

Employee development in the automotive industry – a practical example out of the field of product management

A Master's Thesis submitted for the degree of
“Master of Business Administration”

supervised by

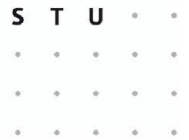
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Affidavit



I, **HERWIG JÖRGL, M.Sc.**, hereby declare

1. that I am the sole author of the present Master's Thesis, "EMPLOYEE DEVELOPMENT IN THE AUTOMOTIVE INDUSTRY – A PRACTICAL EXAMPLE OUT OF THE FIELD OF PRODUCT MANAGEMENT", 82 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

Graz, 9th of February 2013

Signature

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Abstract

The main objective of the thesis was to analyse the current employee development process in the field of product management in the company AVL. Within the theoretical section of the thesis the definition of product management in different industries was investigated followed by organizational integration forms and how product management is defined in the company AVL. The practical part concentrates on an inquiry of the status quo by means of a survey regarding training methods, satisfaction of respondents with current training approaches and responsibilities in product management. The final analysis of the results concentrates on how product managers and their supervisors understand the several challenges and if business unit specific training needs exist. Most of the initial hypothesis could be proven during the research and finally valuable proposals for improvement including segmentation into different stages of product management were given.

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Abbreviations

DCG	Digital Configuration Guide
GDP	Gross Domestic Product
OEM	Original Equipment Manufacturer
PIM	Product Information Management
PIP	Product Innovation Process
PM	Product Manager
ROI	Return On Investment
SME	Small and Medium Enterprises
SWOT	Strength Weaknesses Opportunities Treats
USP	Unique Selling Proposition
URS	User Requirement Specification

1 Introduction and literature review

1.1 Background of the problem

AVL the world's largest privately owned company for development, simulation and testing technology of powertrains performed very successfully in recent years. Due to the tremendous growing pace of the company, the way people work together internally and externally changed. On the one hand new business fields opened up, but on the other organizational development couldn't follow the before mentioned pace. These facts underline the need for refining existing processes like the employee development process. AVL has implemented such processes for several job areas, exemplarily the product management field. Nevertheless the boundary conditions changed and in this specific field improvements are necessary. Within this thesis the actual situation of product management development within AVL will be investigated, possible areas of improvement identified and proposals for future training concepts and job segmentations given.

1.2 Significance of the problem and research motivation

Since the last 8 years the researcher had a lot of opportunities gathering experience in the field of product management. First he worked as an assistant to the product management beside his studies for almost two and a half years, followed by the role as a product line responsible or group product manager for three and a half years and finally as a supervisor for a team of product managers for the last six months. So all in all various viewpoints could be captured during this time and specific needs in the field of product management identified. According to his personal experience and feedback from direct and indirect colleagues, this business environment is one of the most challenging positions within the company AVL. Beside the established required competencies like a grounded technical knowledge base and some marketing experience much more skills are mandatory: communication, teamwork, self-management, tenacity and finally leadership. In fact these are quite a lot competencies for only one person and the perfect training approaches should be applied.

After the researcher attended the standard product management training, the transferred messages weren't completely clear to him and many important points were missing. This circumstance gave him the idea to further investigate the topic,

point out where the gaps are and what improvements could be applied to better prepare especially young, inexperienced people in this field.

1.3 Objectives

For a structured execution of the master thesis the aims were divided in one main- and four sub-objectives.

Main objective:

- Analysis of the current product management development process including proposals for improvements.

Sub-objectives:

- Analysis of the training approach in terms of teaching methodology, contents and timing/duration.
- Investigation of business unit specific training requirements.
- Analysis of the respondents individual view compared to the view of their supervisors.
- Capture respondents ideas for improvement.

1.4 Hypotheses statements

After reviewing the literature and mainly based on personal experience of the author following hypotheses could be identified.

- Product Management training does not reflect entirely what's needed on the job.
- Product managers are often overstrained with internal and external interface management.
- Supervisors see the task and roles of a product manager differently than the product managers itself.
- Training requirements differ from business unit to business unit.
- Leadership practice and management skills as essential parts are not included in the current training approach.
- Career paths respectively development plans are not completely visible which could lead to movement of labour respectively fluctuation.

How the hypotheses correlate with the real situation within AVL will be proven at the end of the thesis within chapter 3.5.

1.5 Definition of Product Management

There are various definitions of product management existing, one of the most incisive ones was mentioned by Marty Cagan [2]¹. He said the role of a product manager is to discover a product which is valuable, feasible and usable. In other words when the product idea isn't the right one, engineers, designers and managers will waste their time when the product doesn't meet the customer expectations.

The concept of product management was invented by Procter & Gamble in the year 1927. In the following years product management was more and more established in the consumer goods industry. Also other branches took over the conception and nowadays product management is a widely used management concept. Even SME's start more and more to implement product management in the recent years, despite scarcity of resources. [1]²

Product Management is a management concept which concentrates on the necessity of functional and cross functional steering and coordination of products or product groups. Complying with the existing vertical structures (functional structuring) the product management has to establish a horizontal structure (product oriented structure). As a result a matrix organisation arises which is characterized by functions/areas and products/product groups. Consequently the product management steers and coordinates all product relevant topics from supply chain management till sales and marketing. As a product specialist the product manager represents an interface for all information, coordination and steering areas in and outside of an enterprise. [1]³

Martin Eriksson, chief product officer at Covestor, describes product management as interaction between business, technology and user experience – a graphical view on this can be seen in the next picture. A “good” product manager should have at least experiences in one field and should be passionate about all. As business function, product managers should maximise profits together with ROI. In the technology field product managers must interact with development as much as possible to understand the efforts for new developments which results in an

¹ Cagan Marty (2008): How to create products customers love, p. VII

² Aumayr Klaus J (2006): Erfolgreiches Produktmanagement, p. 12

³ Aumayr Klaus J (2006): Erfolgreiches Produktmanagement, p. 16

understanding of the risks of false decisions. Finally the product manager is the voice of the customer and brings back the user experience to development. [8]⁴

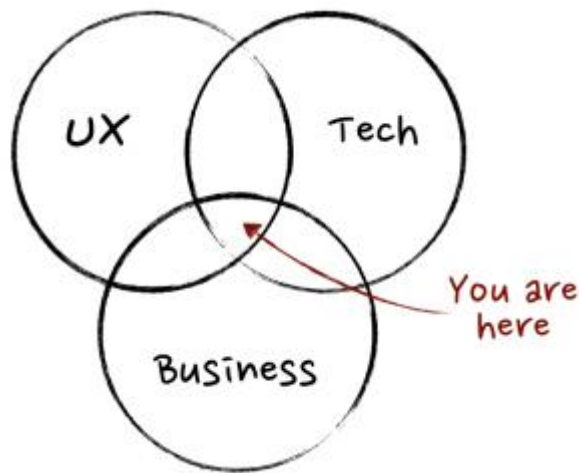


Figure 1 – Venn diagram of product management interaction

1.5.1 Job description & organizational integration

As mentioned in the previous chapter product management is a well-established management form applied in many companies. Even though its popularity, the fewest enterprises have job descriptions for this position in place where tasks and responsibilities are clearly defined. This circumstance implicates potential uncertainty, inefficient interface management and finally ineffective assignment of people. According to [3]⁵, the tasks in the product management field can be divided in

- Collaboration with **development** during the product lifecycle beginning with the product idea followed by requirement management up to series development.
- Execution of **product launches** including product positioning, strategies, marketing-mix and support of internal operative departments like sales, marketing or service.
- During the **product support** over the lifetime of the product, the product manager monitors market parameters, develops marketing plans and implements new options or product enhancements for the existing products.
- Aim of the continuous **market observation** is a product manager who becomes market expert and keeps this knowledge level. In this field competitive analyses and target group orientation play a major role.

⁴ <http://www.mindtheproduct.com/2011/10/what-exactly-is-a-product-manager/>

⁵ Matys Erwin (2011): Praxishandbuch Produkt – Management, p. 27 – 28

- As an entrepreneur within an enterprise one of the main tasks is the on-going **product controlling**: budgets of development projects, analysis of turnover and profit and from time to time direct reporting to top management.

The above mentioned tasks are indeed very general, how the single enterprises define the role and responsibilities is exemplarily characterized by the company size, the business field and the organizational form.

Organizational integration

There are various ways how to integrate product management in existing organizational forms. Within SME it's common to directly report to top management while in bigger enterprises integration in marketing, sales or development departments is frequently used. [1]⁶ clusters the position of product management within a company into four quadrants visible in the next graph.

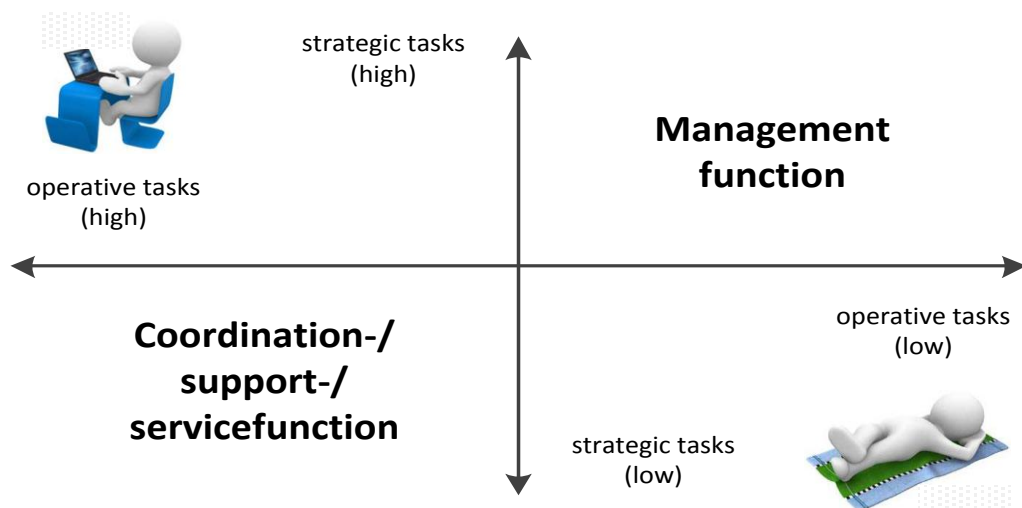


Figure 2 – Positioning of product management

[1]⁷ further explains the segments with 4 corresponding “job titles”:

a. The product manager as heavy worker

Strategic tasks: high, Operative tasks: high

Basically this person is not to envy for his tasks. Beside the complete strategic workload all operative jobs will be handled by him. This situation is often created by misleading task assignments and not valuable for the company respectively the employee. Product managers in such situations have a very short residence time within the company. Interestingly not all product managers are positioned in this

⁶ Aumayr Klaus J (2006): Erfolgreiches Produktmanagement, p. 30

⁷ Aumayr Klaus J (2006): Erfolgreiches Produktmanagement, p. 31 - 32

segment within a company. This fact underlines that personal competencies play a major role in this job area.

b. The leisure time oriented product manager

Strategic tasks: low, Operative tasks: low

This positioning of a product manager cannot be found in practise.

c. The product coordinator

Strategic tasks: low, Operative tasks: high

This product manager is clearly operative oriented. In practise the job title product manager is often applied erroneously. Following job titles are more appropriate: product coordinator, product specialist, product supporter or junior product manager. Due to the fact that these persons have no strategic responsibilities, it's not possible to make them responsible for turnover, profit or market shares.

d. The real product manager

Strategic tasks: high, Operative tasks: low

The last segment characterizes a management position with fully strategic responsibility for products or product groups. In this role the success or fail of products can mainly be influenced.

[12]⁸ goes in another direction and clusters product management in 3 different roles:

1. The "conventional" product manager – the role description is similar to other already mentioned sources. Striking here is the responsibility description: driven by the customer lifecycle, which means the product manager is more or less focused on operative tasks for single customers.
2. The lead product manager – according to [12] this person is responsible for the product life cycle and also for the corresponding product managers.
3. The product strategy director – member of the executive management team and solely strategically oriented. He is responsible for portfolio strategies which go in line with the corporate strategies.

This kind of organizational segmentation will definitely only apply in bigger enterprises where the organisational form allows it. In SME this will be hardly applicable due to scarcity of personnel resources.

⁸ <http://www.windley.com/docs/Product%20Management.pdf>

1.5.2 Interfaces in Product Management

In general the role of a product manager can be simply described as an interface manager for the entire environment of one product. This circumstance accelerates processes, steep hierarchies will be flattened and object oriented teamwork focused.

According to [6]⁹ six classical interfaces of product management exists within organizations.

1 Interface to customer needs/ market problems

Product managers need to understand the market and what the real customer need is. Out of this the product requirements will be collected and finally products developed which fit the customer needs.

2 Opportunity management

A good idea is unfortunately not enough; especially when costs come into the game it's essential to plan resources. If the idea will be further progressed depends on the availability of people, time and money and finally the ROI calculation must be lucrative for the company to invest.

3 Communication to top management

This decision is mainly made by the top management of the enterprise and the job of a product manager is to create a business plan which underlines the strategic importance of the new product.

4 Collaboration with product development

After the final approval by management the idea must be communicated in form of requirements to the development team. The challenge here is to "translate" the customer need into a language which is easy to understand for the development team.

5 Communication to Marketing

The product management team needs to communicate how the product should be positioned, which key customers should be targeted and which promotion channels shall be used. In general the marketing department does not have the deep technical insight or specific market knowledge, a close cooperation is even more important

⁹ <http://www.iilm.edu/iilm-online/Product%20Management%20Self-Learning%20Manual.pdf>

6 Empowerment of Sales

Finally the sales team needs to understand how the product functions and which argumentations against the competition can be applied. The job of the product management here is to provide this information to ease the sales process. [4]¹⁰ has a more critical view on the specific interface sales – product management. The sales force often sees the product management role as hindering for their activities and believe often that product managers are only a staff function. The conducted survey in this source originates that the interaction between sales and product management should be further strengthened, product managers should spend more time in the field and be more practical oriented.

For sure these are only general examples of interfaces in the daily life of a product manager. In companies with a more complex organisation form like AVL, the number of interfaces is much higher; more details follows in the next chapter.

1.5.3 Profile of a PM within AVL

AVL strives after market leadership for every product out of the portfolio. The focus on single products respectively product lines is a necessary prerequisite for an enterprise to develop products which can be successfully positioned on the market in a repeatable and risk minimized way.

Due to the implementation of product management, AVL was able to focus on exactly these single products which explain the prevailing leadership positions for almost the entire product portfolio.

Referring to chapter 1.5, where the functional steering and controlling areas are described, AVL has exemplarily following functional departments in place: Research & Development, Development and Testing department, purchasing, manufacturing, marketing and sales organization. Beside these a project organization ensures coordinated processing's of larger customer specific projects.

It can be said that product management as one of the most important key functions within AVL has a vital share of the success of the company.

Out of this various strategic and operative tasks can be allocated for the single product manager. Exemplarily he is responsible on the one hand for creating and refining product line strategies, on the other hand for writing user requirement specifications, creates sales documentations and steers the product launch process.

¹⁰ Srivastava R. K. (2006): Product Management and new product development, p.39 - 45

While development, market launch and product support follow a certain, defined timeline, the research of markets and the product controlling are ongoing tasks. All in all it can be said that a product manager within AVL is responsible for the product/ product line along the entire product lifecycle.

1.5.4 Profile of a PM in other industries

An example how product management is defined in the automotive environment was given in the previous chapter. Understanding the differences and similarities to other industrial areas is the aim of this chapter.

In the paper “The state of product management 2010” [9]¹¹ were several companies out of the field of digital media in the UK investigated. In contrary to the automotive industry, mainly consumer based internet products and services define their product range. In this area companies are facing huge competition and due to the technical feasibility of the internet users switch from side to side in seconds. A product manager in this field needs to continuously focus back on the user and makes their life simpler. The procedure of compiling customer needs to business goals and available resources is the vital role of a product manager. In another example of this report a product manager is described as multi-disciplined person who works at the connection of technology, design, editorial and commercial with a combination of all of them. Beside the already mentioned skills a manager in this role needs mainly two things – a good instinct or judgement and clarity of thought. With other words it means having a good technological background on the one side together with a vision and passion for the product on the other. It came out clearly that good product managers are hard to find, it's possible but the enterprise must stand fully behind this kind of organisation.

After investigating other fields where product management is applied following graphic was mentioned in several articles describing the so called pragmatic marketing framework. Within this framework all relevant areas of strategic product marketing are included.

¹¹ <http://neilperkin.typepad.com/Product%20management%20report.pdf>

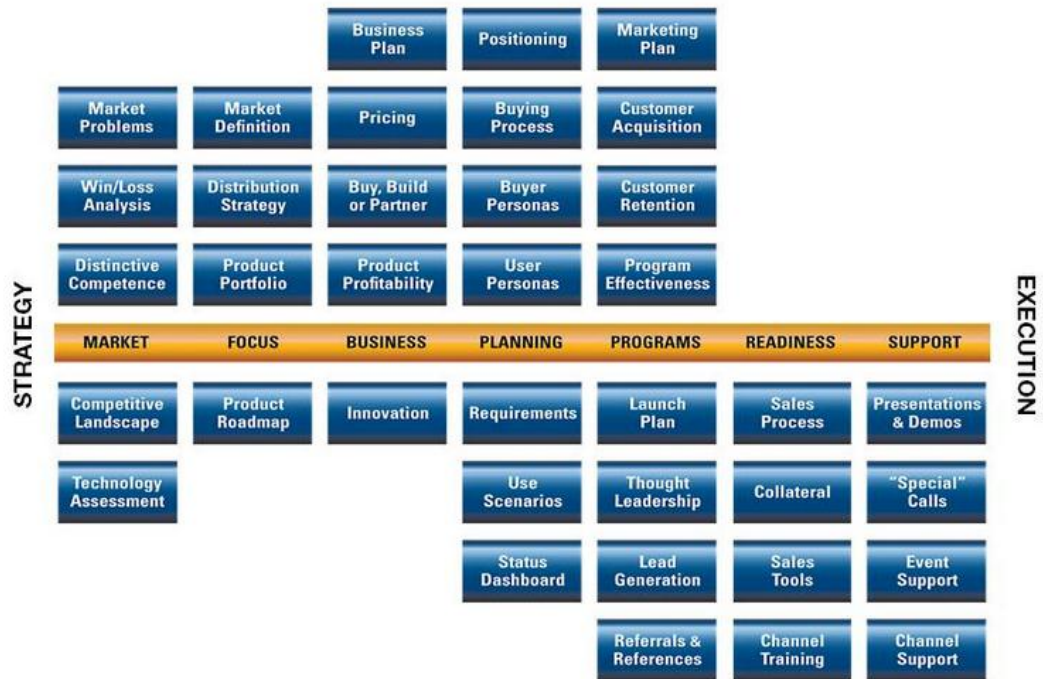


Figure 3 – Pragmatic Marketing framework [10]¹²

According to [7]¹³ the above shown figure can be further segmented into 4 quadrants displayed in the attached picture. The lower left sector (technical/strategic) is how development sees this role of product management. In the lower right area (technical/tactical) would a typical sales person cluster the product management. In contrary marketing people with lower technical abilities trust product managers in exactly this field, therefore they cluster the role in the upper right corner (business/tactical). Finally the last quadrant on the upper right side (business/strategic) is how the top management sees the role. Rather than defining just one single role, a product manager covers normally at least 4 of the mentioned roles.

