

Competency Profiling for Product Managers

Mariana Franco Fernandes

Project submitted as partial requirement for the conferral of
Master in Business Administration

Supervisor:

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RESUMO

Embora a importância do cargo de gestor de produto no sector empresarial seja reconhecida e bastante documentada na literatura (Gorchels, 2003; Haines, 2009; McNaughtan, 2013), existe ainda alguma ambiguidade em relação à função e às responsabilidades da profissão, bem como aos fatores que geram um desempenho eficaz. Adicionalmente, sendo a gestão de produto uma ocupação com aproximadamente 86 anos, carece ainda de referência na base de dados ocupacional americana (O*NET). Além disso, não está ainda desenvolvida uma fonte de conhecimento completa e estruturada que agregue toda a compreensão atual da profissão e existe somente um pequeno número de cursos disponíveis aptos para prepararem os gestores de produto para o seu futuro. Por estes motivos, é importante que se trace um perfil de competências para o gestor de produto, de forma a ajudar tanto as empresas nos seus processos de recrutamento, como os próprios profissionais que procuram progredir na carreira.

Para alcançar os objetivos propostos foi criada uma matriz de competências baseada fundamentalmente em duas autoras que têm publicado frequentemente sobre o tema (Linda Gorchels e Zuzana Wroblowská) e no Modelo Arquitectónico de Roe (Bartram & Roe, 2005). Posteriormente foram aplicados questionários a gestores de produto de variadas áreas. Os resultados são discutidos à luz da literatura e de acordo com os objetivos propostos.

Palavras-chave: Competências, Perfil de competências, Gestão de Produto, Gestor de Produto

Classificações JEL: M39 Outro

ABSTRACT

Although the product manager's role in the corporate sector is considered highly important and approached in literature (Gorchels, 2003; Haines, 2009; McNaughtan, 2013), there is still considerable ambiguity when we refer to the role and responsibilities of product managers and the factors that drive effective performance. Also, besides being an occupation with approximately 86 years old, there's still no reference of product management in the U.S. Occupational Information Network (O*NET) data-base. Additionally, a strong and organized source of knowledge available to the product management practitioner is lacking and the number of academic courses to prepare product managers is still small. For the reasons stated above, it is important to build a product manager's competency profile in order to help both companies in their recruitment processes and professionals who want to progress in their career.

With the view of achieving the proposed goals, we developed a competence matrix based fundamentally on two authors that have recurrently published about the topic (Linda Gorchels e Zuzana Wroblowská) and on Roe's architectonic model (Bartram & Roe, 2005). Afterwards, a survey has been conducted with product managers from various areas. Results are discussed at the light of theory and according to the proposed goals of this work.

Keywords: Competencies, Profiling, Product Management, Product Manager

JEL classifications: M39 Other

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I. INTRODUCTION

The product manager's position was established in 1930s in a noticeable marketing organization called Proctor & Gamble (Luck, 1969). It is said that the concept was created as a way to improve control effectiveness over the ever-increasing product business. Since then, product management has been part of innumerable companies that strive to achieve competitive advantage (Gorchels, 2003).

There are many references in literature that support product manager's role as crucial to obtain customer loyalty, competitive advantage and higher organizational effectiveness and profitability. For instance, Gorchels and Murphy (1996) claim that a dedicated champion for a product/brand provides the best opportunity for the offering's success while McNaughtan (2013) refers that investing in product management improves technology startups' chances of becoming stable and profitable organizations. Furthermore, as reported by Mäkelä and Rönkkö (2008), the knowledge gap between product developers and marketers in software companies has an inverted U-type relationship within product's development performance and therefore moderate levels of asymmetry are desirable but high levels will have a negative influence in product's development success. Such consequences can be mitigated by the presence of a boundary spanning product champion, such as the product manager. In addition, Feinleib (2012) sustains that poor product-market fit is one of the most significant reasons why startups fail to succeed. In fact, market information and orientation is crucial to new product's successful implementation i.e. products that are customer-oriented are more likely to thrive (Aimin, 2015; Duboff and Spaeth, 2000; Ferrel and Lukas, 2000; Ghorbani and Yaghootkar, 2013; Moore; Hult and Ketchen, 2001; Hultink, Langerak and Robben, 2004, 2007; Ottum, 1997). Hence, companies with a product management focus are unlikely to fail for the listed reasons since they validate market needs, improve products or services via customer feedback and ensure the founder's vision is not lost in the process (McNaughtan, 2013).

