"

"It's exactly these 17 features. Trust me."

"My customer won't buy unless it's blue."

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It isn't that they can't see the solution.

It is that they can't see the problem.

Gilbert Keith Chesterton

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Benchmarks: Too fast, wrong direction

- ❑ Top 20% of enterprises deliver 79% of new products in time. Average delivers only 51% of projects in time. (Cooper, 2004)
- ❑ 29% of IT projects successful. 18% of projects completely failed. (Chaos Report, 2004)
- ❑ Only 52% of the originally committed requirements appear in the final product. (Chaos Report, 2003)
- ❑ Typical requirements change rate is 1-3% per month. Beyond 20% total change rate in a single project, productivity decreases rapidly. (Ebert, 2007)

Sources: Ebert, C. and R. Dumke: *Software Measurement*. Springer, New York, Heidelberg, 2007. Standish Group 2004; study with 10000 Projekten per year, 58% in USA; 45% Fortune 1000; ca. 50% NPI.
Cooper, R.G. et al: *Benchmarking Best NPD Practices: Research - Technology Management; Part I: Jan. 2004, pg. 31, Part II: May 2004, pg. 43; Part III: Nov. 2004, pg. 43. Accessible via: www.apqc.org.*

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Reasons for Failure

Bermuda Triangle of ...

- ❑ Sales
"Sell today and cash in the bonus – agree it tomorrow."
- ❑ Marketing
"We know what our customers want! We told 'em so."
- ❑ Engineering
"If the others would just be quiet. Our technology will sell itself."
- ❑ Product management
"I am the only one understanding all details – and that's how it should be."



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Why Product Management?

- ❑ The **success** of any product depends on skilful and competent product managers.
- ❑ Product management means **assuring a winning business case**. It includes strategy planning, requirements development, release planning, lifecycle management and leading an effective multi-functional product team.
- ❑ **Product management is complex:** There are many stakeholders, many responsibilities, tons of information to gather and analyze, and no formalized education or body of knowledge.
- ❑ Our ambition:
Evolve product management towards a discipline in its own.

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Challenges in Product Management

- ❑ Unclear role and responsibility
- ❑ Heterogeneous and undefined relationships with other functions
- ❑ Insufficient strategic alignment
- ❑ Objectives rarely agreed and understood
- ❑ Variety of ad-hoc decisions
- ❑ Lack of methodology to systematically derive a sellable solution from an innovation
- ❑ Firefighting on project and release level
- ❑ Inadequate operational execution: timelines, milestones, commitments, processes

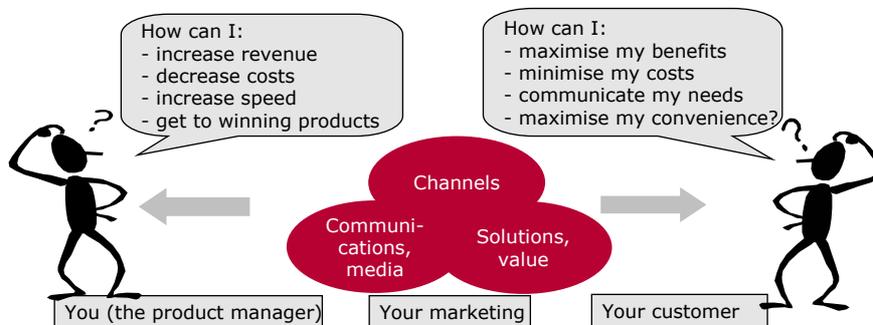


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Let's Start: Product Management and Marketing