¹² <http://www.pragmaticmarketing.com/about-us/framework>

¹³ http://mediafiles.pragmaticmarketing.com/pdf/living_in_an_agile_world.pdf

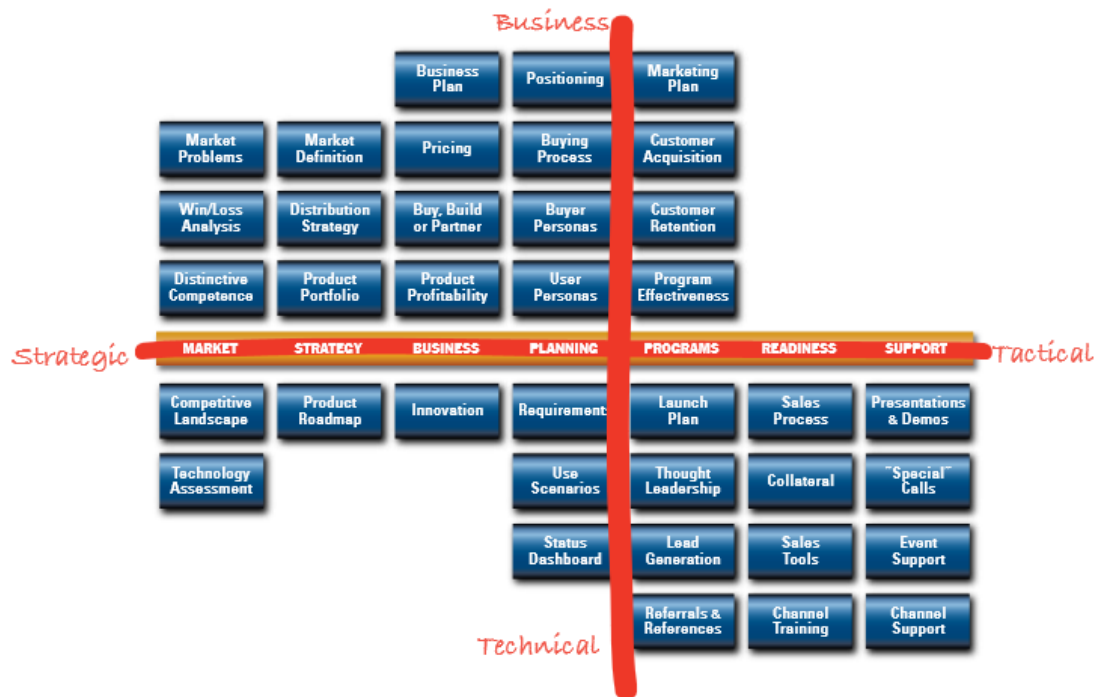


Figure 4 – Segmentation of the marketing framework

Finally it can be stated, that product management does not differ extremely from industry to industry. The basics are the same, listen to the customers, react on competition and focus on innovative products are one of the main success factors. The competitive level and the technical depth depends mainly on the industry, generally the interface function of a product manager within an enterprise could be proven.

Summarizing it can be said that product management was defined over several areas. Chapter 1.5.1 focused on the certain tasks and roles respectively how product management is integrated in different enterprises. The next chapter described the various interfaces in a general and partly critical way while chapter 1.5.3 concentrates on product management within the company AVL. The last chapter of the theoretical part showed how this role is defined in other areas beside the automotive industry. Finally the gathered information formed the bases for the practical research which follows in the next chapter.

2 Research

2.1 The company AVL List GmbH

AVL is the world's largest privately owned company for development of powertrains (combustion engines, transmissions, hybrid systems and electric drive) as well as simulation and test systems for passenger cars, trucks and marine engines. Within the following chapters information from the AVL intranet [5]¹⁴ was used.

2.1.1 Introduction and historical background

The company was founded as an engineering office 1948 in Graz, Austria by Prof. Dr. Hans List. The first wooden prototype engine was designed at the Technical University of Graz for Jennbacher Werke, an Austrian company. After analyzing the wooden prototype, the company was impressed and the deal successfully completed. This was a key event in the history of AVL; it was the first profitable project for the company. Additionally the contract included a clause, that AVL would develop every engine for the Jennbacher Werke from this point forward. With the help of the Marshall-plan, Hans List received a loan to build up laboratories, testbeds and workshops to expand the company. Many years later, in the year 1970, his son Helmut became member of the board of AVL. He was responsible for Sales and the entire measurement equipment department along with the workshop. 9 years later, Helmut List took over the lead of AVL, but his father remained as a consultant in the AVL family.

2.1.2 Performance numbers

AVL employs more than 6200 people at 45 representations and affiliates worldwide. The company is involved in more than 1600 engine development projects, with an installed base of around 4000 engine testbeds globally. The export quota is about 96% with a turnover in 2012 of more than 1 Billion Euro. Striking is the fact that approximately 10% of the yearly turnover is used for company-financed research, compared to the Austrian average of 2.8% [11]¹⁵ related to the GDP. This circumstance explains the innovation leadership and more than 70 patents per year.

¹⁴ <http://desktop.avl.com/>

¹⁵ http://www.statistik.at/web_de/presse/070517

2.1.3 Organization and strategic business units

The company is structured in three main divisions – Powertrain Engineering (PTE), Instrumentation and Test Systems (ITS) and Advanced Simulation Technologies (AST). Each of them is organized in a classical matrix form with strategic business units.

Powertrain Engineering: Innovative development and improvement of all kinds of powertrain systems with the main focus on: Internal combustion engines, transmissions, complete powertrain systems and hybrid and electric drives.

Advanced Simulation Technologies: The advanced simulation division is focusing on design and optimization of powertrain systems and covers all phases of the development process using the “Virtual Engine” concept: Flow simulation, structural & mechanical analysis and acoustics.

Engine Instrumentation and Test Systems: Comprehensive technology for testing engines, gearboxes, transmissions and vehicles: Test bed systems, Instrumentation & diagnostics along with optimization technology.

How the divisions collaborate together is shown in the next picture by means of a practical example of an engine development.

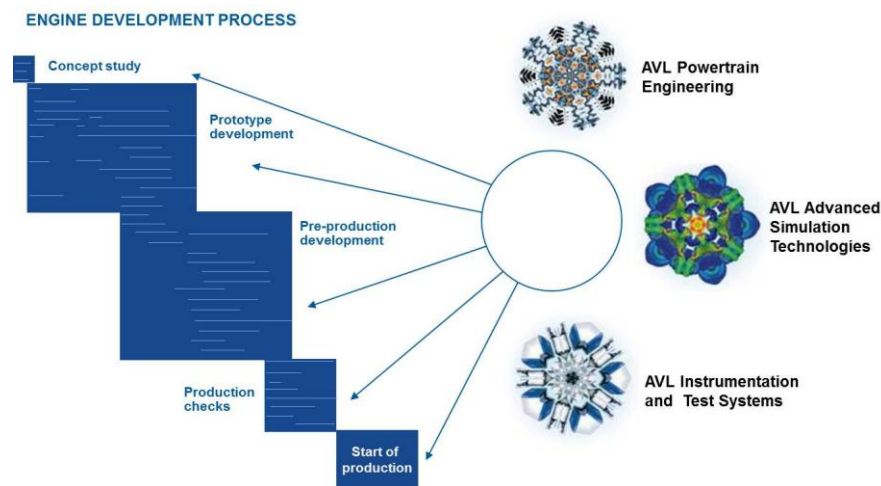


Figure 5 – AVL Engine Development Process

2.1.4 Instrumentation and Test Systems (ITS)

Within this thesis the product management of the instrumentation and test system division will be further investigated. For a better overview the corresponding

business units are visualized in the next graphic and shortly described in the following paragraphs.

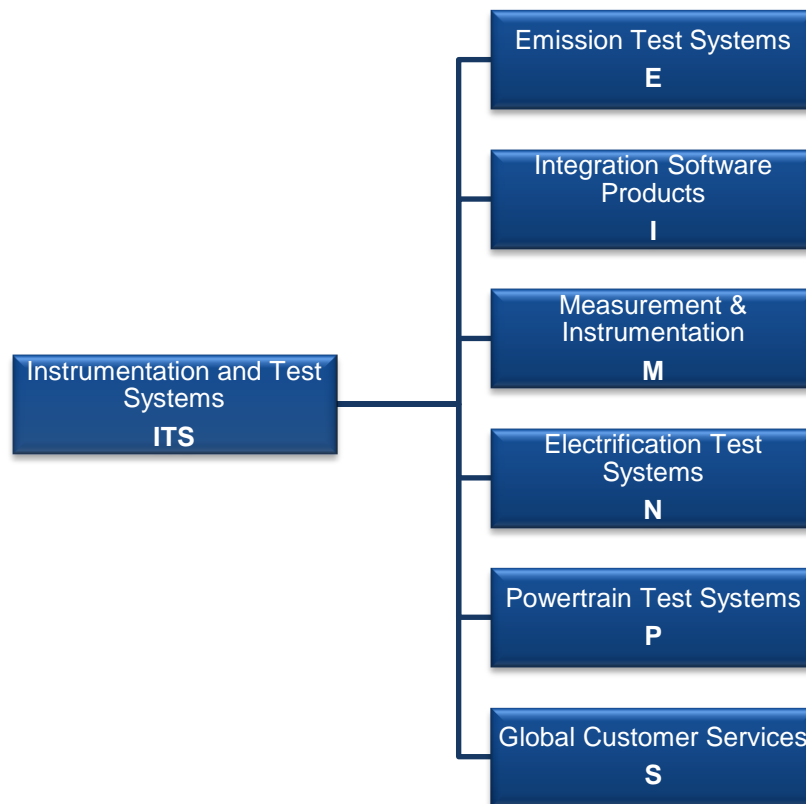


Figure 6 – ITS Business Units

Emission Test Systems - E: Lower emission limits, new limitations of exhaust components and continuous improvements of exhaust after treatment systems are exemplarily challenges the OEM's are facing in the emission area. The business unit E provides systems for gas analytics, dilution and calibration for this challenging environment.

Integration Software Products - I: Diversification of powertrain concepts, maximizing utilization and increasing engine calibration efforts are just examples for business drivers in the business unit I. Test automation in line with test information management and calibration tools represents some solutions out of the portfolio.

Measurement & Instrumentation - M: Similar to business unit E, the business unit M concentrates on measurement equipment for supporting their customers reducing emissions sustainably. Fuel consumption measurement equipment, exhaust

measurement devices and everything about indicating for detecting internal combustion processes form the product portfolio in this business unit.

Electrification Test Systems - N: The newest business unit concentrates on electrification products like battery testers and emulators, electrification systems like complete testbeds for batteries or E-motors and finally the racing field. The main driver in this area is a very common term nowadays - CO₂ reduction which goes hand in hand with the electrification of the powertrain.

Powertrain Test Systems – P: Software solutions and analyzers are simply not enough for providing a complete test environment. Business unit P therefore provides complete engine, end-of-line, driveline and vehicle test systems. The scope of business starts from providing single engine testbeds to complete buildings including test facilities (e.g. Daimler Stuttgart Motorenhaus 3)

Global Customer Services – S: Last but not least the business unit S covers the entire field of services like maintenance, repair, training, support and integrated resident services.

2.2 Research methodology

Allocation of profound systematic and analytical methods forms the basis for achieving the main- respectively sub-objectives of the thesis. Following this approach the thesis is divided into a theoretical and a practical part. For both parts two types of methodologies will be applied:

1. Theoretical methods

The first *observation* of the current situation facilitated a hypothesizing of the main subject including a clear goal definition of the research. Applying so called *abstraction methods* made it possible to concentrate on the main subjects of product management development and eliminate irrelevant topics. *Inductive methods* helped to utilize the results from a single target group, like the product managers to other job areas within the enterprise. In contrary *deductive methods* made it possible to deploy the overall results to a single target group. *Synthesis methods* are used to funnel the results, make proposals for improvements possible and finally prove the hypotheses. The quantification of the results in the practical part was done by means of *statistical* and *graphical methods*.

2. Experimental methods

Out of the field of empirical methods the *questionnaire method* was applied in this thesis. More detailed descriptions of this method follow in chapter 2.4.

Since the practical part forms the major constituent of the thesis, the methodological approach is visualized in the enclosed figure.

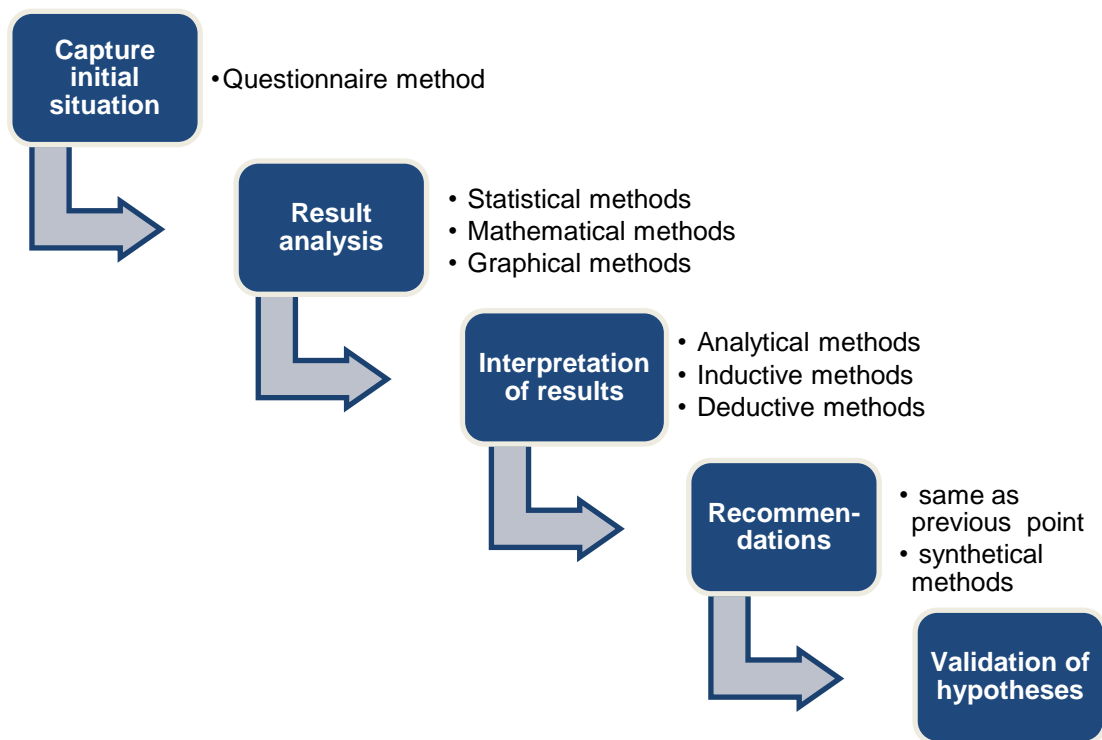


Figure 7 – Methodological approach - practical part

2.3 Means of executing the research

To assess the current status of employee development out of the field of product management at AVL, a web based survey was evaluated as the most appropriate method. As a consequence it was possible to reach a large target group within a short time, implement their suggestions for improvements and analyze the results using statistical and graphical tools.

2.4 Structure of the questionnaire

The survey focused on the Strategic Business Unit Instrumentation and Test System of AVL with the 6 corresponding business units (E, I, M, N, P, S) and their product

managers respectively supervisors. In numbers these were 58 Product Managers and 23 supervisors, in total 81 employees which formed the target group.

A detailed segmentation of the respondents into their belonging business units can be seen in following figure:

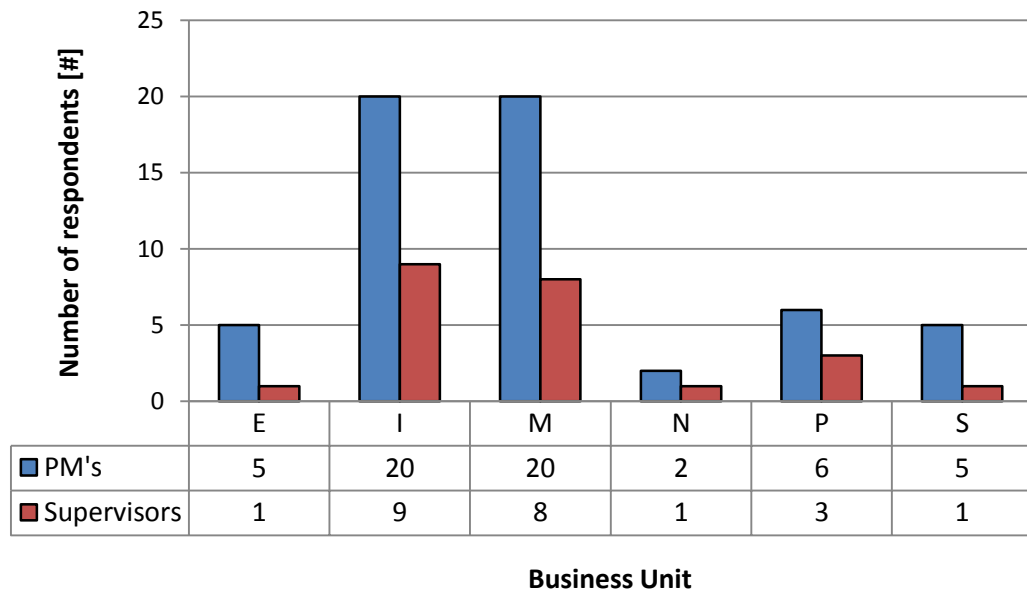


Figure 8 – Segmentation of respondents into business units

The Beta-Test of the research was done with a group of 5 colleagues; two supervisors and three product managers in written form with word-handouts. Their inputs and suggestions were implemented in the final version of the survey. The actual research was done by means of an internet survey platform called survey monkey. This platform ensured confidentiality and respondents were informed via email and reminded in person and via email.

The research respectively the survey was designed in a way to get as much as possible information out of the target group with following main focuses:

- Make clear how product managers and supervisors see the role of a PM within the company AVL.
- Identify the requirements and tasks of a PM in daily life including assessment regarding time exposure and relevance.
- Identify what tools PM's are using respectively should use to solve challenges in their daily business life.
- Make clear if the current training approach covers the necessary topics for solving daily life challenges and if respondents would further recommend it.

- Detect the importance of alternative training approaches.
- Analyze the required competencies and personal attributes for the job as a PM.
- Get out personal information from respondents regarding business experience, former areas of employment and recruiting.
- Analyze how the PM's and supervisors understand the relevant topics and how their understandings deviate from each other.
- Identify if career development possibilities are visible in the corresponding work environment.
- Capture respondents ideas for improvement.

To make the final analysis quantifiable, the questionnaire contained mostly closed questions/statements with pre-defined answers. Only one question was designed in an open form. The detailed survey design can be seen in the attached table.

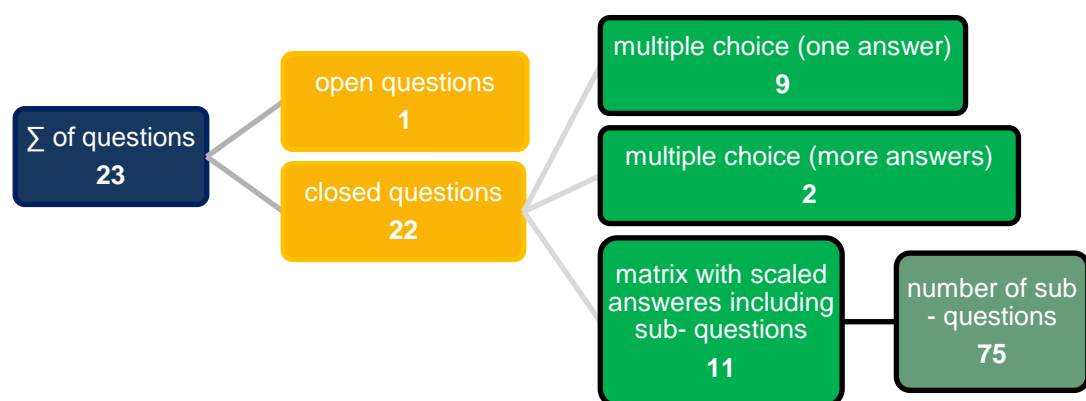


Figure 9 – Survey design

In total the survey contained of 23 main question blocks with 75 sub-questions. As mentioned before 22 questions were designed with predefined answers, 9 of them with multiple choices and only one answer possibility and 2 with more than one answer possibilities. The remaining 11 question blocks included several sub-questions in a matrix form. The high number of question blocks and sub-questions, in total 86, explains the time effort for filling out the questionnaire of approximately 20 minutes.

To get most representative results all questions needed to be answered before the respondents could continue filling out the survey – with one exception, the open question.

After each of the questions the members of the target group had the chance to give valuable inputs, suggestions or ideas for improvement. These remarks were fully taken into consideration and evaluated together with the main answers in the result section.

The questions were clustered in four groups, on the one hand to facilitate the post-processing and on the other to guide the respondents logically through the questionnaire:

➤ Group I - Role and tasks of a product manager (question blocks 1 to 4)

The aim of the first question group was to better understand how product managers and especially their supervisors define the job respectively the tasks and which operative tools are mainly used in the daily business life. Within various enterprises the definition of product management is complex and not always totally clear for employees and their supervisors. Questions 1 and 2 should give a better insight how this topics are understood within AVL. Question 3 deals with the common tools in product management and builds up the link to group II where the current training methods will be investigated more detailed. The last question of this group focused on the main responsibilities and was designed in an open way for maximizing the feedback possibilities.