Although product management literature has focused broadly on creating successful products, creating effective product management organizations is yet an insufficiently approached subject (Sawhney and Tyagi, 2010). For that reason and despite the

importance of the product manager occupation, there is considerable ambiguity when we refer to the role and responsibilities of product managers and the factors that drive effective performance (Bereck, 1998; Gorchels, 2000; Haines, 2009; Katsanis, Laurin and Pitta, 1996; Fullerton and Low, 1994; Lysonski, 1985; Sands, 1979). Additionally, although it is an occupation with approximately 86 years old, there's still no reference of product management in the U.S. Occupational Information Network (O*NET) (Department of Labour, 1992) data-base. Concomitantly, a strong and organized source of knowledge available to the product management practitioner is still lacking (Haines, 2009) and the number of academic courses intended to prepare product managers for their future is rather small (Employment, Social Development and Statistics Canada, 2011).

With the development of this study, we aim to improve the knowledge on the current required competencies for product managers. By doing this we intend to deliver an integrated tool to help professionals to exceed at their jobs as product managers. Additionally, we expect to narrow the gap of information in literature regarding this matter and contribute to clarify some topics about this important occupation for nowadays business companies.

In order to achieve such goals we divided the study into five chapters: a) literature review; b) method; c) results; and d) discussion and conclusion. In the first chapter we approached several topics to deliver a clear theoretical background that enables a comprehensive view of our study. We accessed main recognized product management definitions and explored the factors that have an influence in product manager's effective performance, giving special attention to those internal to the individual such as competencies. Later on we explore the definitions of competencies, selecting Roe's competency model (2002) as the basic structure, and we resume the work of two greater authors that have recurrently published on this theme and whose results were essential for our measure's structure (Linda Gorchels and Zuzana Wroblowská). In chapter two, we explain the methodology used to collect and treat data resulting from a survey destined to individuals experienced in product management. We approach several aspects in detail such as the procedure followed, sample characterization, measures that were used, and data analysis strategy. In chapter three, we present the results from our study and in the last chapter we deliver our conclusions and suggestions for future researches.

II. LITERATURE REVIEW

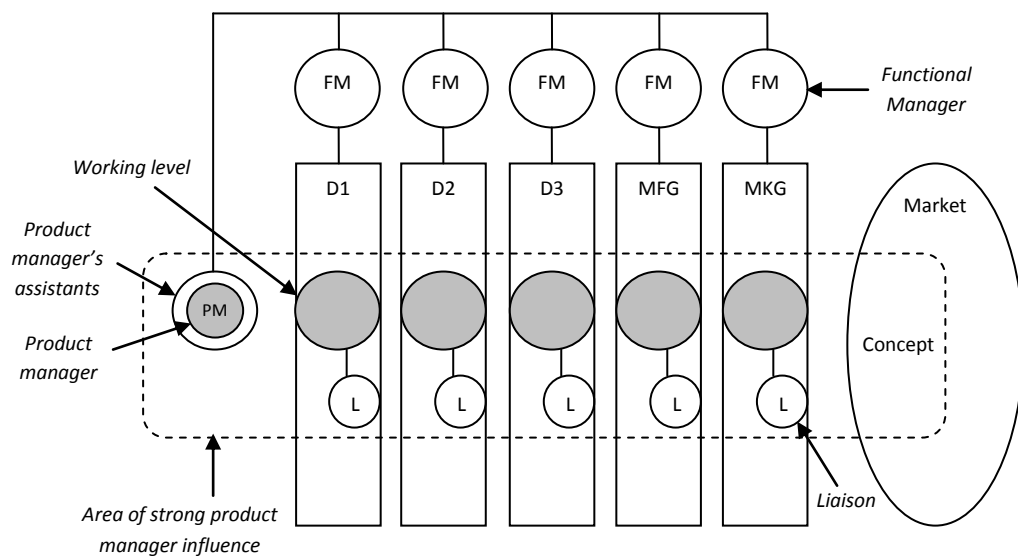
This section introduces relevant theory that will guide the reader in perceiving our research goal and overall investigation problems addressed throughout this study. To scientifically enrich our study, we also resume the current state of art of product management and other related topics.