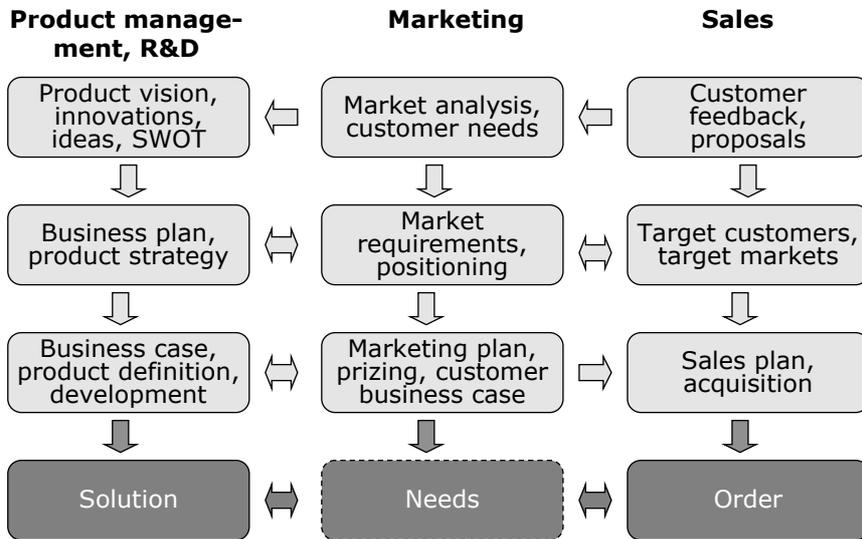
- ❑ **Product management** is the discipline and business process which governs a product from its inception to the delivery and service in order to generate biggest possible value to the business.
- ❑ **Marketing** is the discipline with its functions and processes that evaluate and improve the enterprise and its market position as perceived by the market.



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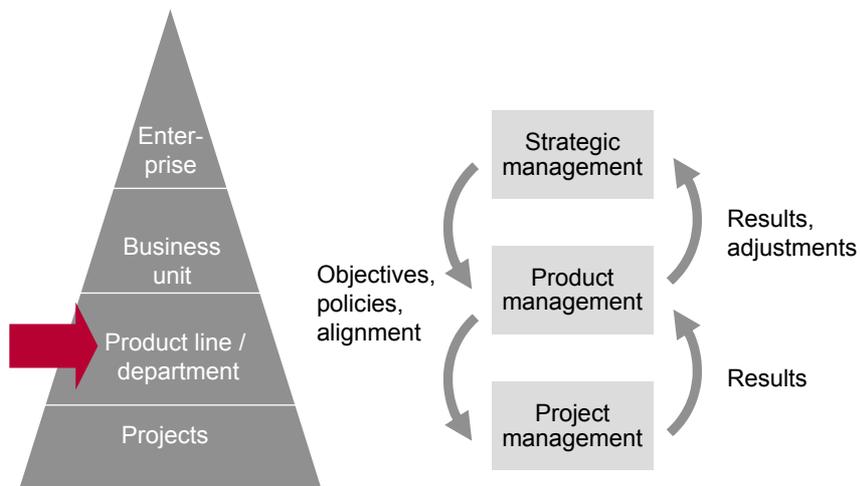
Winning Products: Different Forces Cooperate



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Product Management in the Enterprise



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Product Management Responsibilities

The product manager is **responsible for strategy and results**.

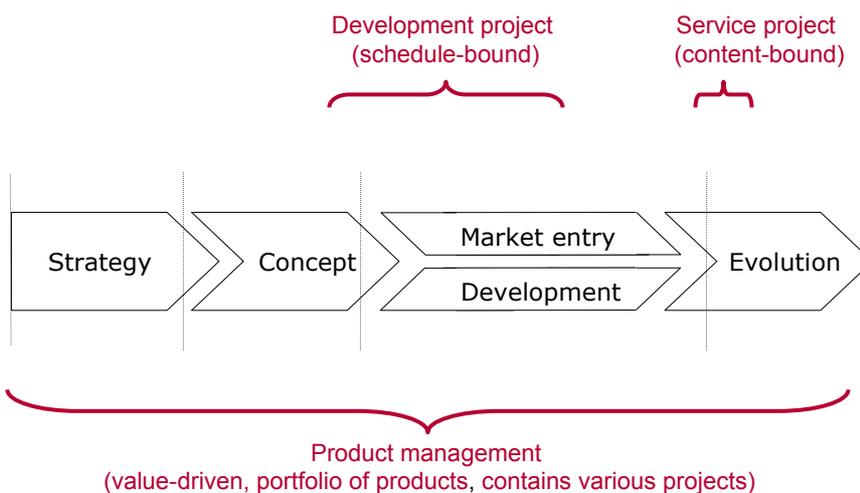
→ "Embedded CEO"

- Accountable for definition, development, marketing and service of a product
- Understands customer needs and markets and positions the product accordingly
- Defines the business case, gets money to invest and delivers a ROI.
- Launches projects which deliver the committed results.
- Positioned in middle management with strong strategic and operational skills.
- Reaches his objectives without direct line responsibilities.