➤ Group II - Strategic product management training and development (question blocks 5 to 11)

The second question group concentrates on employee development and current including future training approaches in the field of product management. Questions 5 and 6 query if the respondents participated at the training and what kind of educational background they actually have. Questions 7 and 11 ask directly if the content of training in the current form is useful in the daily job and if the training would be further recommended by the participants including reasons for their choices. Questions 8 and 10 identify the special needs of the training contents and finally question 9 gives an outlook of future/ additional training approaches.

- Group III - Competencies and personal attributes/skills (question blocks 12 to 16)

The second last group focuses on required soft-skills in the area of product management. These five questions cover the topics communication, team work, self-management, intercultural competencies and leadership. The current training methods do not include any of these soft skills, which are, according to the personal experience of the author, essential to success in the role of a product manager. The respondents identified which of these attributes are crucial and which parts could be added for future trainings.

- Group IV – Personal information (question blocks 17 to 23)

The final group dealt with personal information about the respondents. Questions 17 and 19 helped to identify how long the respondents work in their current position and in which field they worked in the past. Question 18 covered the recruiting topic to get a better overview how employees hired for their jobs. Question 20 made segmentation into the corresponding business units possible, which will be one of the major topics in the results section. Question 21 unveiled if career opportunities are visible for the participant and what in particular they are missing. Question 22 divided the target group into product managers and supervisor, which will be like question 20 essential for the result part of the thesis. The final question number 23 dealt with employee development and possible future classifications in the field of product management.

The survey was sent out to the target group on 5th of February and was closed on the 15th of February. Even though the time window for performing the survey was relatively small, the response rate was exceeding the expectations. More details will be given in the results chapter.

3 Research Analysis & Outcome

3.1 Research Results

As already mentioned the response rate of the survey was exceeding the expectations. From 81 concerned respondents finished 58 the survey completely which corresponds to a return rate of 72%. This high return rate has various reasons:

- The topic drew high attention in the product management field
- The respondents were mainly colleagues and willing to answer the questions
- The respondents were reminded via email and during personal conversations

A detailed overview of the business unit specific return rates can be seen in the following diagram. The blue bars represent the target group which means all concerned respondents while the red bar shows the actual responses. The rhombuses stand for the response rate which can be seen on the right vertical axes.

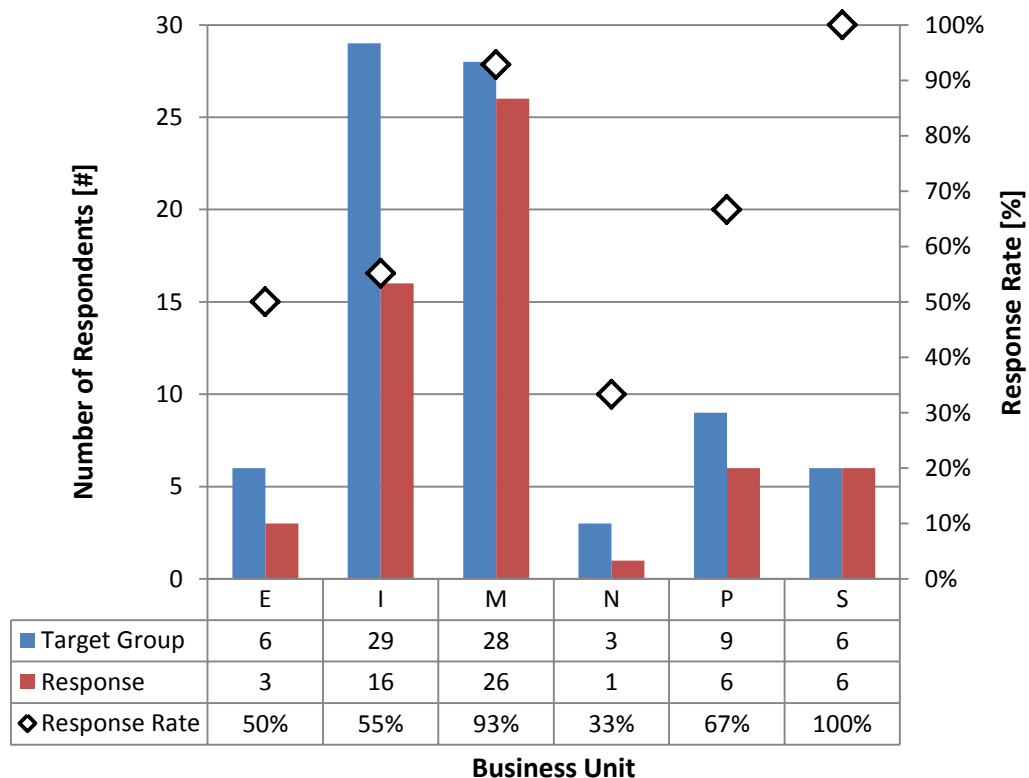


Figure 10 – Response Rate

Finally the research results show a detailed investigation of the main question groups I to V with all corresponding answers of the survey. Due to the high amount of questions and sub-questions it's the most extensive chapter and gives a good overview of the results of the entire questionnaire.

For a more representative visualization stacked column charts for the matrix question groups, exploded pie charts for the multiple choice questions and for evaluating the open question will be used. Some results of the matrix questions couldn't be pictured in only one diagram; therefore they were split into several sequenced diagrams.

3.1.1 Question group I - Role and tasks of a product manager

Question 1 (matrix with 9 sub-questions) - Please rate the following market and product specific requirements in the field of product management according to their importance in the daily job of a product manager.

The first question block should identify what requirements are needed on the job including a rating of how important the respondents see them in the daily business life. The first graph shows that 48 % of the respondents see it relevant to operate the own product while the majority of 41% thinks a product commissioning is minor important. The answers regarding the training of products scatter much more, 29 % see it very important respectively 34 % important. The last two task show a stronger significance – identification of new business opportunities and knowing how the market is changing are seen as very important topics by most of the respondents (78 % respectively 71%).

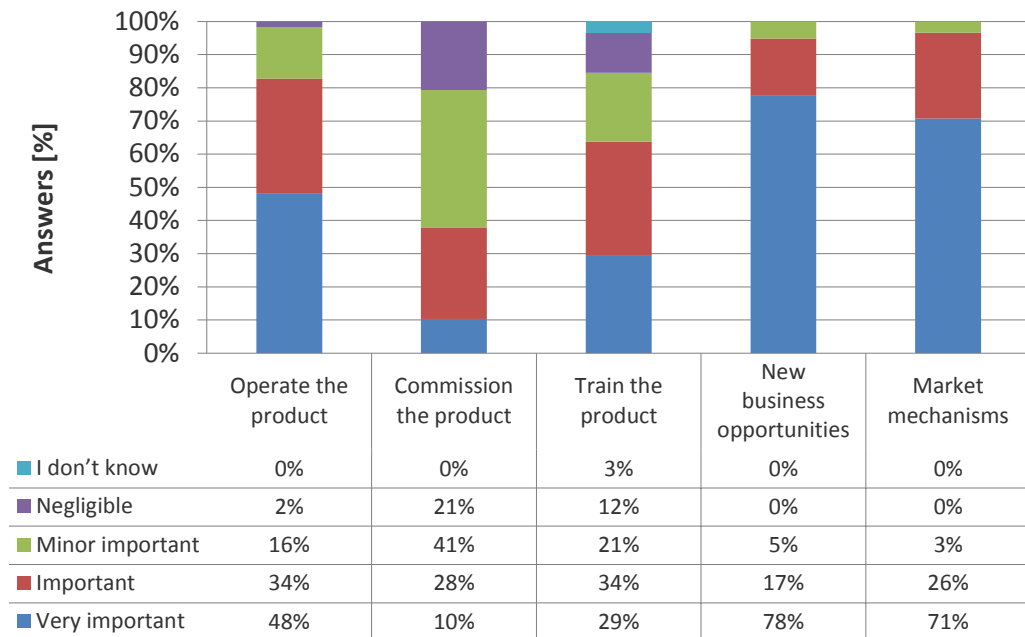


Figure 11 – Market and product specific requirements, part 1

The second graph underlines the importance of requirement management (71%), direct customer contacts (66%) and distinctive knowledge of the competitive situation (78%). The most striking fact is that the respondents see an active participation during sales negotiations as minor important (41%); some see it negligible (12%).

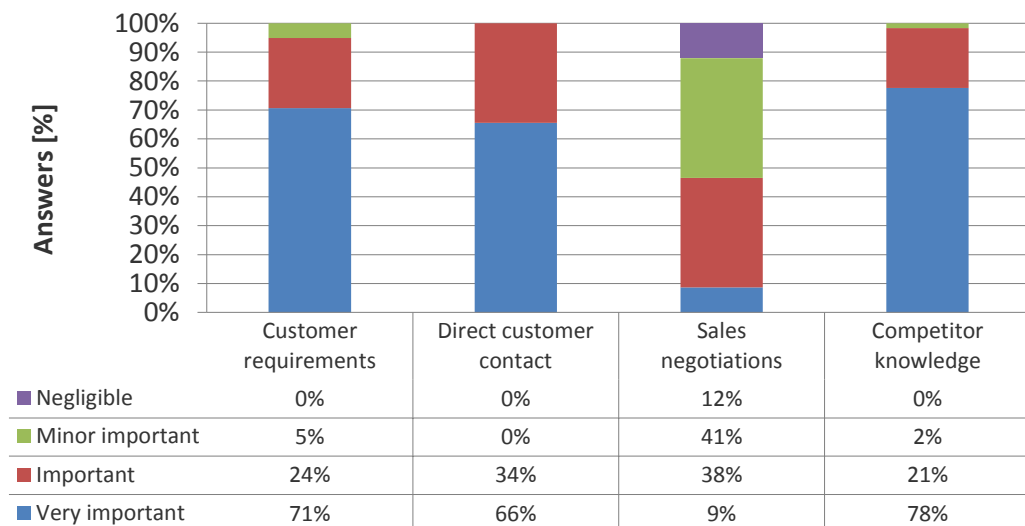


Figure 12 – Market and product specific requirements, part 2

Two respondents had further suggestions; one was to participate actively at exhibitions to learn about competitive marketing campaigns and the second was the ability to translate requirements into features and benefits.

Question 2 (matrix with 13 sub-questions) - Please rate the following strategic and operative product management tasks according to the current time exposure in the daily job of a product manager.

The intention of the second question block is to show the operative and strategic tasks product managers have to solve in their daily business life. The questions were formulated to get a ranking in terms of time exposure and to see mainly how much effort each of the exemplarily tasks require. The first graph emphasis that the understanding of refining product line strategies differs between the respondents, the majority thinks enough time is spent on this topic (36%). Feature/ Benefit Analysis (42%) and getting the right market parameters (31%) are topics where less time is spent while SWOT analysis (36%) and USP definitions (40%) are sufficiently covered according to most of the respondents.

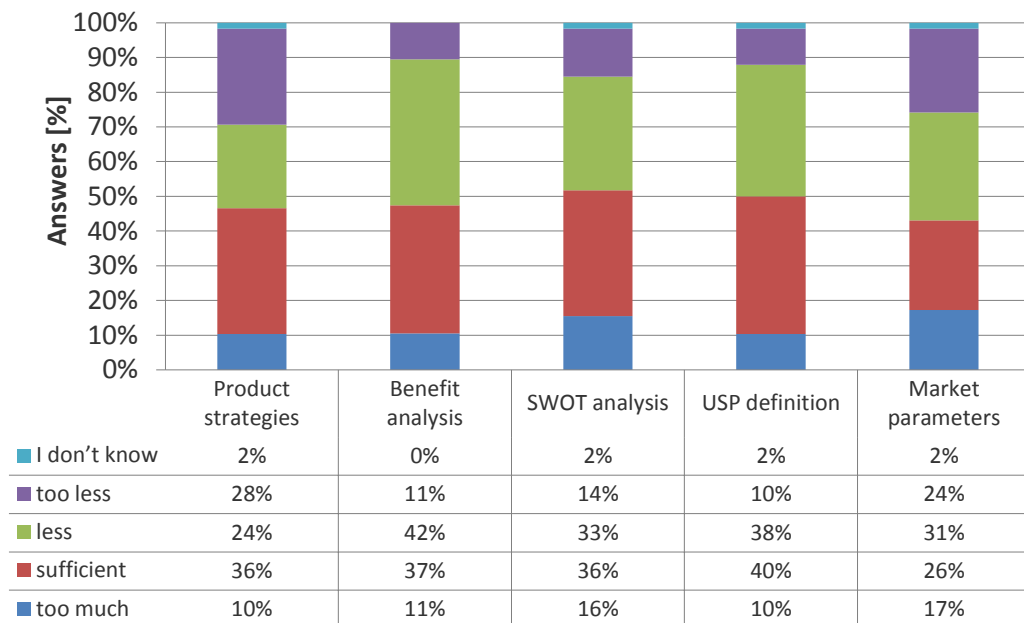


Figure 13 – Strategic and operative tasks, part 1

The second graph shows on the one hand that too much time is spent on creating and refining sales article texts (43%) and on the other that the competition is focused less or too less (38% and 31%). Requirement management could be focused further (36%) though tracking the PIP progress is done quite sufficiently (41%).

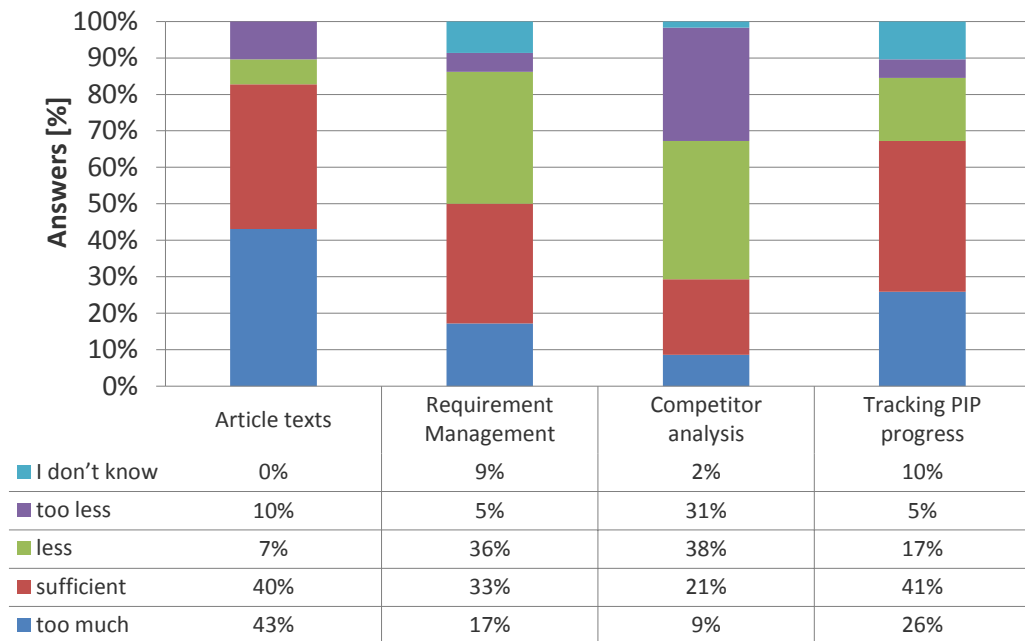


Figure 14 – Strategic and operative tasks, part 2

The final graph underlines that product managers are far too much involved in sales support respectively troubleshooting activities as 55 % responded. Creating URS documentation (53%), visit customers (34%) and working on sales documentation (45%) are done adequately in terms of time exposure.

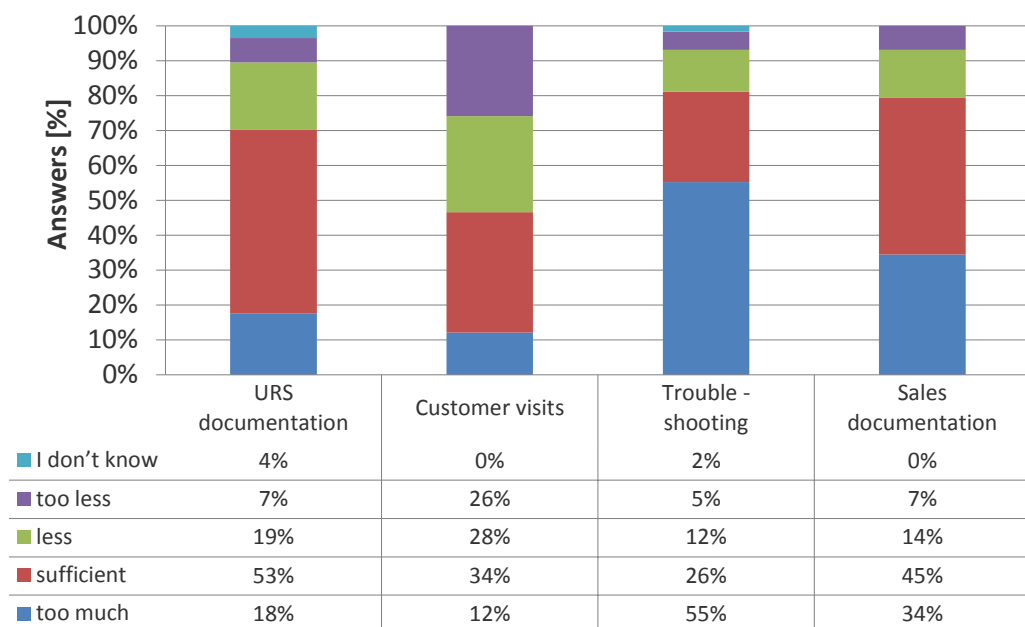


Figure 15 – Strategic and operative tasks, part 3

Two respondents had further interesting comments – in their point of view too much time is spent for reorganization of information for different tools and presentations

and according to their opinion no standardization is available how information/facts will be presented respectively stored in the different tools of the daily use.

Question 3 (matrix with 8 sub-questions) - How often does a product manager use the following tools and applications in the daily business life?

The third question block steps into the operative tooling area whereas the results give decisive information for the required training content of product managers. The next graph shows that the internal platform SharePoint (48%) and SAP (41%) are used quite frequently in contrast to the toolbox of product managers (68% use it occasionally). The usage of Offer II scatters quite a lot - an explanation for this circumstance could be the affiliation to different business units.

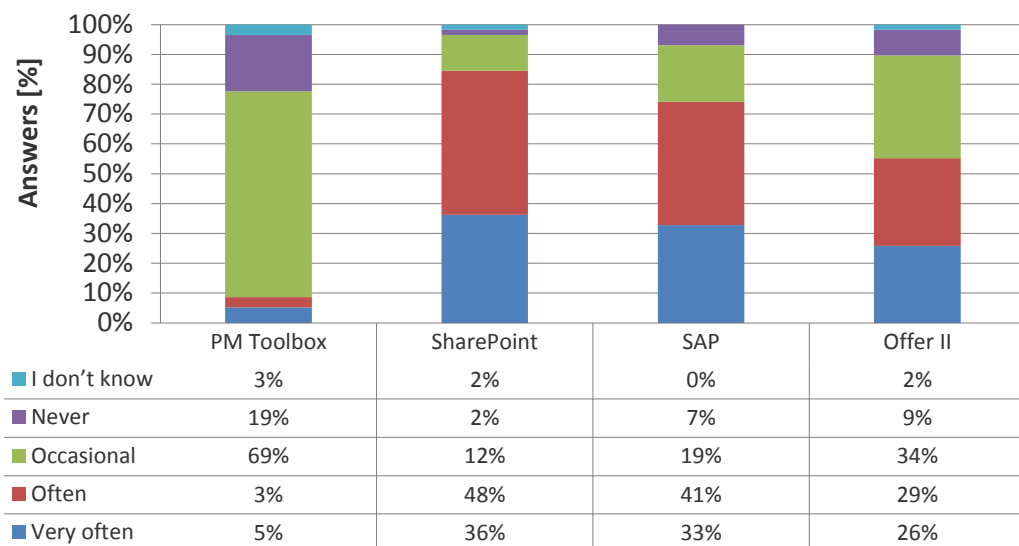


Figure 16 – Operative tools, part 1

In the second diagram it can be seen that the tools PIM, DCG and Salesforce.com are used quite frequently. Striking in this graph is that 14% of the respondents don't know what CBI documents are and that only 10% of them use these documents often.