2.1. Product management definition

Product management is basically a system whereby a group of products (independently of their life cycle phase) are managed by an individual (or team) responsible for their respective success in business (e.g. strong market position, customer satisfaction, and high financial returns) (Gorchels, 2003; Haines, 2009). The individual (product manager) is thus entitled to find a valuable, usable and feasible product (Cagan, 2008). Following the same line of thought, product management can be described as the holistic business management of the product from the time it is merely an idea to the time it is withdrawn from the market (Haines, 2013). Hence, the product management concept is many times conceived as the entrepreneurial management of a piece of business (e.g. product, product line, product portfolio, service, brand, etc.) of a company, i.e. product managers end up being “mini-CEOs” of a “virtual” company that is focused on products (Gorchels, 2003; Haines, 2009).

Additionally, product management can be defined as a dynamic discipline which requires understanding of product’s technical specifications, business experience and customer-orientation to optimize a company’s profitability (Gorchels, 2003; Mcnaughtan, 2013; Mironov, 2008). Haines (2009) goes further and qualifies product management as a business organizational model ruled by a special set of activities (e.g. product strategy definition, conception, development, market introduction, management and marketing) performed by the product manager. Such different tasks require the contact with many departments (e.g. quality, production, logistics and sales) within a company, which are daily focused and busy with their respective main

roles. The biggest challenge and responsibility for a product manager is to cross the organizational hierarchical structure, overcoming strategic, marketing, development, production and commercial obstacles, and lead and integrate those groups into a strategically focused whole that aims to increase innovation's value and market introduction success (Crawford and Di Benedetto, 2008; Cooper, 1979, 2001, 2005; Dey, Guin, Mukherjee and Sinha, 2005; Dougherty, 1992; Gorchels, 2000; Haines, 2009; Hess, Homburg and Kuester, 2012; Khan, 2013; Luck, 1969; Sethi, Smith and Park, 2001). Other challenge product managers recurrently face is balancing the demand of selling existing products with the development of new products (Gorchels, 2003). We found a slightly accurate representation of nowadays regular product manager's role as the product unifying driver (Picture 2.1.), however, product manager's position is pointed as independent from any other department and in reality product managers belong to the marketing department and report to the marketing chief officer (Chisa, 2014; Clewett and Stasch, 1975).



Picture 2.1. Product manager's role framework

D1, D2 and D3: functional units in development; MFG: manufacturing; MKG: marketing