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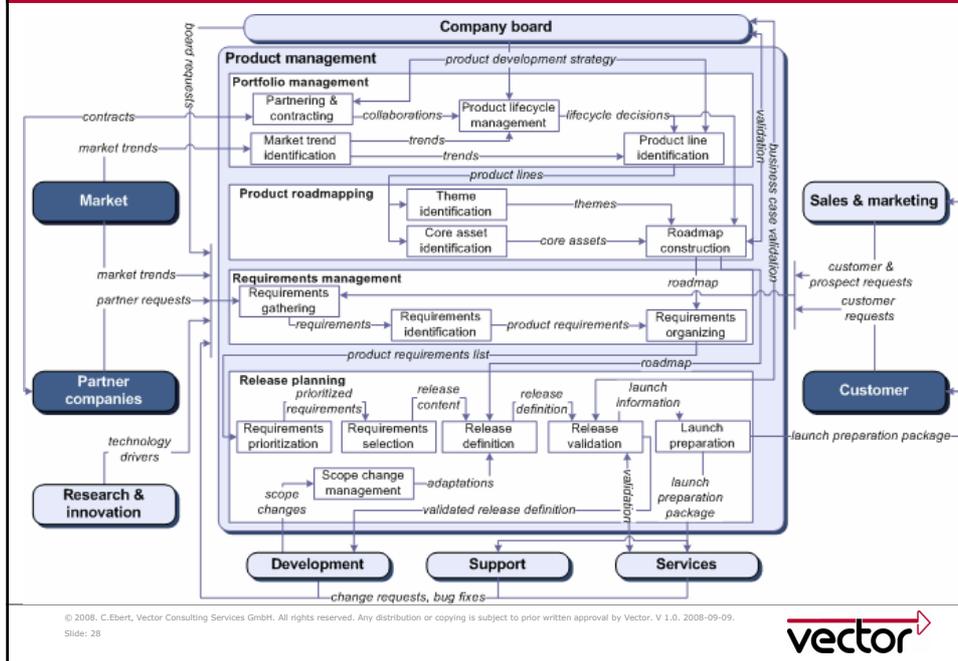
Product Management and the Product Life-Cycle



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Product Management Reference Framework (Work in Progress)



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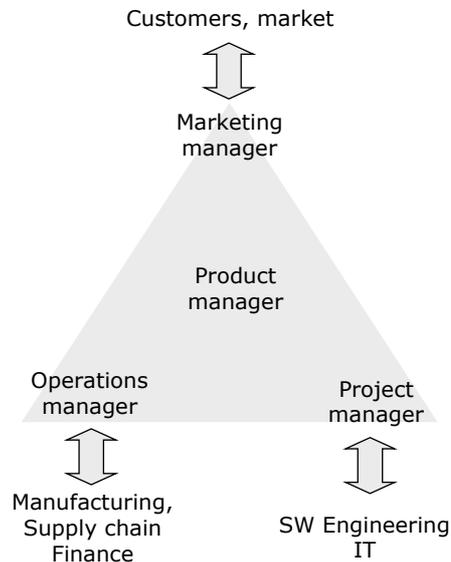
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1. Establish an Empowered Core Team

The core team is fully responsible for definition, development, launch and evolution of the product.

It comprises four roles:

- ❑ Product manager (responsible for business case and overall profitability)
- ❑ Marketing / sales manager (responsible for revenues)
- ❑ R&D / project manager (responsible for development project success)
- ❑ Finance / operations manager (responsible for allocating appropriate resources)

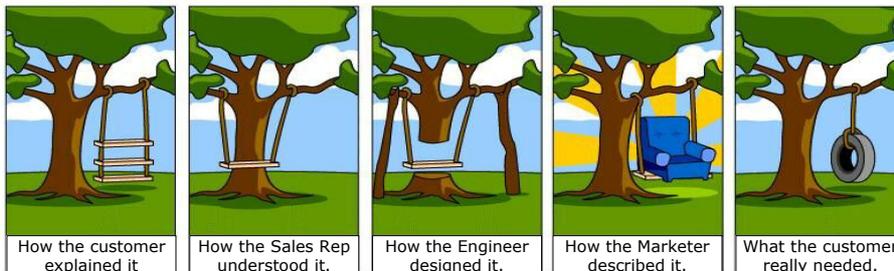


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2. Understand Your Customer

- ❑ Develop customer orientation in all functions – top down. Ensure that every function understands that they are there to serve the customer, not their own narrow functional interests.
- ❑ Organize in cross-functional teams around customer groups. Use various channels to obtain market understanding
- ❑ Take the time to listen and understand the customers' business.