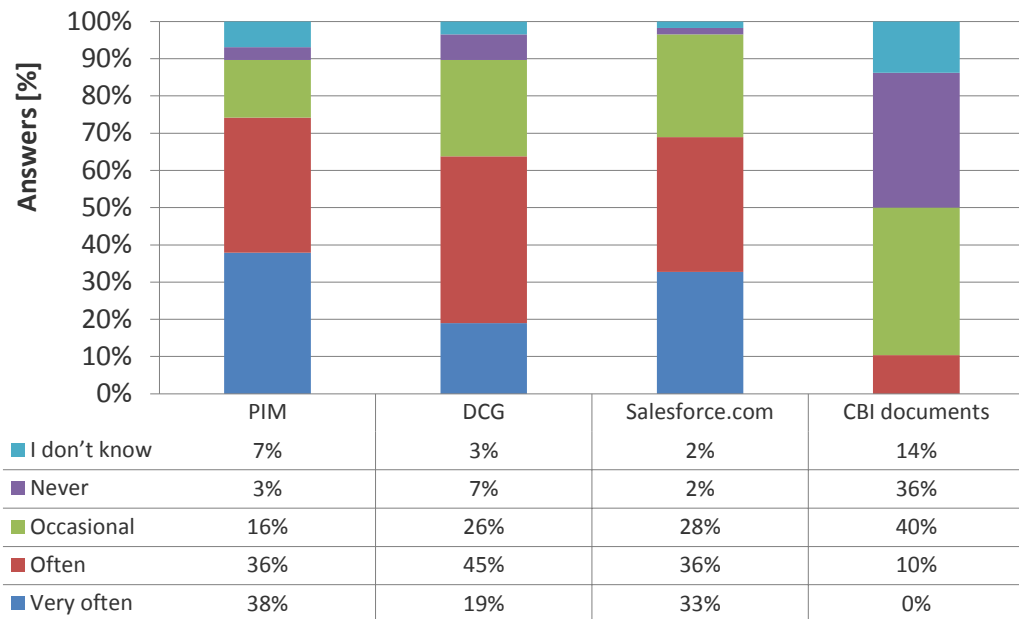


Figure 17 – Operative tools, part 2

One respondent mentioned that the tool HP Quality Center is also used quite often in his business environment.

Question 4 (open question) - Please name the three most important tasks/responsibilities of a Product Manager in your point of view.

The only open question in the entire survey was answered by 49 respondents, 9 skipped it. All in all 147 answers could be assigned to 6 main tasks which can be seen in the following pie diagram. 23 % of the respondents think that product managers need a clear understanding of how markets are changing, how competition performs and finally what prices are customers willing to pay for their product portfolio. 18 % see the main task in refining and defining product line strategies in accordance with the segment/ business unit/ enterprise strategy. Another 18% assign the product manager role to the field of requirement management. Understanding the customer needs translating them into features and benefits can be seen here as one of the main challenges. 13% of the target group sees the main tasks in supporting the sales force, a very operative approach indeed. Participating at customer visits, preparing punchy sales documentation and finally taking over the role of a troubleshooter are the main components in this area. The remaining 20% can be divided into product life cycle management and initiating new product developments as well as series development of already existing products. 8% of the answers were not directly assignable to one of the 6 main tasks.

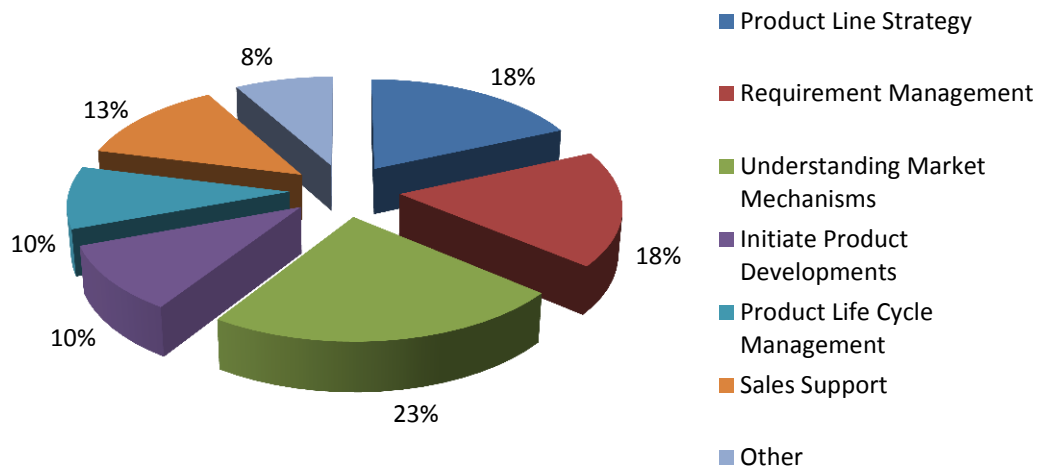


Figure 18 – Tasks and responsibilities in product management

3.1.2 Question group II - Strategic product management training and development

Question 5 (multiple choice with one answer possibility) – Did you participate at the product management training?

This question should reveal how many of the respondents participated at the current training – 69 % in absolute numbers 40 attended the training while 31% respectively 18 respondents were not part of the training so far. The respondents who answered this question with yes were guided to question number 6, the respondents who answered with no jumped directly to question number 7.

Question 6 (multiple choice with more answer possibilities) - Which kind of education did you receive before attending the Product management training?

The results of this questions help to understand which background the attendees have before they are starting their product management education. Striking is the fact that 95% come out of the technical area and 35% had an economical education before. 20% are marketing experts while roughly 8% had experiences in the sales area. The remaining 5 % come out of the project management field. The reason why the percent values exceed 100% is that the respondents had the chance to choose more answer possibilities. A detailed visualization can be seen in the attached graph.

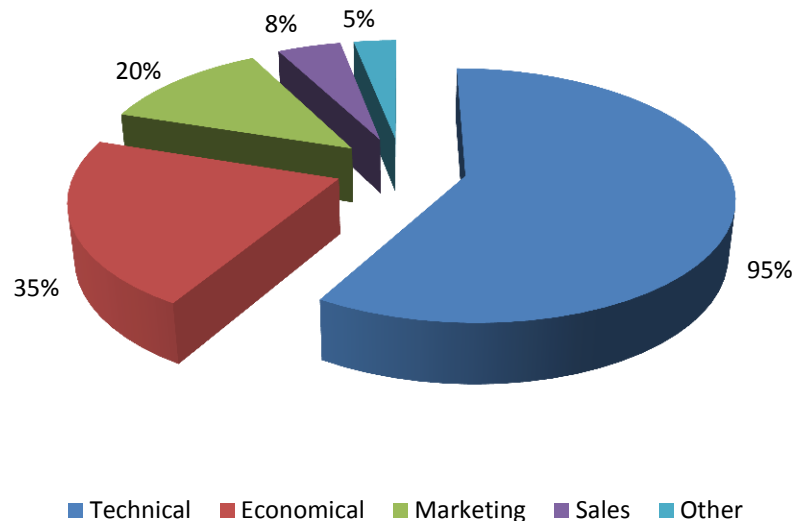


Figure 19 – Educational background

Question 7 (multiple choice with one answer possibility) – Is the content of the product management training useful in the daily job of a product manager?

Is the actual training approach accepted by the respondents or should improvements be applied will be answered by the current question. Almost 40 % thinks it fits the needs, 33 % have no opinion on this topic and 28 % have a demand for improvements. Remarkable at this question were the side comments which were quite critical – some examples are listed below:

- “I missed the motivational part and the training of soft skills”
- “The topics are right but somehow not really useful for the daily job”
- “But do we use it right in practice and with the correct weighting?”
- “Theoretically yes, practically no”
- “Yes, but not sufficiently. Too much time spent on tools vs. the real daily tasks of a product manager”

According to the additional responses it was made clear that the current training approach should be refined, probably completely new structured and if possible streamlined to the real needs of the target group. This observation will be continued in chapter 3.4 recommendations for improvement. The graphical editing can be seen in the enclosed diagram.

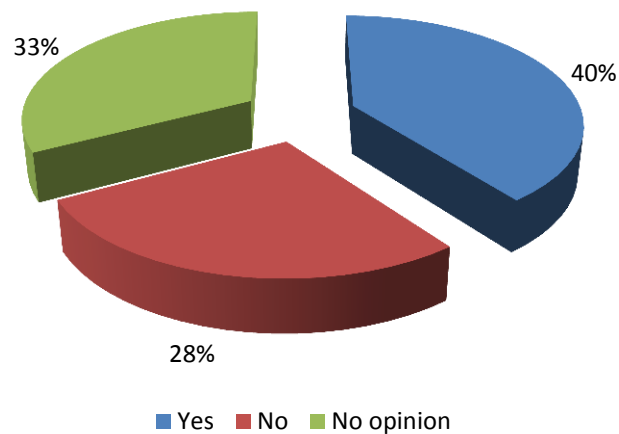


Figure 20 – Usability of the training content

Question 8 (matrix with 3 sub-questions) - Which is the most important training content for the daily job of a product manager from your point of view?

Training contents depend mainly on the target group, to find the right mixture of theory and praxis is often not trivial. How this topic should be handled show the results of this question – the majority of 81% thinks it's very important to focus on practical topics, around 52% find theory important and 55% believe that getting a deep knowledge of the required tools is important as well. The exact allocation is visible in the next diagram.

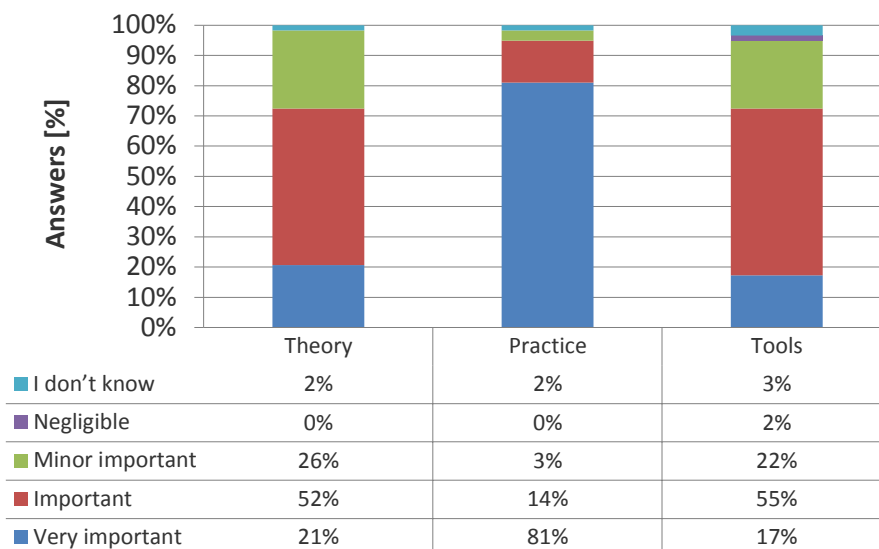


Figure 21 – Training contents

Question 9 (matrix with 9 sub-questions) - Please rate additional training approaches according to their utility for the Product Management Training

Up to now we could observe that improvements for the current training are requested by a large portion of respondents. The following results provide a deeper insight which alternative training methodologies should be applied according to them. The first graph shows that 50% think a personal coaching is very useful and even 57% think that training on the job represents a welcome enhancement. The remaining three approaches – working as an expatriate for a defined time, project management and conflict management – were seen as well as fruitful extensions.

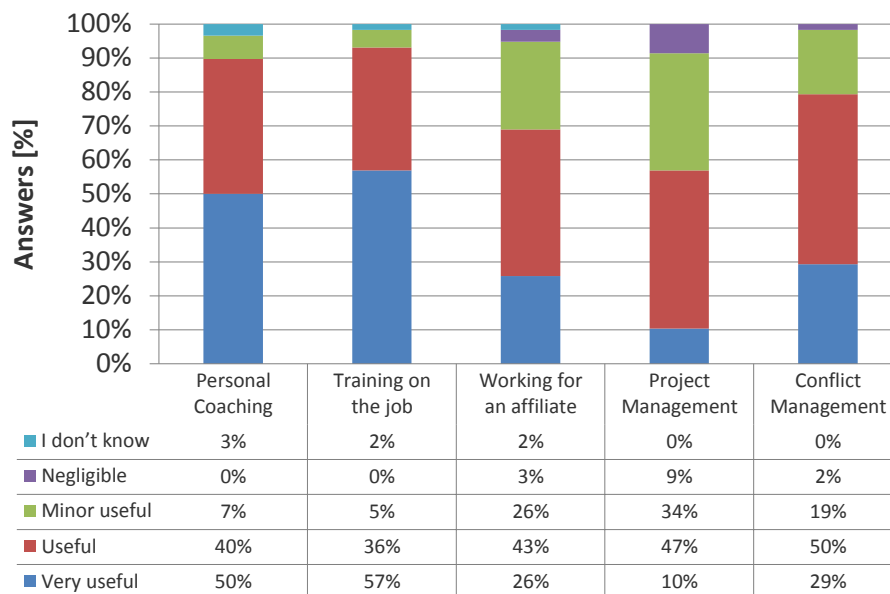


Figure 22 – Alternative trainings, part1

The striking highlights of the second graph are the majorities in the field's presentation skills (57%) and communication (62%). Leadership (47%) respectively time-/self-management were seen as useful enhancements.

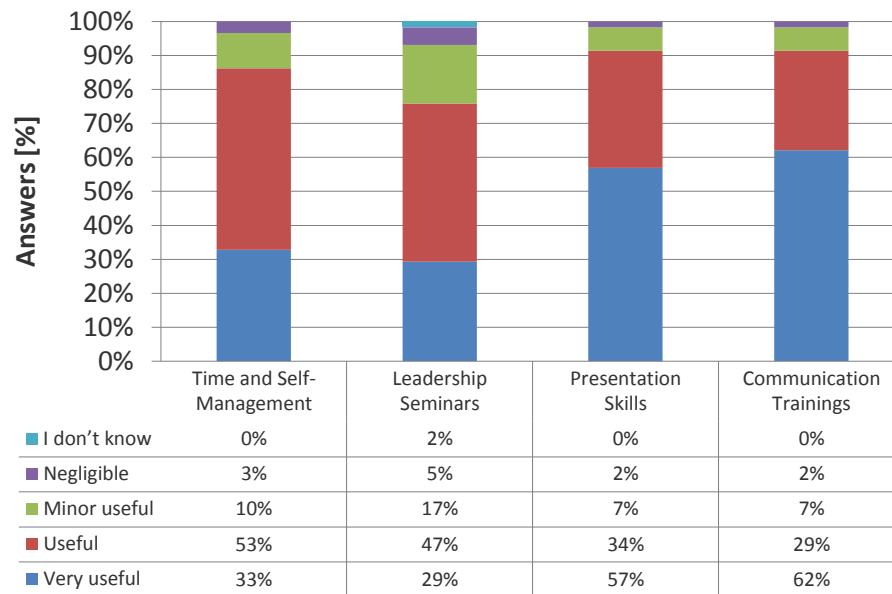


Figure 23 – Alternative trainings, part2

Question 10 (matrix with 8 sub-questions) - How good are product managers prepared for following interfaces and processes after attending corresponding trainings?

Based on question 7 further details of the training content should be revealed at this point. Generally the sub-questions covered most of the training topics, how well the participants were prepared after the training show the two attached diagrams. The topics supply chain management (33%), intellectual property rights (31%) and development of software products (29%) couldn't be transformed to practice in a proper way. Only the product innovation process which represents one of the main responsibilities of a product manager is covered sufficiently (43%). Remarkable in this graph are the facts that most of the respondents were not sure or didn't attended at the corresponding trainings.

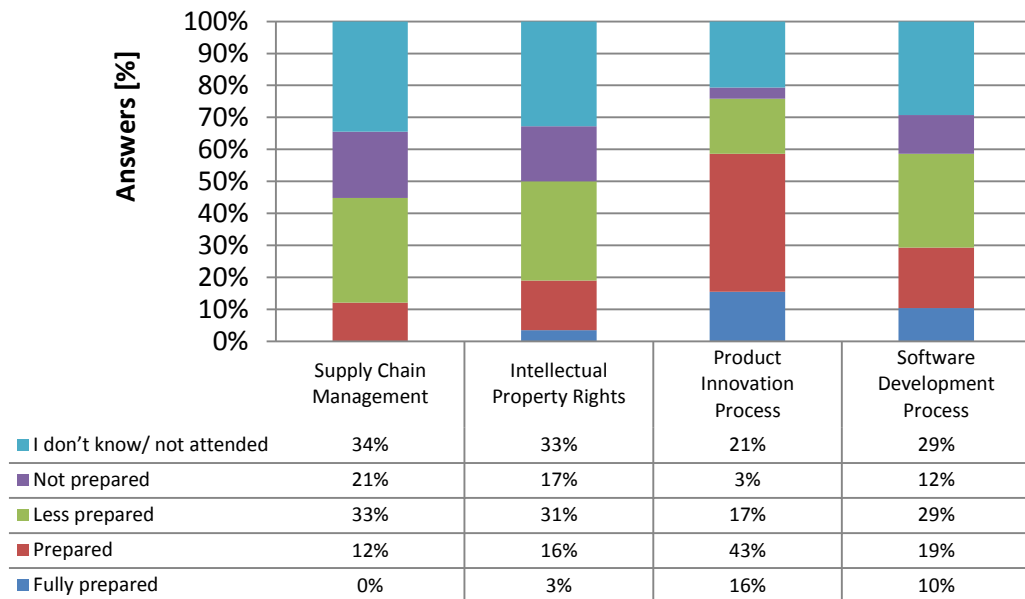


Figure 24 – Interface and process preparation, part1

A similar picture shows us the second diagram. Product launch process (41%) and product life cycle (43%) are covered properly; the sales process (34%) can be seen as improvable while knowledge of quality processes should be deepened in the future (40% see less preparation). Almost a quarter of respondents was not sure or didn't attend the trainings.

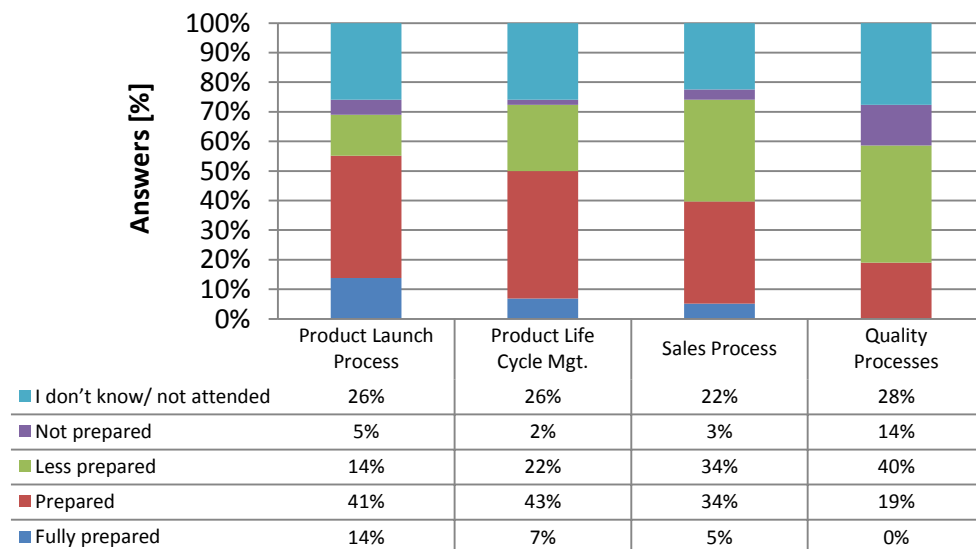


Figure 25 – Interface and process preparation, part2

Question 11 (multiple choice with one answer possibility) - Would you recommend the Product Management training in the current form to new or other colleagues?

The last question of question group II goes in line with question 7 and asks in a direct way how satisfied the respondents were with the training respectively if recommendations would be given. The results can be seen in the next graph where 33% would give a recommendation for the training while the exactly the same amount of respondents wouldn't do so. 34% had no opinion regarding this topic.