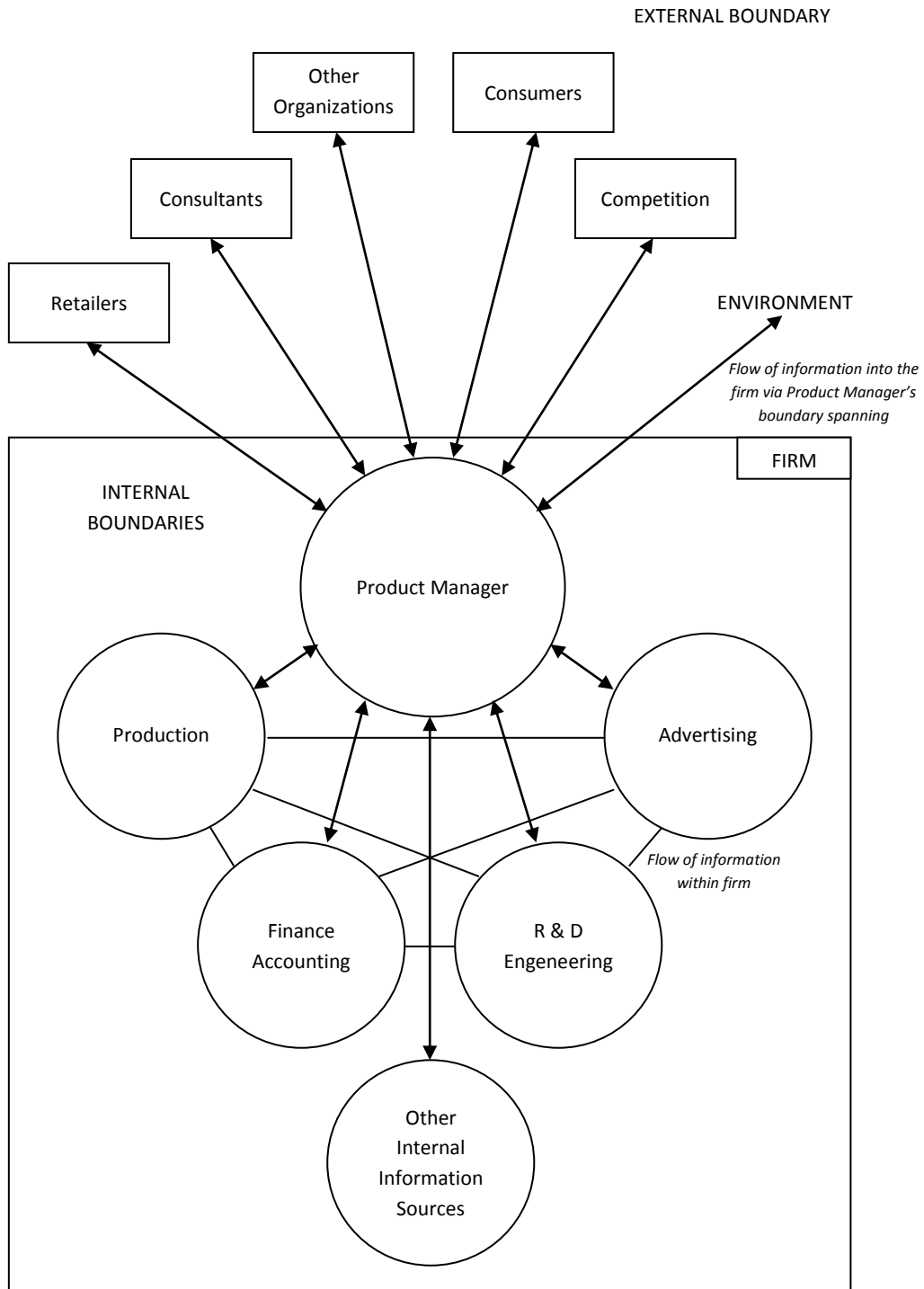
Source: Clark & Fujimoto (1991: 44).

Communication and integration are essential for product manager's effective performance (Lorge, 1999; Wroblowska and Ruda, 2015), therefore their boundary

activities are crucial (Lysonski, 1985) and they are often labeled as boundary spanners (Delbecq & Leifer, 1978). Picture 2.2. shows the communication linkages product managers have between the external environment and the departments within the company. As demonstrated in the picture, product managers are the pivotal center of products, services, software and technology (Haapasalo, Hanninen & Harkonen, 2015) from the environment (e.g. consumers and competition) into the firm and vice versa (cf. Boundary Spanning Concept; Lysonski, 1985).

Due to the diversity of tasks product managers need to perform, they are expected to be successful at many practices including (Haines, 2009): a) leading and influencing; b) cross-functional teaming; c) making decisions; d) financial planning and analysis; e) assessing the industry and competition; f) market segmentation and targeting; g) forecasting; h) formulating product and marketing strategies; and i) leveraging the product management cycle model. Moreover, since product managers are responsible for the process of analyzing a need and describing and blending suitable elements (tangible and/or intangible) into a product-life set of deliverables (i.e. products, services, software and technology) that has to be standardized, repeatable and comprehensible (Haapasalo, Hanninen and Harkonen, 2015), in some way, we can say that product manager's work is related with the concept of productisation.