How the customer explained it

How the Sales Rep understood it.

How the Engineer designed it.

How the Marketer described it.

What the customer really needed.

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3. Create Needs

- ❑ Segment needs according to user profiles. There is no stable set of needs, but a dynamic evolution.
- ❑ Closely combine marketing and R&D in the problem definition process (e.g., market studies, prototyping, test markets)
- ❑ Co-create value together with the customer.
- ❑ Don't talk about solutions before understanding needs.
- ❑ Sell a concrete vision and how it will materialize to benefits. Don't sell technology. A product is a means to an experience.

A mini van?



NO!
Family
Safety

A sports vehicle?



NO!
Fun
Way of living

A pick-up truck?

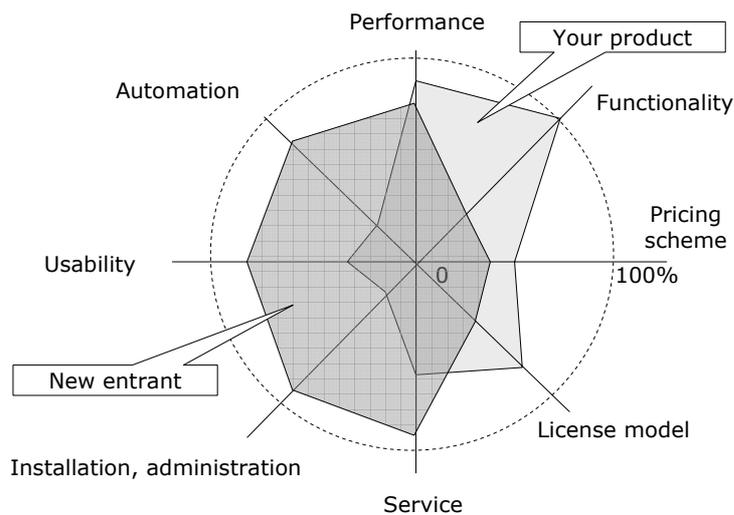


NO!
Adventure
Independence

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4. Understand Buying Criteria



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5. Define and Deliver Value

- ❑ Target a differentiated product with unique customer benefits and superior value for the customer.
- ❑ Explicitly define and frame what you call "product superiority". Include it as a formal criteria to the decision reviews.
- ❑ Define the product early and precisely: target market, concept, positioning, requirements, customer business case.
- ❑ Capture different perspectives on value (e.g., money, functions)
- ❑ Use the customer business case as the benchmark for success.
- ❑ Make customers the arbiter of quality.
- ❑ Design to value.
- ❑ Avoid the trap of faster and cheaper. Take a share of resources to innovate rather than only low-cost mediocre incremental projects.



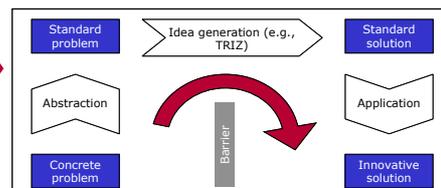
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6. Manage Innovation