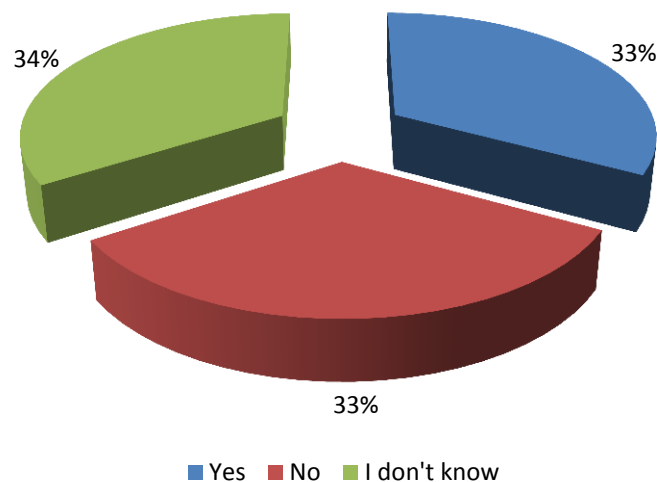


Figure 26 – Training recommendations

3.1.3 Question group III - Competencies and personal attributes/skills

As mentioned in the survey description the next question group tries to identify the soft skills required for managerial positions.

Question 12 (matrix with 7 sub-questions) - Communication: Please rate following examples according their importance in the daily job of a product manager.

Product manager's are often challenged with interface topics, internal and external ones, how this area is observed by the target group can be seen in the next diagram. The topics "confidence in presenting new ideas and strategies" (76%), "clear and understandable communication" (84%) and "listening when others presenting their ideas" (62%) are ranked as very important by the respondents. The remaining communication skills "support interchanges of ideas" (53%), "proactive gathering of information outside of the main field of responsibility" (48%), "motivate people during daily work" (43%) and "resolve conflicts in an open discussion" (52%) are seen as important. All in all every soft skill in this group was at least ranked as

important which underlines the necessity to evaluate a communication section for future trainings.

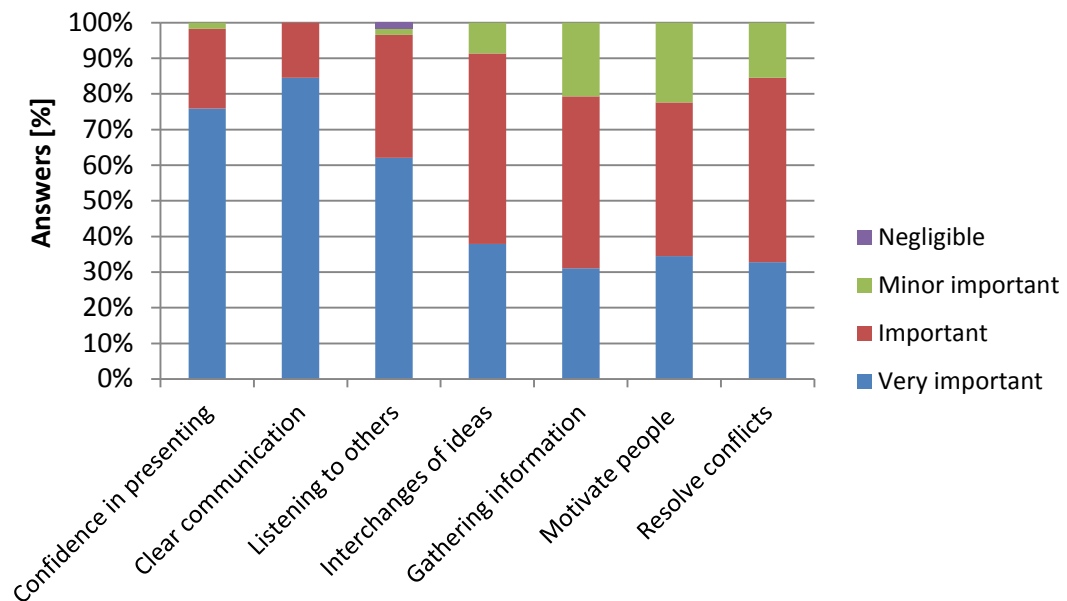


Figure 27 – Communication skills

Question 13 (matrix with 5 sub-questions) - Team Work: Please rate following examples according their importance in the daily job of a product manager.

There are less work environments where teamwork plays such a major role like in the field of product management. How much attention this topic gets from the target group is visible in the next graph – solving team tasks in time and quality (48%), building up networks (50%) and clear communication of mutual goals (53%) are ranked as very important. Motivating people (52%) respectively group work (47%) are seen as important communication tools. Similar to the previous question its visible here that also teamwork represents one of the more important soft skills for a product manager.

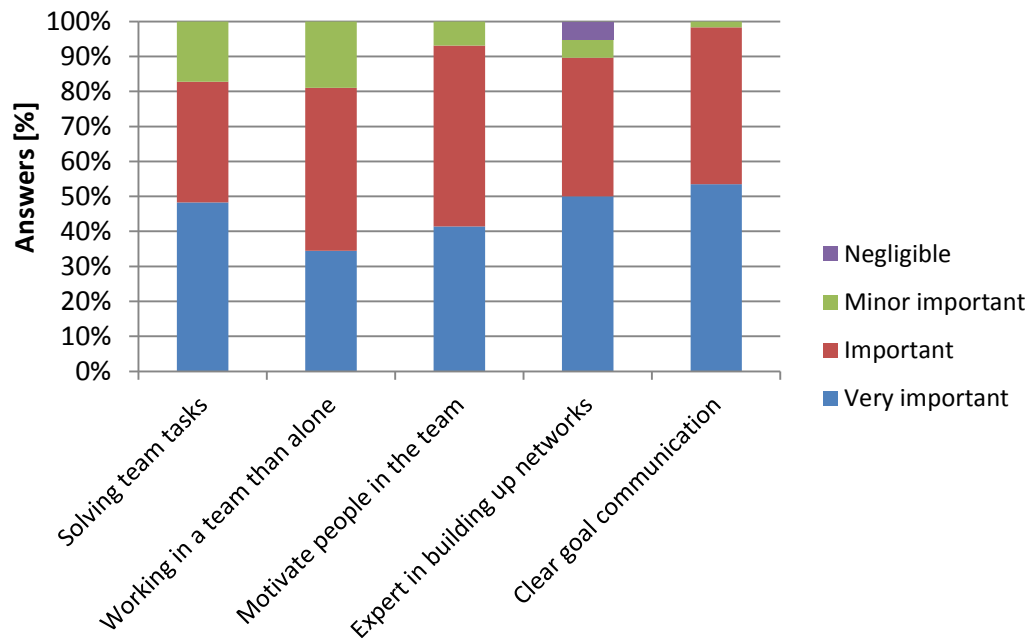


Figure 28 – Teamwork skills

Question 14 (matrix with 5 sub-questions) – Self Management: Please rate following examples according their importance in the daily job of a product manager.

Facing more than one challenge with high importance at the same time is a regular circumstance in this job area. Self-management is often underestimated and neglected. Our respondents see this topic in a following way, visualized by the next graph. Meeting the needs of external clients (60%), usage of time and resources efficiently (47%) and multi-tasking (47%) was graded as very important while meeting the needs of internal clients (52%) and self-defense of the own opinion (36%) was ranked as important.

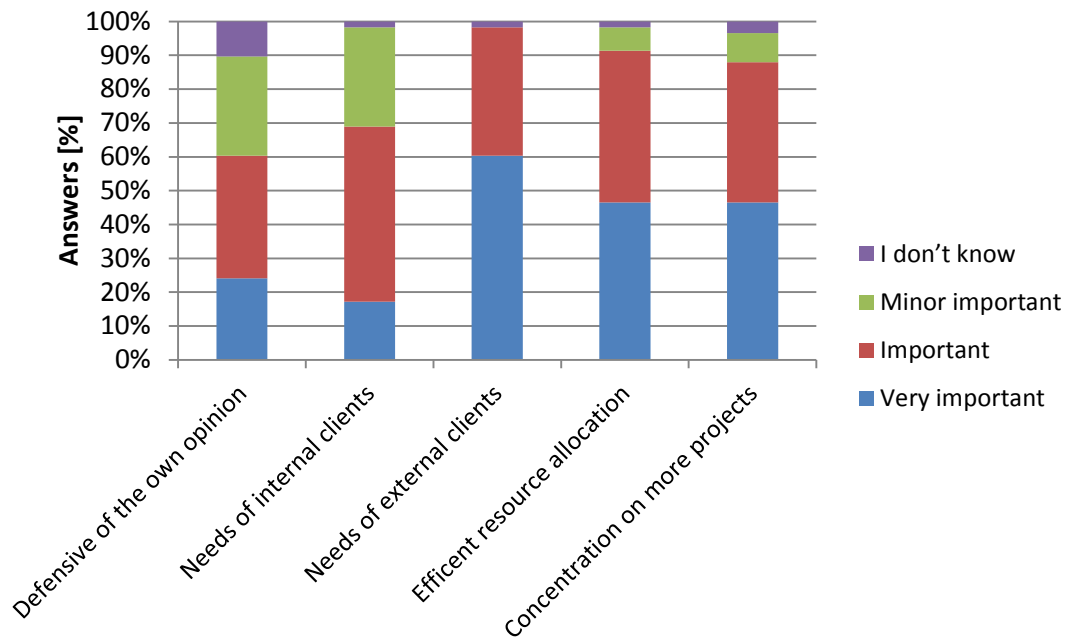


Figure 29 – Self Management skills

Question 15 (matrix with 3 sub-questions) - Intercultural Competence: Please rate following examples according their importance in the daily job of a product manager.

Working for a global operating company implies intercultural competencies of product managers for a successful positioning of products on a global base. The results at this point underline this fact. Awareness of the impact of own behavior to others (60%) and the adaption of the own behavior to individuals and groups from different national and job related cultures (50%) are seen as very important by the majority of respondents. Actively promoting the interaction between headquarters and affiliate groups (52%) was ranked as important. Especially in times like these where new markets emerge globally, self-adaption to new cultures and behaviors is essential for every kind of management position.

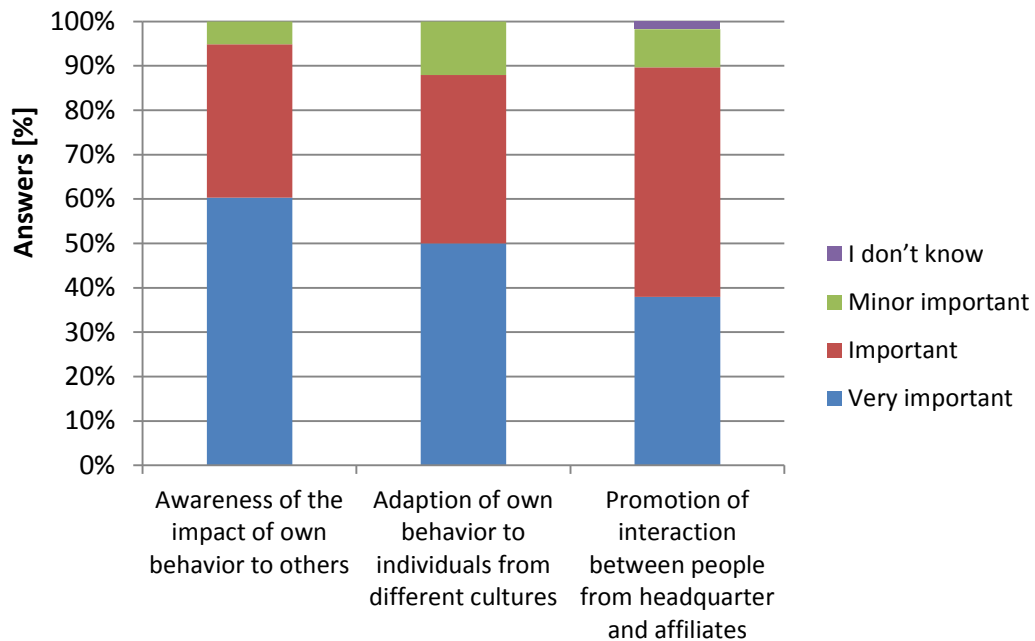


Figure 30 – Intercultural competencies

Question 16 (matrix with 5 sub-questions) - Leadership: Please rate following examples according their importance in the daily job of a product manager.

In general product management within AVL does not include personnel responsibility, which means product managers have to operate in between the matrix organization without leadership possibilities. It's obvious that this circumstance represents one of the most difficult tasks and requires a lot of experience respectively flair. To which extent the respondents understood this topic can be seen in the next diagram. The majority of 70% thinks that efficiently managed meetings are very important as well as more than 50% think that keeping promised actions on tasks and the ability of leading without sword (62 %) is very important. In addition to this more than 50% have the opinion that modify the own behavior for meeting the needs of others and understanding organizational problems/ opportunities is important. Summarizing it can be said that the training of leadership skills is often neglected in areas where no direct leadership is applied, although according to the author's personal experience it often determines of success or fail when these abilities do not exist.

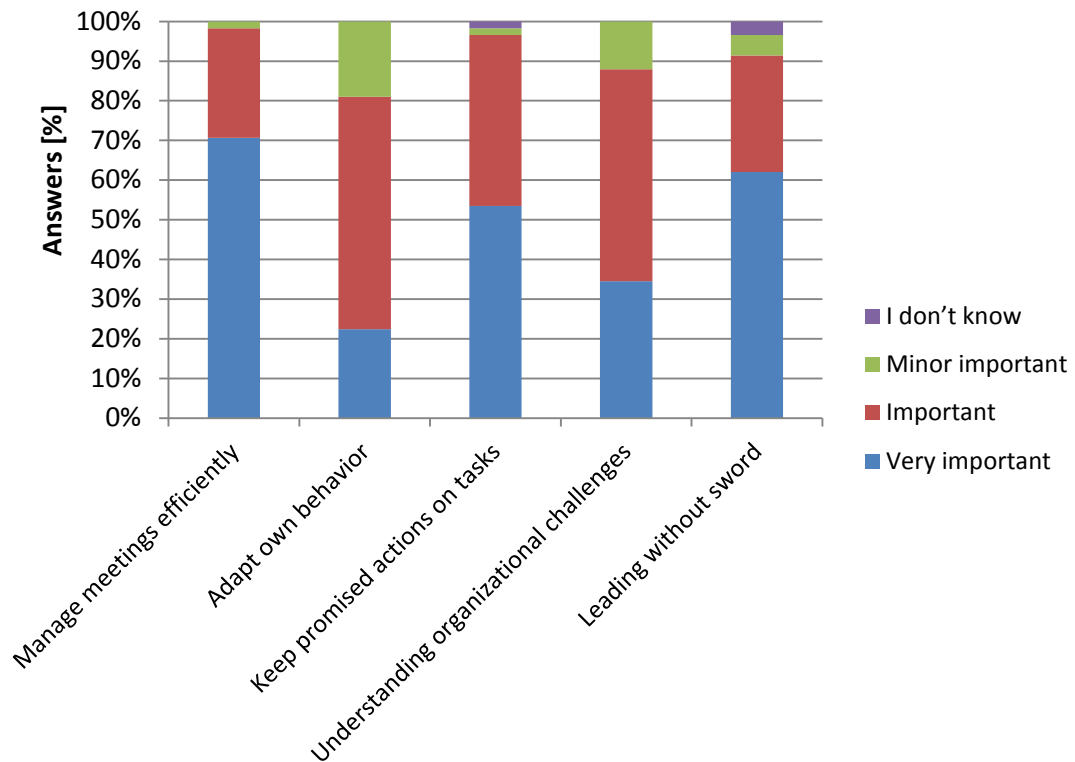


Figure 31 – Leadership skills

3.1.4 Group IV – Personal information

The last group of questions gives us more information on each respondent and helps to distinguish between different groups for the last two chapters in the results section.

Question 17 (multiple choice with one answer possibility) - How many years are you working in your current position?

The next diagram shows that only 9% are new in the field of product management respectively in a supervision position. 28% are working longer than 1 and less than 3 years in the current field and the majority of 64% has more than 3 years working experience.

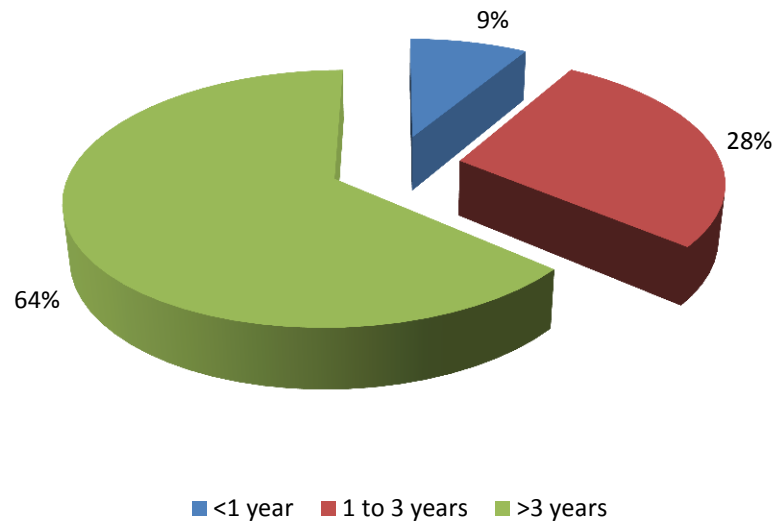


Figure 32 – Working experience

Question 18 (multiple choice with one answer possibility) - How were you recruited to your current position?

Getting the right people for the right job at the right time is challenging, in the technical field even harder. According to the results of this question it's obvious that almost $\frac{2}{3}$ are recruited internally while $\frac{1}{3}$ are coming from external companies.

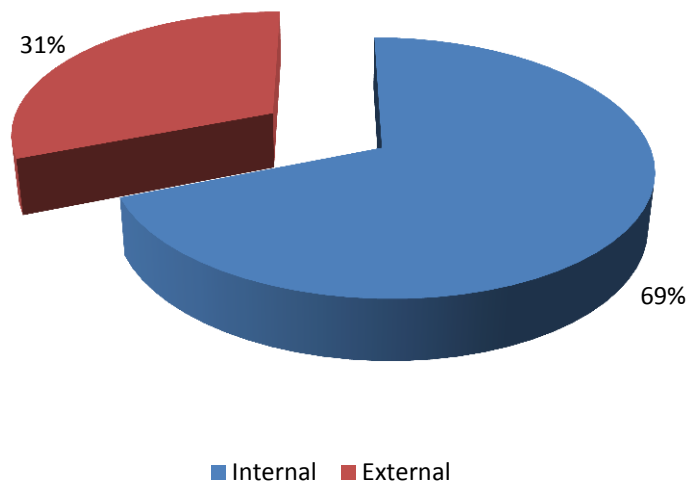


Figure 33 – Recruiting

Question 19 (multiple choice with more answer possibilities) - In what areas have you worked before you switched to the current position?

Similar to question number 6, the respondents were asked in which department they worked before they changed to their current role. 48% have experience in the product development field, 47% worked in product management before, 43% have project management knowledge, 21% are sales experienced and 7% are out of the marketing field. The remaining 35% have another background like exemplarily: Customer Services, Technical Sales Support, Application Engineering, General Management, Key Account Management, Manufacturing, etc.

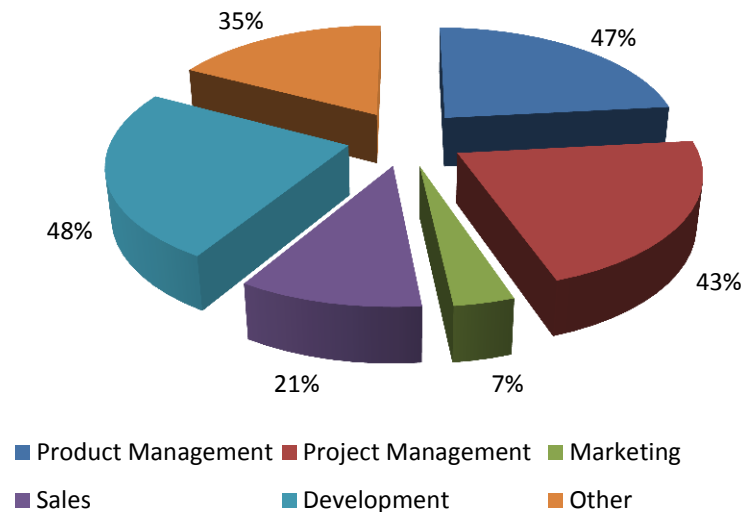


Figure 34 – Areas of experience

Question 20 (multiple choice with one answer possibility) – Please choose the ITS Business Unit you are belonging to.