Overall, considering a company as a human body metaphor, product management is part of the genetic material which is present in every single cell, tissue, organ and system such as the skeleton and the command and control center (brain) (Haines, 2009). In this organizational model, all different body actions (business' parts) are integrated and work together towards a homeostasis.



Picture 2.2. Boundary Spanning Concept

Source: Lysonski (1985: 27).

2.2. Product manager's effectiveness

There is a significant lack of literature regarding product manager's effectiveness appraisal and the existing one focus mainly on the discussion between the use of qualitative or quantitative measures (Laurin, Katsanis and Pitta, 1996). However, there are a few authors that have been publishing in this topic such as Martin Erikson (2011), who claims that a product manager needs to intersect three domains to be effective: a) business; b) product, service, software or technology; and c) user experience. Furthermore, Laurin, Katsanis and Pitta (1996) approach several qualitative effectiveness measures such as boundary spanning capabilities, ability to function effectively as a team member and strategic planning capabilities. In addition, when evaluating the potential of a candidate to a position of product manager, there might be advantage in considering emotional intelligence, as a typical product manager will work with several departments and needs to balance multiple interests (Marketing, 2016).

There are many financial KPIs to gauge a product manager's effectiveness, such as product revenue, product margin and profitability (Marketing, 2010). These are both used in product manager's performance appraisal within the companies they work for and as general KPIs in some literature (Smart, 2010).

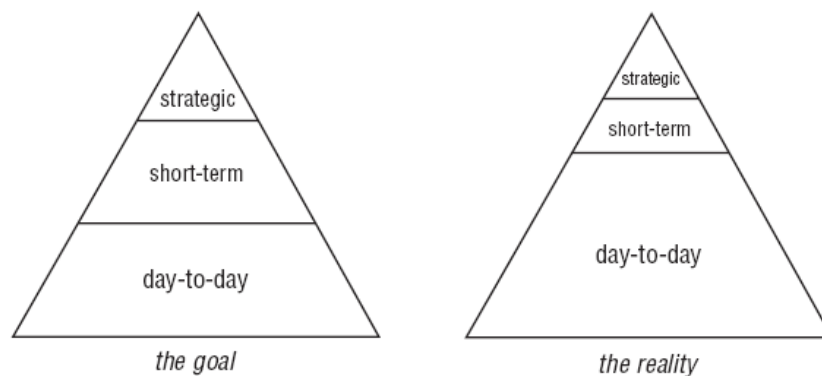
We located three types of studies in literature: a) studies that associate product manager's satisfaction with effectiveness; b) studies that review the literature on product manager's performance appraisal methods; and c) studies that concluded which competencies were crucial for a product manager's effective performance. For our study, we will focus on the latter which is closer to our project goal.

2.2.1. External variables

As in any other professions, job effectiveness is influenced by many external factors outside the reach of the individual. Product managers are no exception and frequently face external challenges such as lack of authority when dealing with other departments (Gemmill and Wilemon, 1972; Gorchels, 2003; Gray and McDaniel, 1980; Howley, 1988; Luck, 1969; Sawhney and Tyagi, 2010), which emphasizes the importance of

leadership and persuasion competencies in such roles (Haines, 2013). Furthermore, job roles and descriptions are frequently poorly defined (Cummings, Jackson and Ostrom, 1989; Kanh et al., 1964; Wood and Tandon, 1994; consultora) leading to misunderstanding the product manager's position amongst colleagues (Gray and McDaniel, 1980, Haines, 2009, 2011). This leads to lack of cooperation (Luck, 1969; Lysonski et al., 1988), and job dissatisfaction (Lysonski et al., 1988). In fact, Cummings et al. (1984, 1989), Gorchels (2003) and Lysonski (1985) concluded that product manager's job satisfaction is directly related to job scope and inversely related to role ambiguity.