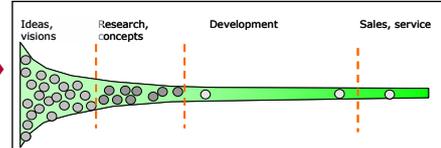
Idea generation

- ❑ Brainstorming
- ❑ Research
- ❑ Problem solving techniques



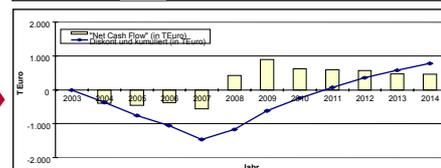
Idea evaluation

- ❑ Clear criteria
- ❑ Feedback to originator



Business assessment

- ❑ Discounted cash flow
- ❑ Payback period
- ❑ ROI

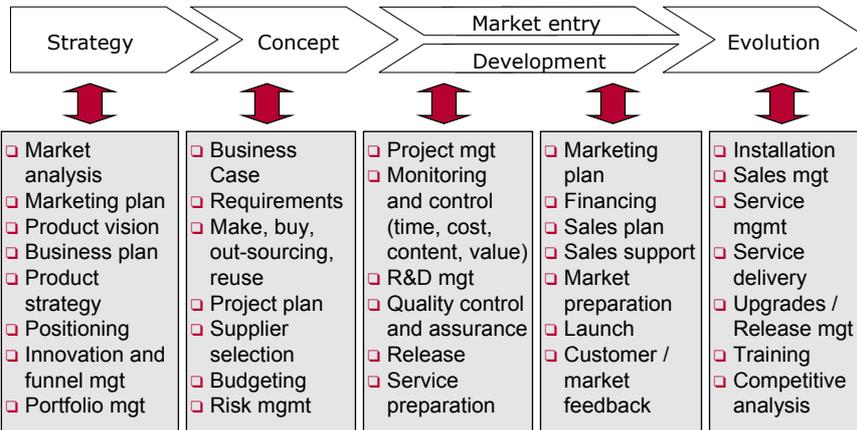


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7. Ensure Operational Excellence

- ❑ Establish clear processes that are systematically applied
- ❑ The process is not an end but a means. Keep it adaptive, agile.

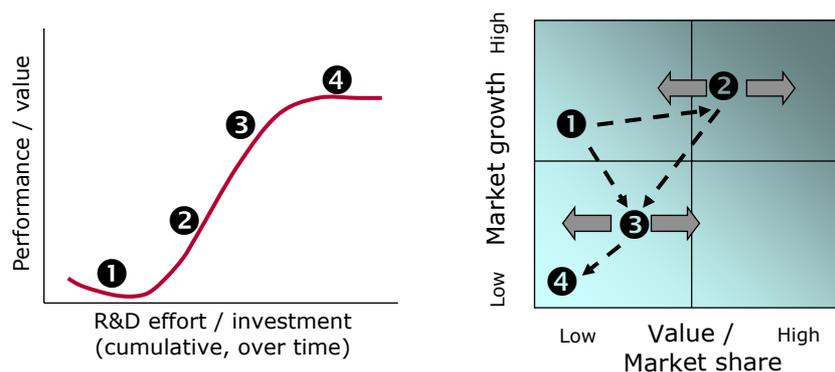


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8. Understand Technology and its Impact



1. Experiments (learning, investment, no payback, go/no-go)
2. Growth (value is growing fast, market positioning, invest)
3. Saturation (adapt / reduce investments, cash in profits)
4. End of life (high maintenance, decide / communicate end of life)

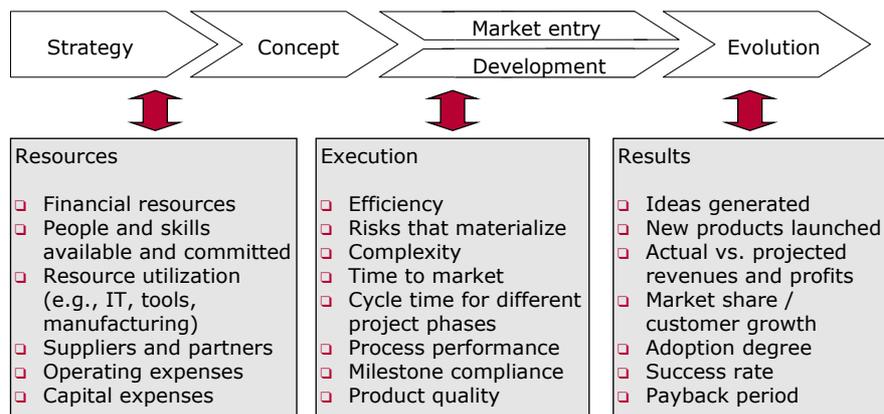
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9. Monitor and Learn from Results

- ❑ Periodically measure and compare to expectations
- ❑ Conduct post launch audits of past projects and fix your process