The results of this question can be found in chapter 3 figure 10 – response rate.

Question 21 (multiple choice with one answer possibility) – Are career opportunities visible for you within your department?

Probably one of the most striking results within this survey will be unveiled by the next question. 67% cannot see clear career opportunities, 22% have a visible career path and 10% have no opinion on this topic. In addition the respondents were asked what they are missing in particular; some examples can be seen enclosed:

- a clear message from the top management to involve Product Managers
- an opportunity for my personal development
- I'm missing almost everything in this respect

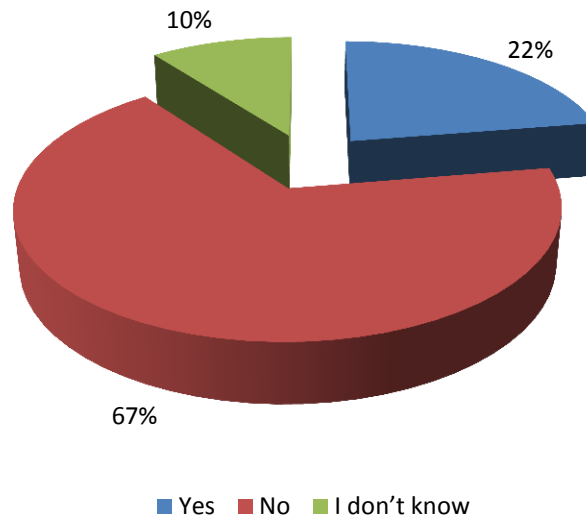


Figure 35 – Career opportunities

Question 22 (multiple choice with one answer possibility) – In which position do you work now?

The second last question makes segmentation into product managers and their supervisors possible. Almost $\frac{3}{4}$ of the respondents are in the product management field while $\frac{1}{4}$ of the target group was represented by their supervisors.

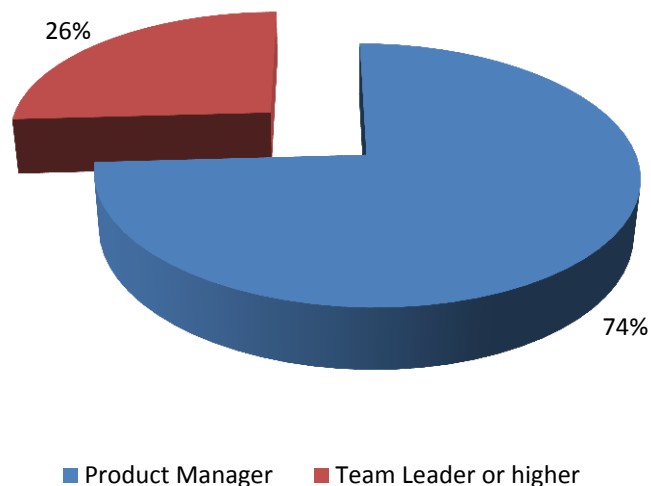


Figure 36 – Current position

Question 23 (multiple choice with one answer possibility) – Product Management Development: Which classification makes sense in your business environment?

The last question of the survey deals with employee development and shows how the respondents would classify the product management. 46% would recommend a division in classical product management and senior product management. 18% think that a three-step process with trainee, junior and senior product manager makes sense. 12% would divide the job contents only in junior and senior and after all 24% don't think it's a good reason to move away from the current approach. The answers of this question will be further discussed in the chapter recommendations for improvement including proposals how product management could be defined in the future.

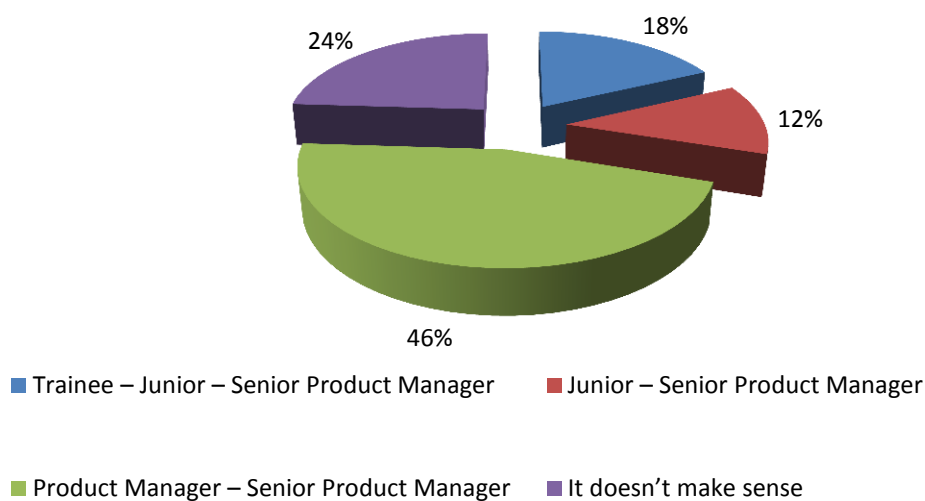


Figure 37 – Possible job segmentation in product management

3.2 Research analysis and main findings

In order to meet the main- and sub-objectives and for a final quantification of the results three main directions for the analysis will be followed:

1. Analysis of the results with segmentation of product managers and supervisors views.
2. Investigation of business unit specific results
3. Analysis of the overall results of main question groups I to IV

The percent numbers in brackets represent the majorities of the corresponding respondents groups.

3.2.1 The views of Product Managers vs. their Supervisors

In addition to the results of chapter 3.1 the first investigation will concentrate on how product managers see their role and responsibilities in contrast to their supervisors. In advance it can be said, that both target-groups had very similar views, in the attached analysis only deviances of the first three questions will be investigated in detail. For a better visualization all answers of these 3 questions for both target groups, Product Managers (PM) and Supervisors (SV), are displayed in stacked column charts.

The results of the first question (requirements of a product manager) showed two minor deviations:

Product managers (33%) think it's very important to be able to train the own product in contrast to their supervisors (47%), who think it's only important. Basically it's not one of the main responsibilities of a product manager to hold a product specific training. Although being able to do so requires a deep product knowledge which is on the other hand a huge advantage for performing in this job area. The detailed responses are visualized in the next diagram.

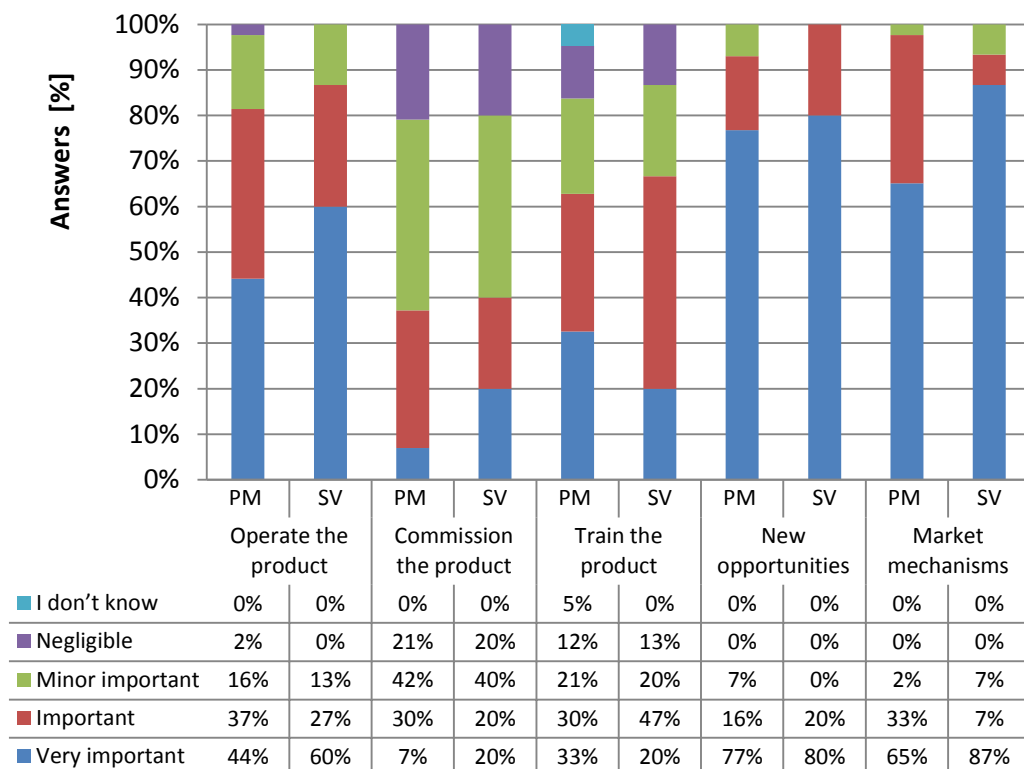


Figure 38 – PM vs. SV - Requirements, part1

The second striking result is that supervisors would like to see more participation at sales negotiations of their product managers, 53% think it's important. The product managers on the other side (42%) see it as a minor important task according to the results of the next diagram. In general each product manager should take the chance to attend these kinds of negotiations with suppliers and customers for several reasons: Getting information about the focuses of customers respectively purchasers enables the product managers to adapt argumentation guidelines, sales material, benefits etc., participating at negotiations with suppliers gives the unique chance to discuss cost saving potentials, future developments and finally supports the internal purchasing department with technical arguments.

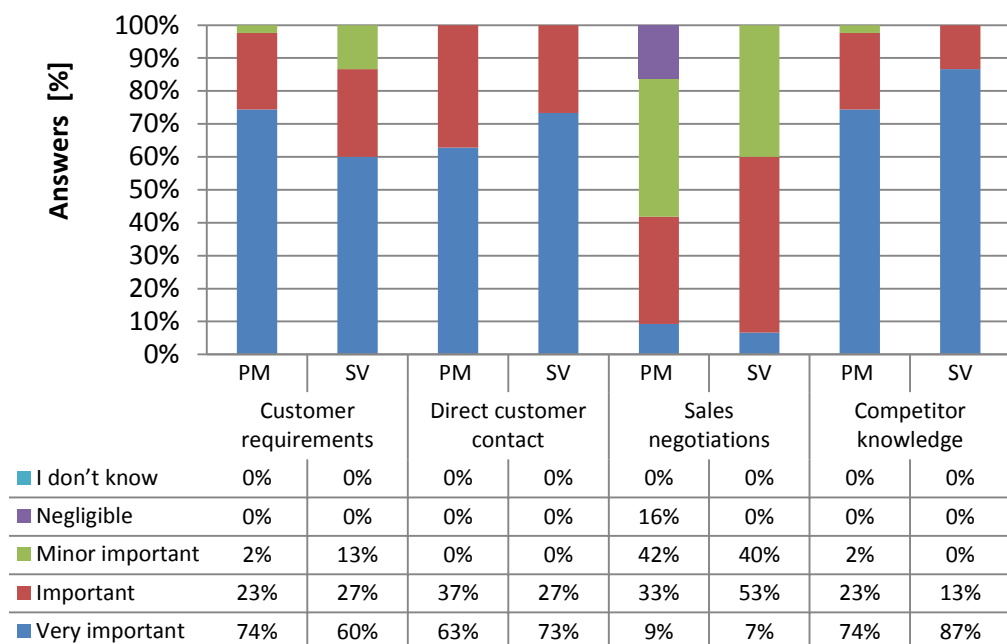


Figure 39 – PM vs. SV - Requirements, part2

During the analysis of the 2nd question (tasks within product management) more deviations could be observed:

The first is that product line strategies are sufficiently handled in terms of time exposure according to the majority of product managers (43%); their supervisors on the other side (33%) see a need for more time effort in this respect. Creating a sophisticated mid-term strategy is essential for every product line responsible. How much time and resources shall be spent can hardly be predicted due to the fact that

it depends on many factors like exemplarily competitive level, market situation and strategic importance.

A sale of high complex investment goods is completely different to fast moving consumer goods (FMCG) for example where huge marketing campaigns create personal involvement of private customers. A supplier/ customer relationship in the automotive industry works differently, technical facts mainly dominate the decision process and expressive sales arguments are needed. Product managers (42%) see a need for further improvement and would like to spend more time on this topic while the supervisors (60%) think the sales arguments (USP's) are well defined and sufficient time is allocated. The details can be seen in the enclosed graph.

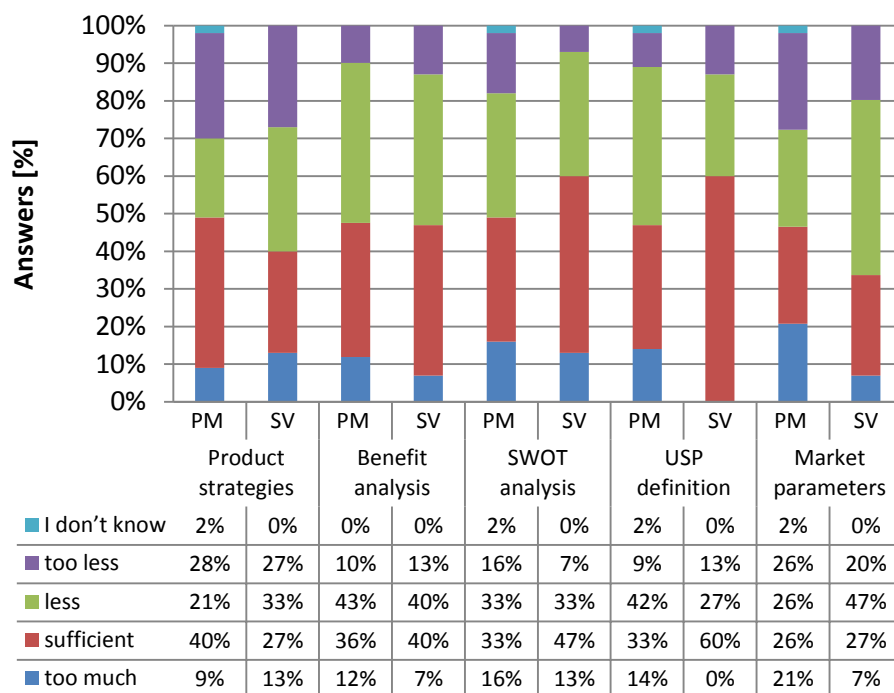


Figure 40 – PM vs. SV – Tasks of product managers, part1

Creation of article texts is also one of the most time consuming tasks the product managers (51%) are challenged. Their supervisors (60%) think sufficient effort is spent in this field. Summarizing it can be said that the high majorities show quite differing views. It's obvious that these operative tasks are underestimated by supervisors from time to time.

Understanding customer needs and transferring them into future products and options is probably a simplified description of the job content of a product manager. Collecting the right requirements is one of the biggest challenges product managers are faced on a daily base. 44% of the product managers think less time is spent to

sufficiently gather requirements while 67% of their supervisors think sufficient effort is spent. The detailed results of these two examples can be seen in the attached diagram.

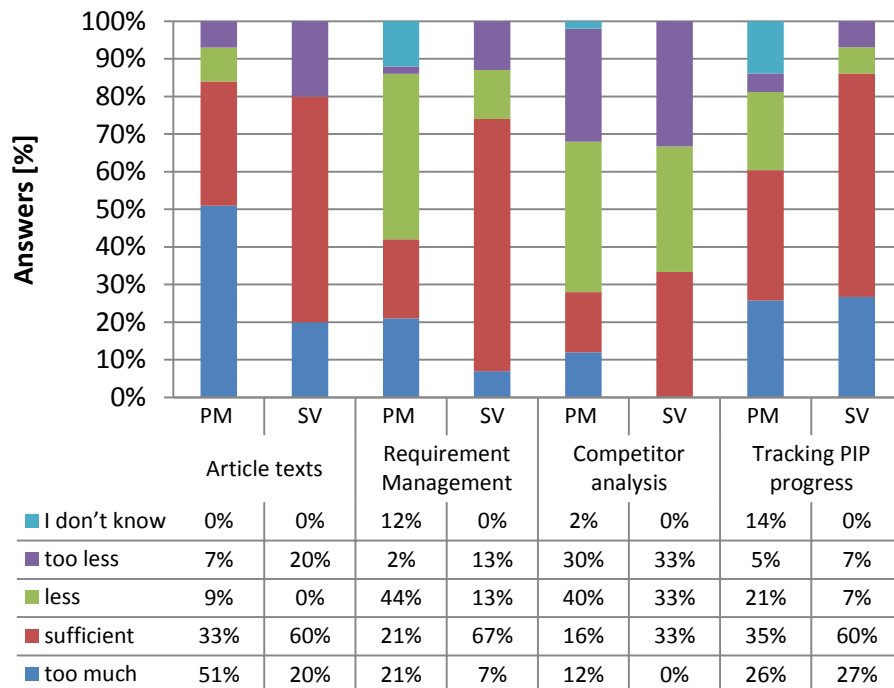


Figure 41 – PM vs. SV - Tasks of product managers, part2

The last deviation in the 2nd question block is related to internal and external sales documentation. According to the following diagram 47% of the product managers think sufficient effort is spent while 47% of their supervisors think too many resources are allocated for these topic and other tasks should be focused instead.

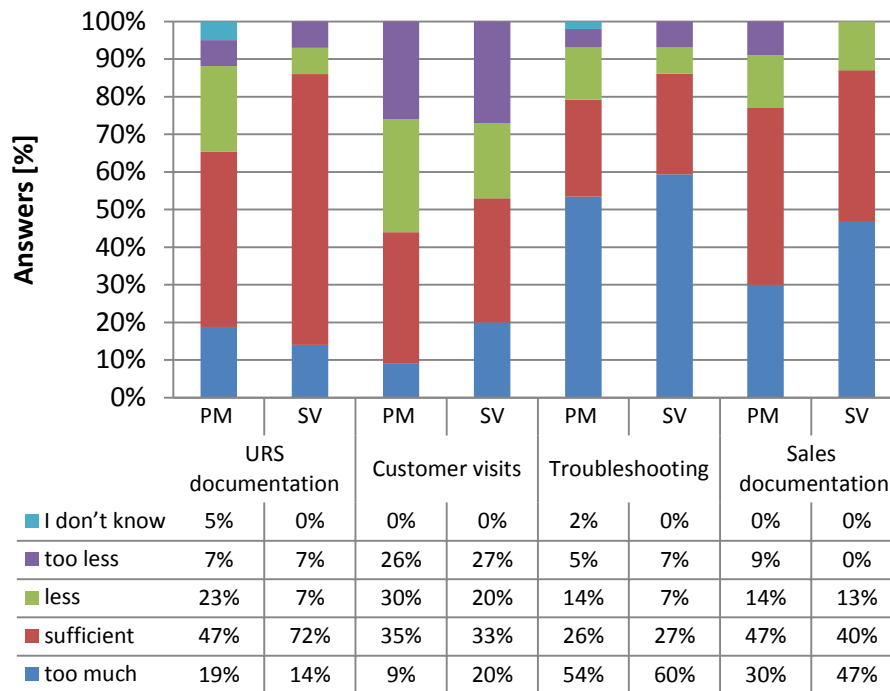


Figure 42 – PM vs. SV - Tasks of product managers, part3

The last analyzed question (tools and applications) showed additional minor deviations:

The first is related to the commonly used tool Offer II, where Product managers (35%) said they use it only occasional while the supervisors (47%) think it's used on a frequent base. At this point we should question the role and tasks of a product manager again – basically product managers should support the sales in the quotation phase, but not creating final quotations. Interestingly enough it seems the supervisors have a different opinion on this. In addition to these results further tools are analyzed in the enclosed graph.