Moreover, many product managers feel that they would perform their job better if they could spend more time on strategic activities and less time on tactical coordination chores or day-to-day duties (Picture 2.3.; Gorchels, 1996, 2000; Luck, 1969; Sawhney and Tyagi, 2010). Additionally, product managers have commonly lack of assistance and inadequate training (Ausura and Haines, 2003; Luck, 1969) and although they are responsible for and participate in many decisions, they are rarely solo decision makers (Cleweet and Stash, 1975; Cummings, Jackson and Ostrom, 1989; Giese and Weisenberger, 1982). Finally, one cannot overlook the effect of general environmental aspects such as financial crisis and political, legal and market changes in product manager's performance (Calantone, Dröge and Garcia, 2003).



Picture 2.3. The product manager's balance of activities

Source: Gorchels (2000: 12).

2.2.2. Internal variables

According to Kochanski (1997), determining which competencies are required for each job is crucial for professional development and performance, and product management is no exception.

The competency concept is believed to have emerged with the early Romans whom performed a kind of competency profiling in order to describe in detail the characteristics of a good roman soldier (Draganidis and Mentzas, 2006). The term was discussed and assessed by McClelland in the early 1970's, being defined as a significant predictor of employee performance being as important as an individual's academic aptitude and knowledge (Agrawal and Tripathi, 2014; Ennis, 2008; Lucia and Lepsinger, 1999; McClelland, 1973;). Later on, Boyatzis (1982) described competencies as specific personal qualities that were causally related to effective and/or superior performance.

Competencies incorporate two notions: personal characteristics and activity area of work (Bozcurt, 2011). In consequence, there is no unique definition of competency, i.e. every research field has its own conception (Duarte, 2014). In Medicine, for instance, competency is seen as an ability to transfer skills and knowledge to new situations and to describe outcomes predictable from performing professionally related functions (Lane and Ross, 1998).

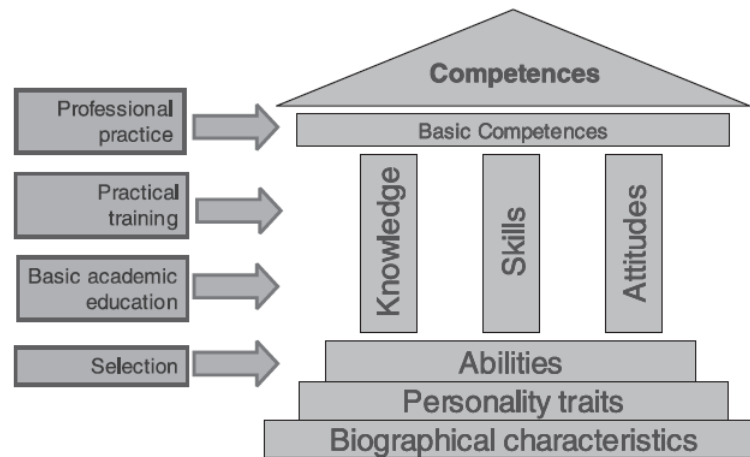
Shippman et al. (2000) defines competency as a successful performance of an activity or exercise, or adequate knowledge of a certain skill that, as reported by Le Deist and Winterton (2005), can endure for some time. In current dictionaries, competency is the quality of being adequately or well qualified physically and intellectually (WordNet, 2006). Moreover, Enis (2008) defines competency as the capability of applying knowledge, skills, abilities, behaviors, and personal characteristics to successfully perform critical work tasks, specific functions, or operate in a given role or position.