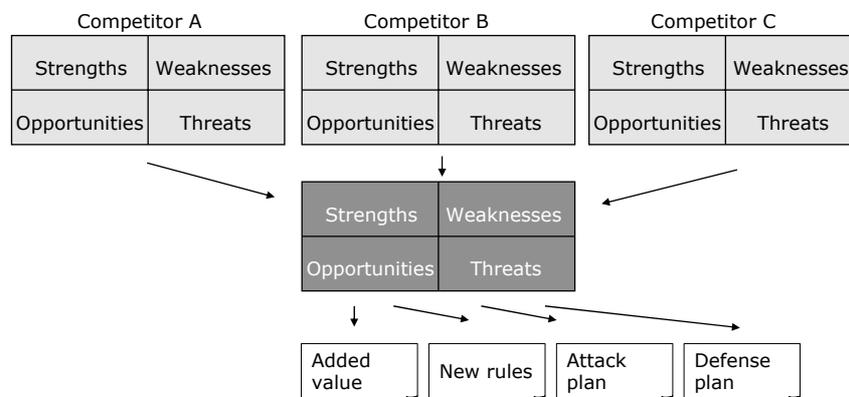


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10. Never be Satisfied

- ❑ Continuously question the value of your products as perceived by your customers.
- ❑ Perform and update your own SWOT for the product or product line



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Systematically Growing the Product Management Competence

Field study

- ❑ Major supplier of communications solutions.
- ❑ Product management had been formally introduced by building the competence, training, coaching and carefully reviewing progress. Introduction happened per business division but always following the same 3-phase approach.
- ❑ This study takes result from the first business unit that had fully finished this introduction process. Data taken from project and PLM reporting to the corporate history database.

Approach

- ❑ Phase 1: Agree roles and responsibilities
- ❑ Phase 2: Prepare and pilot
- ❑ Phase 3: Institutionalize

Details: Ebert, C.: *The Impacts of Software Product Management. The Journal of Systems and Software. 2007.*

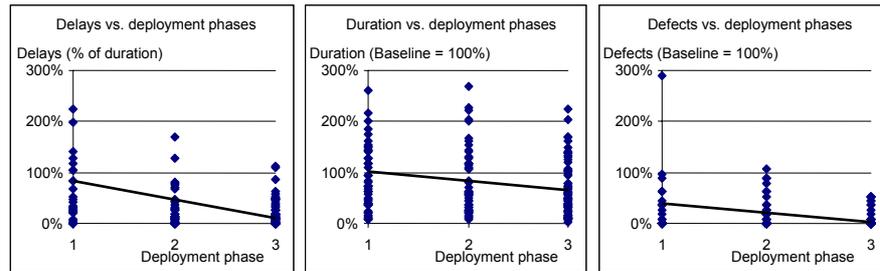
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Competence Growth: Data Points

Prod. mgmt. introduction phase	# Pro-jects	Min size [PY]	Max size [PY]	Average delay	Average duration	Average defects
1	47	0.1	346	100%	100%	100%
2	55	0.1	84	25%	87%	30%
3	76	0.1	91	15%	64%	18%



Source: Data from 178 industry projects from telecommunication industry over a period of three years throughout which the product management role and competency was defined, deployed and improved.
 Note that the graphs show regression lines based upon least squares and not averages.

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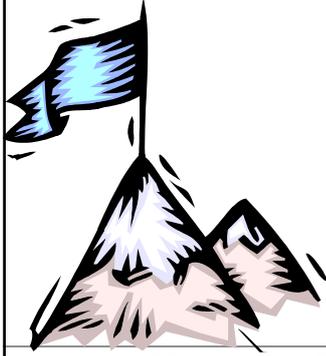
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Product Management Success Factors



1. "Embedded CEO" – empowered, agile, accountable
2. Value-driven strategy
3. Enthusiastic on own product
4. Good understanding of markets, customers and own portfolio
5. Contribution is measured on sales (top-line) and profits (bottom-line)
6. Assumptions are periodically checked
7. Risks are taken and managed
8. Life-cycle management
9. Process and operational excellence
10. **Be professional**

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Further Information

- ❑ The software product management community was established in 2006 to build the competence and growing the discipline.
- ❑ Current focus is on defining a reference framework (public domain) and sharing best practices.
www.cs.uu.nl/wiki/bin/view/Spm/WebHome
- ❑ The International Workshop on SW Product Management (IWSPM) is our vehicle for networking and exchange of ideas. The third IWSPM will be in 2009 (probably in conjunction with RE-09 in Atlanta, USA).
www.cs.uu.nl/groups/OI/IWSPM/
- ❑ URL and mailing list
www.product-manager.org

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Thank You.

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