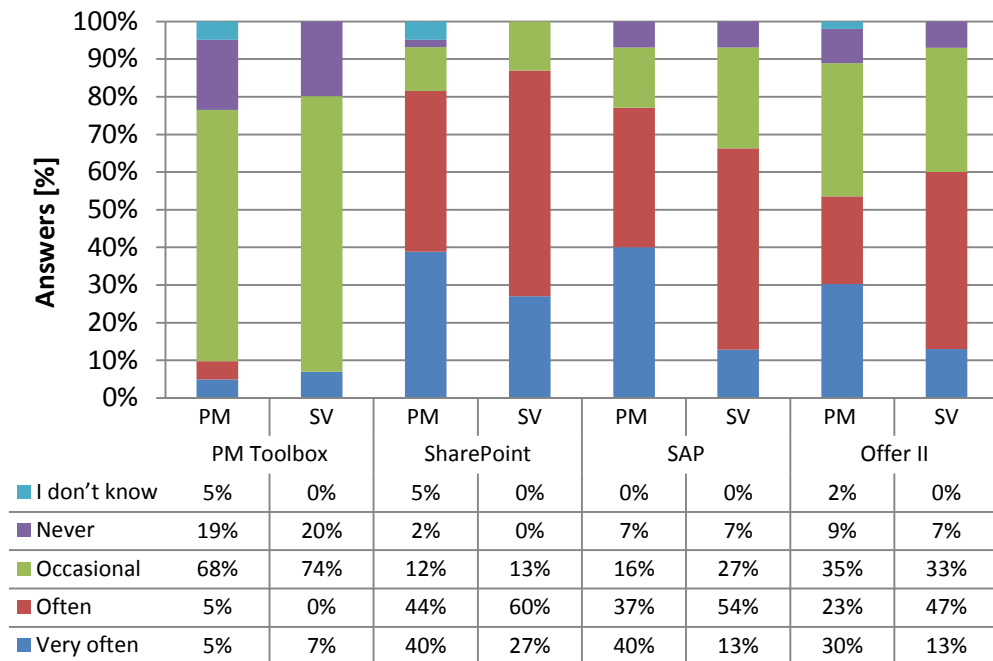


Figure 43 – PM vs. SV – Tools and applications, part1

As last deviating tool the so called Product Information Management (PIM) could be identified. In the product management field (49%) it's used too often according to our respondents while their supervisors (54%) see it as an often used tool. The deviation here is more or less minor; still the evaluation of product managers resulting in a high time effort shouldn't be neglected.

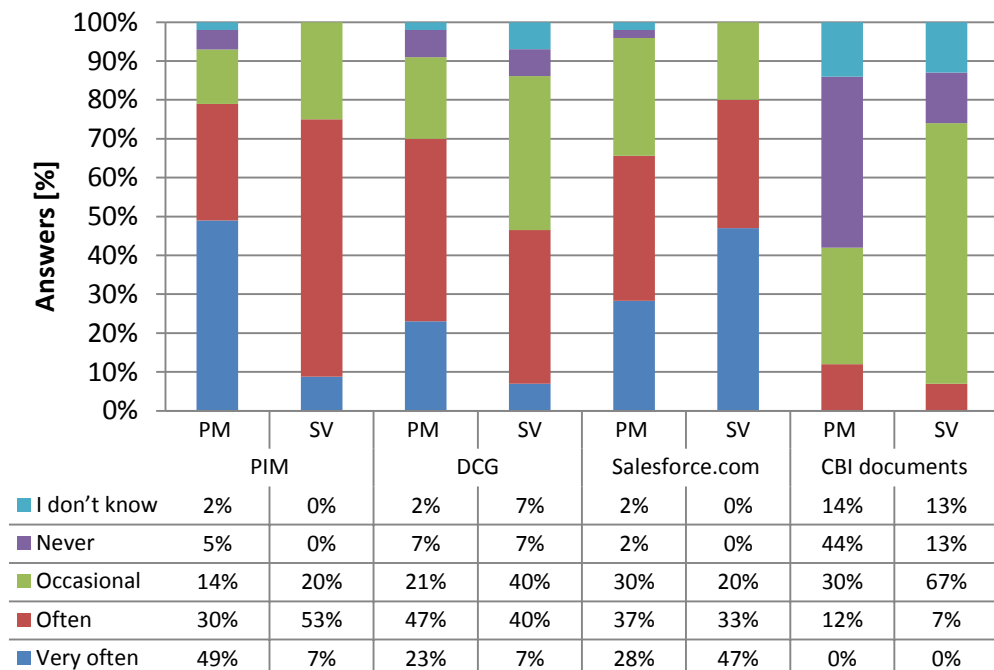


Figure 44 – PM vs. SV – Tools and applications, part2

Basically it could be observed that almost all answers of both target groups had very similar results. Product managers understand what their supervisors are expecting, the role seems clearly defined and obviously both target groups are collaborating quite well with each other. Some minor improvements could be applied; most of them are already mentioned within this chapter.

3.2.2 Business unit specific deviations

Based on the results of the previous analyses differences in relation to the business unit affiliation will be examined within this chapter. One of the expected outcomes is a business unit wise identification of the main differences for certain areas of the questionnaire. Similar to the previous results, the answers weren't deviating very strongly from each other. For validity reasons the results of business unit N were excluded because only one respondent replied. Like in the previous chapter the questions 1 to 3 will be investigated in detail, in addition question 11 (training recommendation) will be also part of the examination. In contrast to the previous analysis only the answers of the corresponding questions will be visualized subsequent to the explanation. Displaying all answers at this point would go beyond the scope of this master thesis.

The exploration of the requirements and their ranking showed following differences:

Members of the business units I (69%) and M (54%) find it very important to operate the own product while business unit S (83%) affiliates have due to their product attributes less need for product trainings which explains the minor importance. Business unit E (67%) and P (33%) respondents find it important to be able to work with the individual products. It's obvious that depending on the business unit respectively product portfolio different approaches are followed. Members of E and M are involved in the instrumentation and system business which often requires hands on mentality to fully understand the product features. Business unit I focus on software and automation solutions where autonomous operation of the products is required from product managers. Business unit S is service related where products in the common sense does not exist, which explains why the majority thinks its minor important. Finally business unit P members are dealing with testbeds and test field equipment where active operation is not always applicable, still most of the respondents find it important.

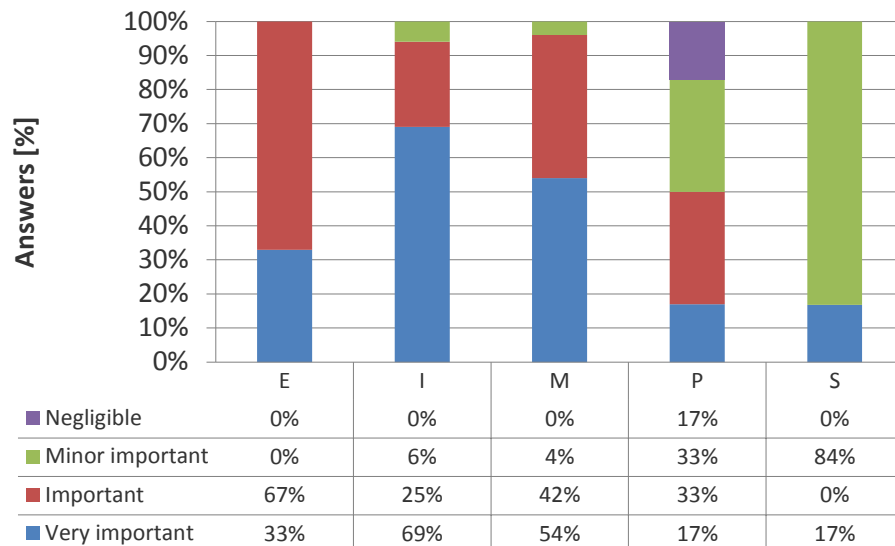


Figure 45 – BU specific analysis – operating own products

Training of the own product is the next requirement where deviations could be observed. Business unit E answers scattered a lot from minor to very important, a clear association is not possible at this point. More unity had the respondents from I where 50% think it's important to train the own product. The majorities of M (42%) and P (33%) find it very important for product managers to perform training while 50% of business unit S members see it minor important.

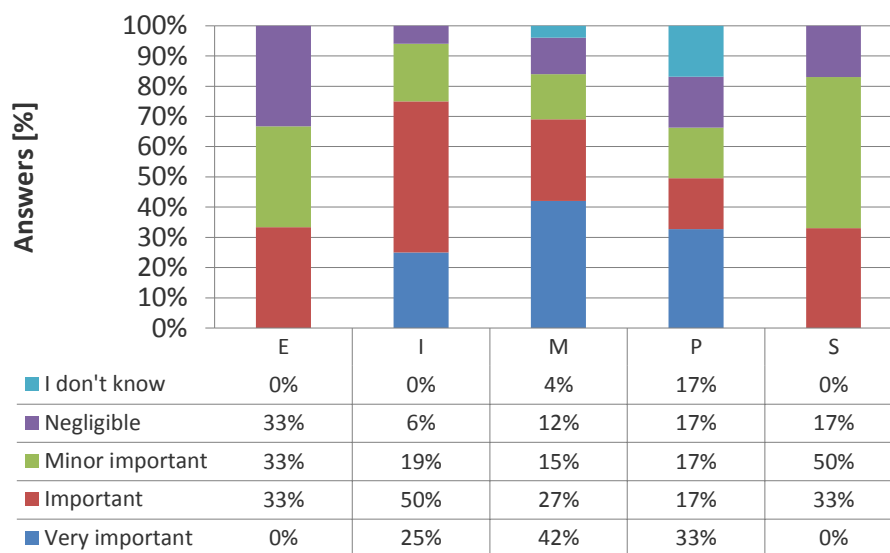


Figure 46 – BU specific analysis – training own products

Investigating the tasks of product managers in terms of time exposure unveiled very interesting characteristics on a business unit specific level:

Product line strategies are sufficiently handled within the business units M (39%) and P (67%) in terms of time exposure. Business unit members of E (67%) and S (50%) claim that too less time is spent on refining strategies. The results of business unit I scatter from sufficient to too less quite a lot. It's evident that refining strategies counts to the most important tasks in the product management field, according to the responses minor improvements could be applied in some business units.

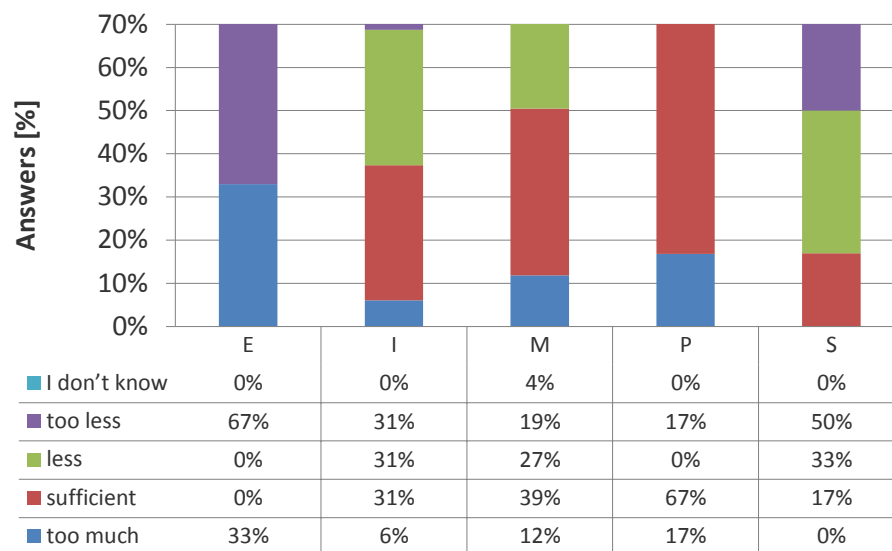


Figure 47 – BU specific analysis – Product line strategies

Market parameters like market potential, market volume or competitive level are gathered sufficiently only in business unit M (42%). All other respondents noted that less time is spent like business units I (44%) and S (67%). Members of E (67%) and P (50%) even replied that too many resources are spent in this area. Knowing the market is crucial for successfully positioning a product and for defending the current market position. This kind of information can only be gathered out of the field, therefore it's so important that every product manager knows the customers, understand how they are using the products and finally monitor each single step of the main competitors. These guidelines pick up directly to the results of the next question where customer visits are elaborated more in detail.

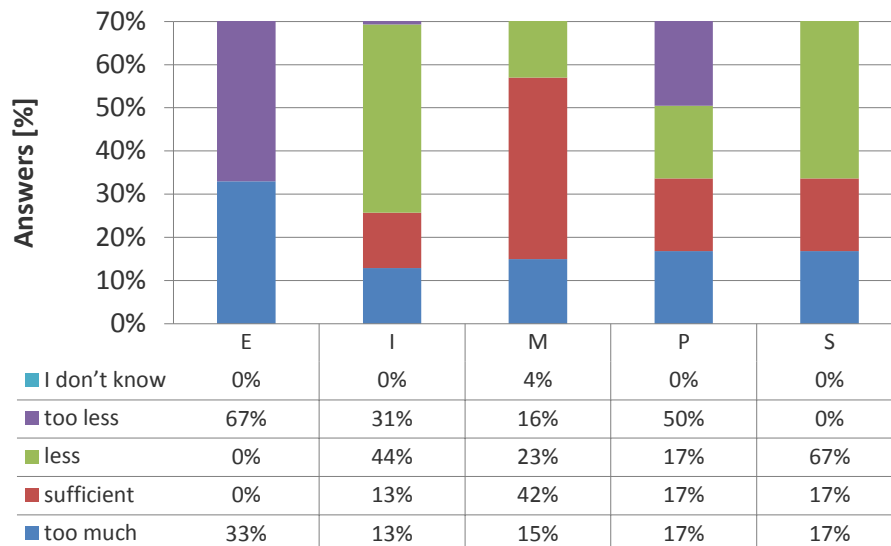


Figure 48 – BU specific analysis – Market parameters

Sales support in form of direct customer visits are performed sufficiently within business unit M (46%), respondents from E (67%) and S (67%) spent less time for getting onsite pictures. Colleagues from I (50%) find too less time is spent going to customers and interestingly one third of business unit P members spent too much time visiting the customers and one third too less time. Here the answers within one business unit differ very much; this can be explained by the variety of products each product manager is responsible for.

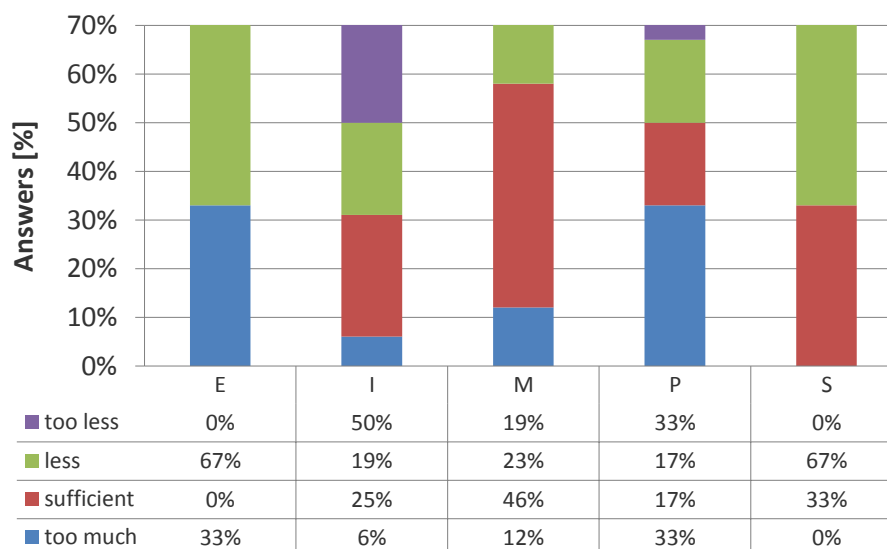


Figure 49 – BU specific analysis – Customer visits

In terms of used tools two minor differences could be observed:

Offer II is heavily used by members of P (67%) and S (83%) while colleagues from E use it often (67%) in contrast to business unit M members (35%) who use it occasional. Within business unit I 44% use it often and 44% of the respondents occasional. Striking here is that the quotation managers are frequently used by colleagues from M in contrast to the remaining business units where product managers often take over the task of creating offers.

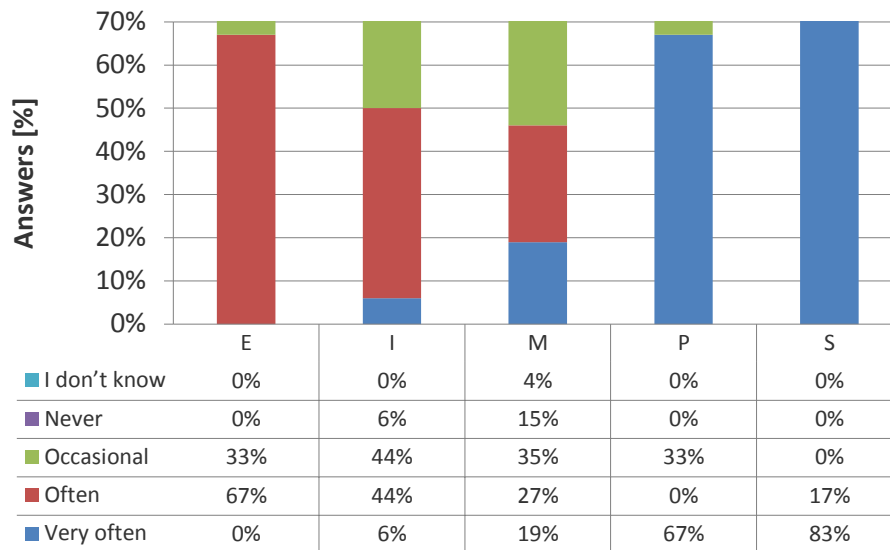


Figure 50 – BU specific analysis – Offer II usage

The last observed tool, CBI, gets very less attention according to our respondents. 100% of E members never use it like 84% of P members. The majorities of the remaining business units use the tool occasional. Although only a minority of respondents use this tool on a frequent base it can be remarked that it helps creating the right sales arguments and finally the sales representatives use it as preparation for upcoming customer visits.

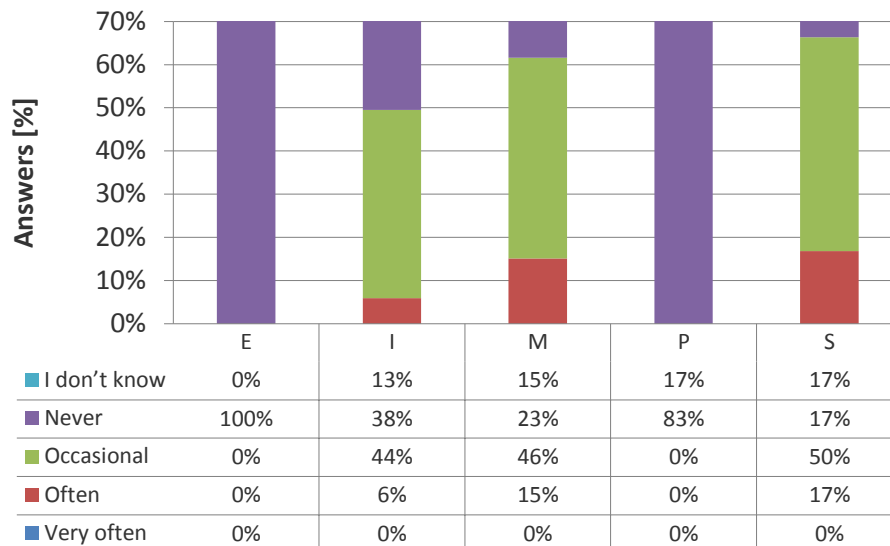


Figure 51 – BU specific analysis – CBI usage

Question number 11 (recommendation for product management training) finally shows the last deviations between the business units.

100% of E members, in absolute numbers 3 respondents, would recommend the training in the current form; it seems it totally fit their needs. Business unit M (39%) and P (50%) have a different opinion and require respectively expect improvements. The majorities of I (44%) and S (67%) had no opinion. It can be said that only one business unit is fully satisfied with the training, for the remaining respondents it's time to change.

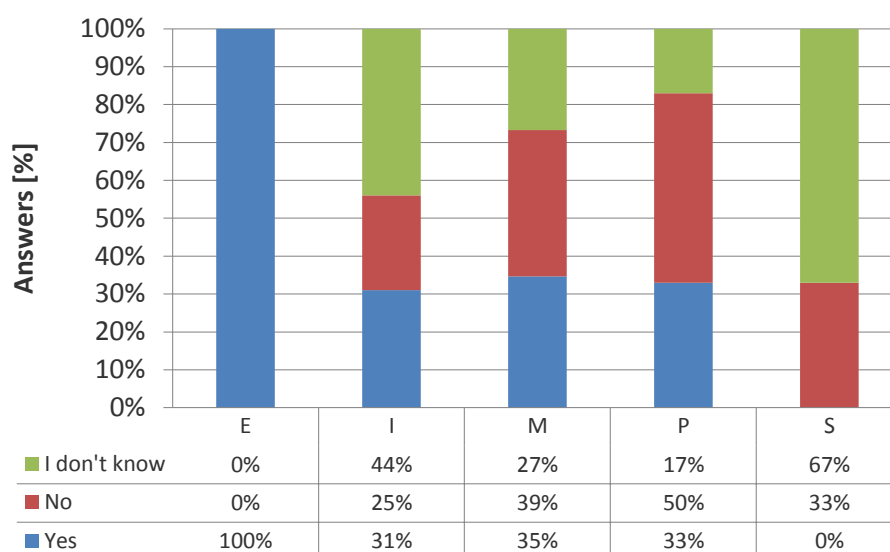


Figure 52 – BU specific analysis – Recommendation of current training

Summarizing it can be said that most of the members of the corresponding business units have same opinions respectively are facing the same challenges. Improvements should be applied in the market parameter field, product line strategies should get higher attention and the usage of CBI documents in the future should be considered carefully. The training recommendations and the fact that only a minority is satisfied with the actual training design will be discussed in chapter 3.4.