In this work we chose to use the concept of competency defined by Roe (2002) since, in our opinion, is the most integral and advanced review on competencies in which the author successfully defines a set of criteria to distinguish between competencies and other dimensions (e.g. skills and knowledge). Therefore, a competency can be described as a learned ability, acquired through work experience, to adequately

perform a task, duty or role (Bartram and Roe, 2005; Roe, 2002). Additionally, it must fulfill the following criteria: a) being described by verbs of action; b) having a beginning and an end; c) can be acquired and changed through learning; and d) being relevant for job performance. Roe's competency model is often called architectonic since it provides a hierarchical structured view of the different dimensions explored. As noticeable in Picture 2.4., competencies can be seen in the top of the structure, build upon the pillars of knowledge, skills, and attitudes. In the bottom of the model lies the basal part of the structure formed by abilities, personal traits and biographical characteristics. Overall, the model focus on the building blocks of competencies (e.g. knowledge, skills and attitudes) (Roe, 2002) i.e. elements that are necessary for the acquisition and development of competencies. They will differ depending on the professional occupation and also the associated context i.e. a small company product manager will develop different competencies than a multinational product manager and the same happens with industrial and consumer goods product managers (Hise and Kelly, 1979).

Competencies can be divided in two groups: a) basic or lower level competencies; and b) key or higher level competencies (Agrawal and Thipathi, 2014; Bartram and Roe, 2005). Basic competencies refer to activities that only cover a part of the work duties of a certain occupation, such as performing market studies in the product manager example. Key competencies correspond to main work duties one has to excel to fulfill the job, such as defining a strategy for each product.

Although competencies can be developed and improved throughout professional practice and on-the-job training, knowledge is acquired through education (Roe, 2002). Knowledge, skills and attitudes can be assessed separately and developed in isolation since they are more elementary than competencies (Roe, 2002).



Picture 2.4. Roe's Competency Model

Source: Bartram & Roe (2005: 95).

Despite the scarcity of core research on product manager's competencies, there are a couple researchers that have been publishing structured views that may offer enough ground information to build a competency framework. Namely, Linda Gorchels and Zuzana Wroblowská have recurrently published on this topic. Furthermore, one cannot overlook the practitioner's contribute as anecdotal or structured publications, e.g. in job advertisements such as those Wroblowská (2013) used to conduct a content analysis.

Although many engineers move into product management as part of their career path, they are rarely informed about which competencies are essential to deliver an outstanding performance. Therefore, Linda Gorchels decided to approach this major gap and designed her own product manager competency model (Picture 2.5). The model addresses five sets of main competencies i.e. drive business results, deliver results through people, ensure market-driven direction, guide product "fit", and function and manage multiple priorities, which are then broken up into diverse subgroups (Gorchels, 2003). For instance, in order to drive business results one needs to have a clear vision and strategic plan for products and convert strategy into a plan with measurable objectives. In addition, if one wants to deliver results through people one must convince, inspire, motivate and encourage others to move toward a significant vision. Furthermore, to ensure market-driven direction one needs to create value for customers in the target markets. Lastly, in order to guide product "fit" and function one needs to master sufficient technical knowledge to act as liaison between

customers and staff and to manage multiple priorities i.e. one is required to understand and utilize the principles of project management.



Picture 2.5. Gorchel's Product Manager Competency Model

Source: Gorchels (2003: 41).

Wroblowska (2013) also clarified the profile role of a product manager, in this case in the present entrepreneurial environment of Czech Republic. By content analyzing recruitment advertisements and conducting a questionnaire survey, Wroblowska was able to extract product manager's work activities, professional skills, competencies and average qualification requirements (amongst others). Some competencies approached included monitoring and analyzing market trends, competitors and their products, defining product strategy and determining the marketing mix for developing products and brands.

By combining the two researches, we designed a product manager's competency matrix. In order to enrich our model, we also content analyzed O*NET competencies of similar fields of work (e.g. Brand Manager, Marketing Manager and Project Manager), since there is no reference of Product Management as an occupation in the US governmental database. Additionally, as in all fields where the topic is yet underdeveloped due to its newness or lack of systematization, practitioners are often the first source of information in order to gain insight about current issues and

understandings about the topic. Therefore we took an eclectic stance regarding these diverse sources.

Overall there are plenty of competencies that may be used to profile product managers. However these may be redundant as from conducting the literature review one is left with a sense of lack of cumulative knowledge building. In fact, there are many disperse contributes that fail to cite each other. Such high number of competencies would render the assessment process overly expensive and lacking time-efficiency. Hence, as in all business activities, one needs to separate what is core from what is accessory.