3.2.3 Result analysis of all answers from the main question groups

The final analysis summarizes the results of all main question groups and displays the most striking findings.

Question group I

During the overall analysis of the first question it could be observed that the requirements of a product manager are well known within the target group with similar majorities in terms of importance of the individual examples. Only the active participation at sales negotiations split the target groups into two halves, a more detailed description of these results was given in chapter 3.2.1. The second question showed that product managers are too much confronted with operative sales support respectively troubleshooting. These kind of tasks and responsibilities should be transferred to the sales force respectively the affiliates via more intensive trainings in the long run to sustainably reduce the workload of the product managers. The third question unveiled that the so called PM toolbox, the main part of the product management training in terms of tooling, is only occasional respectively never used by most of the respondents. Similar results gave the question how often the CBI documents are used. These findings will be further discussed in the improvement chapter. The last question, number four, of the first main group showed no astonishments, 6 main responsibilities could be identified which go in line with the general understanding of product management within AVL.

Question group II

The fifth question showed that almost 70% of the respondents participated at the training which highlights the relevance of the collected answers. Striking at question number six was that almost every respondent received a technical education while 35% come out of the economic field. These results underline the importance of a good technical knowledge base for performing in this specific job environment. Continuing with question number seven showed that only 40% of the respondents are satisfied with the training approach in the current form, 28% in contrast showed

dissatisfaction. Question number eight made clear that a high majority of 81% see practical contents during the training as most valuable. Interesting at question number 9 was that all additional training approaches were ranked as useful respectively very useful, possibly a hint that these additional contents should be considered for future trainings. That improvements at the current training contents are necessary unveiled the next question. Only the product innovation process, product lifecycle management and the product launch process are covered to a satisfying extent according to the respondents. The other contents (details can be found in chapter 3.1.2) are only partly covered nowadays which underlines the need of refinement. The final question of this group highlighted again, that only 33% would further recommend the training while 33% wouldn't do so. Summarizing it can be said that the respondents made a clear statement that the training in the current form only partly fits their complex needs.

Question group III

Within this group no real striking abnormalities could be observed. Almost all respondents ranked the exemplarily given soft skills as important respectively very important. Based on the results of question group II it should be mentioned that specific soft skill trainings should be also considered during the refinement phase of the future training approaches – that's at least what the respondents demand.

Question group IV

Finally the last group gave a lot of valuable information of the respondents which made the final quantifications possible. Question 17 displayed that almost 65% have a work experience greater than 3 years and the next question showed that 69% were recruited internally. It can be said that the fluctuation in this job environment is relatively low with a high number of internal applicants. Question 19 gave an overview of the work areas the managers worked before while question 20 showed the business unit the respondents are belonging to. The most striking results of the entire survey gave the next question, number 21. 67% of the respondents see no clear career development path in their current job, only 22% do so. Beside the current management development programs it seems that most of the employees missing guidelines how the individual could develop itself. The next question divided the group into product managers and supervisors and the final question included some ideas how product management could be defined in the future – more on this in chapter 3.4.2.

3.3 Identified problems

During the analysis of the research topic some problematic areas in the field of product management development within AVL could be identified. Most of these topics were already addressed in the previous chapters, at this point only the 4 most critical findings will be summarized.

1. *Operative vs. strategic tasks*

Product managers at AVL are often overstrained with operative tasks like creating sales documentation, troubleshooting of technical issues or taking over tasks out of their field of responsibility like creating offers. These tasks bind many of the scarce resources and hinder them to concentrate on essential strategic tasks like refining strategies, investigating target markets and so on.

2. *Required vs. trained tools*

One of the research outcomes was that the tools SharePoint, SAP and PIM are very frequently used by most of the product managers. Unfortunately none of them are part of the current product management training. Currently the training focuses mainly on the PM toolbox which is only rarely used by the respondents in the daily business life.

3. *Target group orientation of the actual training approach*

Based on the previous point and according to the replies of most respondents it can be summarized that the current training method does not entirely fit the needs of the target groups and should be refined. Exemplarily the missing soft skill part represents a major threat during the education of product managers.

4. *Career opportunities*

That almost 70% of the respondents cannot perceive career opportunities within their business environment is a striking fact. At this point these results will not be discussed any further, generally it can be said that this specific topic needs higher attention in the future.

3.4 Recommendations for improvement

Analyzing the research results unveiled some fields in the area of product management within AVL where recommendations could be applied. Some of them were already given, this chapter focuses first on general improvements and second on a possibility how product management could be restructured.

3.4.1 General proposals for improvements

The first general suggestion is to reduce the operative workload by focusing on core competencies of product management on the one hand and on the other by efficiently develop the sales force in terms of skills, knowledge and technical competencies on a mid- to long-term horizon.

The second proposal is to critically analysis the usage of the PM toolbox in the current form. Without question the tool itself is mandatory for every product responsible, but the way it's designed, the incredible amount of tools and the usability needs to be improved. It's a pity when the training mainly focuses on a certain tool which nobody uses frequently in the daily business life.

The third suggestion is strengthening the usage of CBI documents within the product management group and beyond. A possible solution would be to design the templates more user friendly that the product managers and sales people have more fun filling it out.

Another proposal is to implement specific sections in the product management training for the tools SAP, SharePoint and PIM. One remark at this point: the tool PIM will be substituted by the AVL Quote system, incorporation of this new tool into the upcoming trainings is highly recommended.

The fifth recommendation is to investigate and possibly extend the training contents by alternative methods mentioned in the ninth question of the survey. Especially the topics presentation skills, personal coaching or communication trainings should be addressed in future. In addition the implementation of a specific soft skills section should be considered.

The final proposal is to strengthen the role of product managers generally in terms of competencies and leadership within AVL. Being responsible for topics with are not in the own area of influence is almost impossible to reach without leadership possibilities.

3.4.2 Stage Gate Process – Product Management

In accordance with more than 75% of the respondents a further segmentation in the area of product management should be considered. The following stage gate process is one example how this business environment can be structured including the definition of the specific gates respectively phases.

- Phase 1: Right after the interviewing process including selection the initial phase of the development process starts. Every newcomer receives mentoring from a skilled “Senior Product Manager” and learns by means of an on the job training the basics of this management discipline. The aim of the first phase is to give new employees the chance to form a solid baseline within a period of 6 months. Within this timeframe the newcomer works in the role of a product management supporter and has no product responsibility yet.
- Quality Gate 1: After the initial learning period the first “testbed” in form of an open discussion is waiting for the future product manager. The committee consists of his mentor and the corresponding segment manager. Within the discussion the essential basics should be reviewed and future development possibilities discussed. After a successful approval by the committee, phase two starts.
- Phase 2: The second phase lasts approximately one year and includes the standard product management training. At this time the junior product manager is responsible for a single product, receives frequently coaching from his mentor and starts to transfer the learned theory into practise.
- Quality Gate 2: Together with a successful completion of the standard training the second committee round will meet to estimate if the promotion to a group product manager is justifiable. In addition to the members of the first quality gate, the head of product management shall also participate at this meeting. The junior product manager should hold a strategy presentation including all relevant viewpoints about the single product he was responsible for. Finally the committee decides which product line the group product manager takes over.
- Phase 3: The last phase in the educational process is characterized by particular expert trainings tailored for the individual employee. The aim of this phase is to deepen the product specific knowledge, strengthen the managerial skills and finally successfully manage an entire product line.
- Quality Gate 3: As the last step before the promotion to a senior product manager the final quality gate shall prove if all relevant points are understood, the product line handled successfully and management skills deepened enough. The committee shall consist of all members from the previous gates including the global business unit manager. When the senior product manager is promoted further development steps like the management development program shall be critical discussed within this forum.

The advantages of this approach are transparency with clear role definitions, visualized career prospects, coaching methodologies within the single departments, high motivational aspects for young employees and regular quality gates for segment managers and the head of product management to better overview the overall situation.

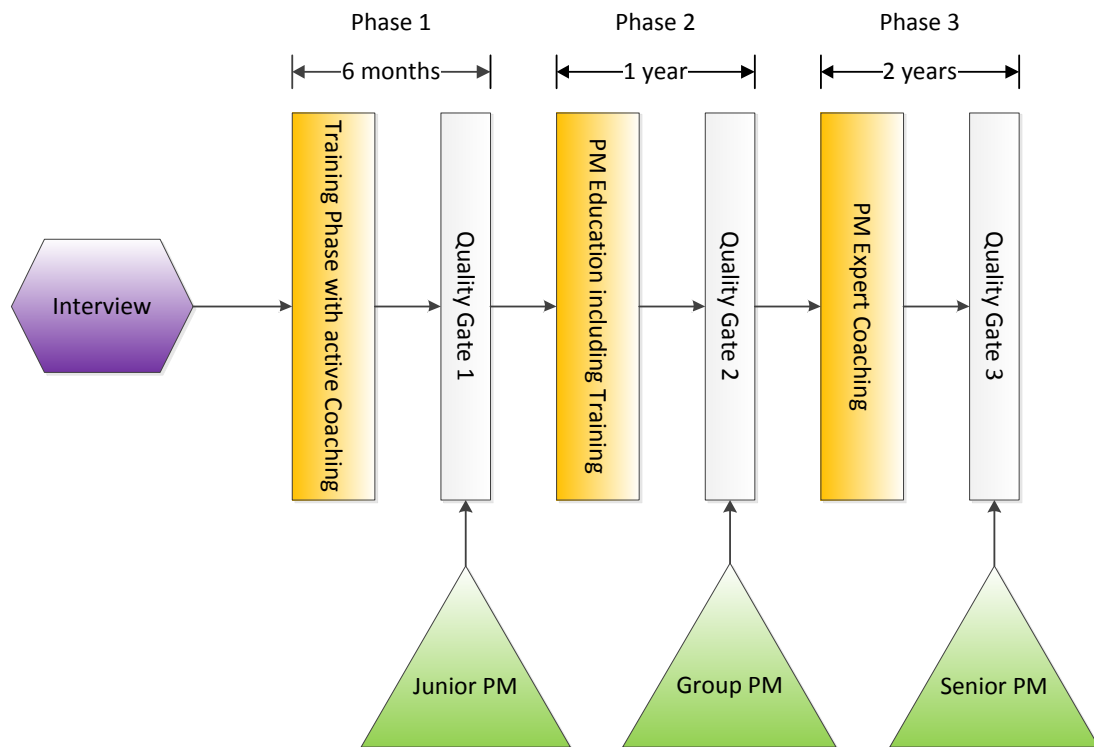


Figure 53 - Stage Gate Process Product Management

3.5 Hypotheses evaluation

After taken into account the results of the research, the final evaluation of the initial hypotheses will be done within this chapter.

- Product Management training does not reflect entirely what's needed on the job.*

The first hypothesis could be confirmed, most of the respondents are not entirely satisfied with the current training approach, improvements are required and important training contents are missing.
- Product managers are often overstrained with internal and external interface management.*

The second hypothesis can be confirmed as well. According to the majority of product managers the operative tasks are outweighing in their business area,

too less time is spent for strategic tasks and often other jobs out of the own field of responsibility are performed.

- *Supervisors see the task and roles of a product manager differently than the product managers itself.*

This hypothesis could not be confirmed. Interestingly the teams of supervisors and product managers have almost identical points of views regarding tasks, responsibilities and expectations.

- *Training requirements differ from business unit to business unit.*

The next hypothesis could be partly confirmed. In general it's difficult to entirely confirm at this point, the answers from the respondents scattered quite much, it can be said that similar directions of alternative training approaches are required; details in this area were not further investigated.

- *Leadership practice and management skills as essential parts are not included in the current training approach.*

Absolute confirmation of this hypothesis was one of the outcomes of the questionnaire. Almost every respondent ranked managerial competencies as important or very important and currently these contents are not part of the training yet.

- *Career paths respectively development plans are not completely visible which could lead to movement of labor respectively fluctuation.*

The last hypothesis could be partly confirmed. On the one hand the fluctuation in these business areas seems low when almost 65% work more than 3 years in the current position. On the other hand 70% cannot see a clear career path or further development possibilities.

Most of the opening hypotheses could be confirmed, two partly and one hypothesis could not be confirmed.

Summarizing it can be noted that the main objective "Analysis of the current product management development process including proposals for improvements" was achieved by a representative research in form of a survey including analysis.

3.6 Conclusion

Product Management counts to the most challenging positions in almost every industry, especially in the field of automotive surroundings. Immense time pressure, extraordinary need for highest quality and strong dependencies of economic downturns characterize just exemplarily the environment product managers are facing. An adequate education tailored for the needs of this job segment represents an essential part which is challenging for every enterprise who implemented product management. The main objective of this thesis was to analyze how one of the top players in the automotive field, the company AVL, is dealing with this challenge and subsequently what can be done in a better or different way. The theoretical part unveiled the necessary characteristics every product manager should bring with him together with a clear definition of the particular job segment. In addition the integration into several organizational units were investigated, followed by a comparison how product management works in AVL and in other industries outside the automotive field. This information formed the basis and gave directions for the research part of the thesis. Finally the research was done by means of a questionnaire within the company AVL with product managers and their supervisors. The high return rate showed on the one hand how serious the target groups dealt with the topic and on the other that there is a need for improvements in this particular education field. Analyzing the results could prove most of the initial hypotheses and identified the parts where improvements should be applied. In the final recommendation chapter several improvements were suggested together with a stage gate process for possible future product management within AVL.

Product Management within AVL is done in a very professional way not least because of strong personalities in this job area and due to a strong collaboration between product managers and their supervisors. Many valuable processes and tools are in place which support and help product managers to achieve the most important goal – position the product as best as they can on the markets. There is definitely room for improvement but if these proposals or changes will be implemented in the future and to which extent depends mainly on the company AVL. For sure additional costs in terms of training adaptations, resources and bureaucracy will be generated, but it's a good investment and will pay back within shortest time when the product managers are even better prepared for the professional life after attending the training.

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Attachments

Appendix 1 – Questionnaire

Dear colleagues,

Product management can be seen as one of the most challenging tasks within AVL. To prepare best for the exciting area of responsibility AVL has a customized training program since several years in place. This survey aims at the development and improvement of the training program according to the needs of the daily working environment of the product manager at AVL.

Please use this opportunity and help us to develop the training program, the survey will last approximately 20 minutes. The survey is completely anonymous.

Thank you very much

Question 1: Please rate the following market and product specific requirements in the field of product management according to their importance in the daily job of a product manager.

	Very important	Important	Minor important	Negligible	I don't know
Ability to operate the own product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to commission the own product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to train the own product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identification of new business opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding dynamic market mechanisms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Considerate customer & PTE requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Direct customer contact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate at sales negotiations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of the most important competitors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 2: Please rate the following strategic and operative product management tasks according to the current time exposure in the daily job of a product manager.

	too much	sufficient	less	too less	I don't know
Refining Product Line Strategies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feature and Benefit Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SWOT Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
USP definition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market Parameters (e.g. Potential, Volume)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating/ modify article texts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Requirement Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitor analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tracking PIP progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating and refining URS documents (new products, series development)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales Support - customer visits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales Support – troubleshooting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internal and external sales documentation (Sales Memos, Sharepoint Updates, argumentation guidelines)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 3: How often does a product manager use the following tools and applications in the daily business life?

	Very often	Often	Occasional	Never	I don't know
PM Toolbox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharepoint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offer II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PIM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DCG	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salesforce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CBI documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 4: Please name the three most important tasks/ responsibilities of a Product Manager in your point of view

1.	<input type="text"/>
2.	<input type="text"/>
3.	<input type="text"/>

Question 5: Did you participate at the product management training?

☐ Yes

☐ No

Question 6: Which kind of education did you receive before attending the product management training? Multiple Answers possible.

☐ Technical

☐ Economical

☐ Marketing

☐ Sales

☐ Other

Question 7: Is the content of the product management training useful in the daily job of a product manager?

☐ Yes

☐ No

☐ No opinion

Other

Question 8: Which is the most important training for the daily job of a product manager from your point of view?

	Very important	Important	Minor important	Negligible	I don't know
Theory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 9: Please rate additional training approaches according to their utility for the Product Management Training at AVL

	Very useful	Useful	Minor useful	Negligible	I don't know
Personal Coaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training on the job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working for an affiliate for a specific time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conflict Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time and Self-Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership Seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication Trainings (written and verbal)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 10: How good are the Product Managers prepared for following interfaces and processes after attending corresponding trainings?

	Fully prepared	Prepared	Less prepared	Not prepared	I don't know/ not attended
Supply Chain Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Property Rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product Innovation Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Standard SW Development Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product Launch Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product Life Cycle Mgt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality Processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 11: Would you recommend the product management training in the current form to new or other colleagues?

- ☐ Yes
- ☐ No
- ☐ I don't know

Why

Question 12: Communication: Please rate following examples according their importance in the daily job of a product manager

	Very important	Important	Minor important	Negligible	I don't know
Confidence presenting new ideas and strategies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicate in a clear and understandable way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support interchanges of ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listening when others presenting their ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proactive gathering of information outside of the main field of responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trying to motivate people during daily work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trying to resolve conflicts in an open discussion with colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 13: Team Work: Please rate following examples according their importance in the daily job of a product manager

	Very important	Important	Minor important	Negligible	I don't know
Ensuring that team tasks are solved within time and quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rather working in a team than alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Actively contributing to team spirit and motivate people in the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expert in building up networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear communication of mutual goals with team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 14: Self-Management: Please rate following examples according their importance in the daily job of a product manager

	Very important	Important	Minor important	Negligible	I don't know
Easy defensive of the own opinion when confronted by opposing views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behavior focuses on meeting the needs of internal clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behavior focuses on meeting the needs of external clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allocation of time and resources efficiently to achieve personal and professional goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concentration on more than one project at the same time, without influencing them mutually	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 15: Intercultural Competence: Please rate following examples according their importance in the daily job of a product manager

	Very important	Important	Minor important	Negligible	I don't know
Awareness of the impact of own behavior to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adaption of own behavior to individuals and groups from different national and job-related cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active promotion of interaction between people from headquarter and affiliate group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 16: Leadership: Please rate following examples according their importance in the daily job of a product manager

	Very important	Important	Minor important	Negligible	I don't know
Manage meetings in a way that meets the objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modify the own behavior to meet the needs of others, the task and the organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keep promised actions on tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding potential organizational problems or opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability of leading without sword in situations where collaboration with other departments is required	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="text"/>				

Question 17: How many years are you working in your current position?

- ☐ <1 year
- ☐ 1 to 3 years
- ☐ >3 years

Question 18: How were you recruited to your current position?

- ☐ Internal
- ☐ External

Question 19: In what areas have you worked before you switched to the current position? Multiple answers possible.

- ☐ Product Management
- ☐ Project Management
- ☐ Marketing
- ☐ Sales
- ☐ Development
- ☐ Other

Question 20: Please choose the ITS Business Unit you are belonging to.

- ☐ E
- ☐ I
- ☐ M
- ☐ N
- ☐ P
- ☐ S

Question 21: Are career opportunities visible for you within your department?

- ☐ Yes
- ☐ No
- ☐ I don't know

I'm missing

Question 22: In which position do you work now?

- ☐ Product Manager
- ☐ Team Leader or higher

Question 23: Product Management Development: Which classification makes sense in your business environment? Please choose one

- ☐ Trainee – Junior – Senior Product Manager
- ☐ Junior – Senior Product Manager
- ☐ Product Manager – Senior Product Manager
- ☐ It doesn't make sense
- ☐ Other