We could not locate any study that built and empirically tested, with psychometric quality report, any competency profile of Product Managers. For that reason, we set ourselves the goal of bringing these contributes together into a single framework that is actionable, comprehensive but sufficiently parsimonious so to enable its practical use while offering some theoretic insight of its underlying dimensions.

Not enough attention has been devoted to profiling product managers, especially as regards competencies required to handle very distinct objects, such as products, services, software or technology as identified by Haapasalo, Hanninen and Harkonen (2015). Hence, the goal of this study is thus to offer a contribute to fill in this gap by identifying core features of competency profiles for product managers in all these four stances, as well as idiosyncratic competencies (those specific of each one).

III. METHOD

3.1. Procedure

The empirical part is divided in a twofold manner. Firstly, we set the goal of building a competency framework that comprehended all relevant contributes as reviewed in the literature section. Secondly, we translated that framework into a survey to collect data so to enable the validation of such proposal, i.e. we conducted data analysis aimed to test the construct validity of the set of competencies (via exploratory factor analysis, followed by confirmatory factor analysis). We also applied appropriate techniques to gauge both convergent and divergent validity, required to acknowledge any survey as able to actually measure what it is expected to. As a complement, we tested each competency scales' reliability via Cronbach's alpha and Composite Reliability indices.

The survey was built with Qualtrics software and made available by an online link which was sent to individuals experienced in product management. These were invited to participate in the study stating its purposes, the voluntary nature of the collaboration, and offering assurance regarding anonymity and confidentiality. An institutional university email was provided in case any doubt of request of clarification should arise.

By using these techniques we hope to offer a structured framework that offers a better view of the true core competencies in this job.

3.2. Sample

The sample comprises 200 valid responses out of 249 received due to missing values. It comprehends 67% males, and the predominant age range (86.2%) is the 26-45 years-old all working on many industries with the most representative being IT & Telecom (24.2%) followed by Retail (10.4%), Pharmaceuticals (9.9%) and Food and Beverage (8.8.%) and many other residual ranging from textile, to insurance

companies, as shown in table 3.1. The sample predominantly (50.5%) reports having worked for larger than 250 employees companies and only a few report working in small size companies (below 50 employees, 17.6%), as stated in table 3.2., with product managers' tenures from 1 up to 24 years (full professional track) averaging 5.96 years (s.d. = 5.1), as showed in table 3.3.

Industry field	Frequency (%)	Industry field	Frequency (%)
1. Agriculture	0.5	2. Insurance	6.0
3. Automotive	2.2	4. IT & Telecom	24.2
5. Banking	3.3	6. Marketing analytics	0.5
7. Construction Industry	3.8	8. Media	4.9
9. Cosmetics	1.6	10. Military	0.5
11. Design	1.6	12. Paper industry	0.5
13. E-commerce	0.5	14. Pharmaceuticals	9.9
15. Education	1.1	16. Postal	0.5
17. Electronics	3.3	18. Public Administration	1.6
19. Energy	1.6	20. Retail	10.4
21. Entertainment	0.5	22. Safety Industry	0.5
23. Finances	1.6	24. Technology	0.5
25. Food and Beverage	8.8	26. Textile	0.5
27. Health	2.7	28. Tobacco	1.1
29. HVAC	0.5	30. Tourism	2.2
31. Other	1.6		

Table 3.1. Industry Representation

Number of workers within the company	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 10	11	5.5	5.9	5.9
11 to 50	22	11.0	11.7	17.6
Valid 51 to 250	60	30.0	31.9	49.5
More than 250	95	47.5	50.5	100.0
Total	188	94.0	100.0	
Missing System	12	6.0		
Total	200	100.0		

Table 3.2. Companies' size

Years of experience	Frequency	Percent	Valid Percent	Cumulative Percent
1 to 3	79	39.5	42.0	42.0
4 to 6	46	23	24.5	66.5
Valid 7 to 10	35	17.5	18.6	85.1
11 to 24	28	14	14.9	100.0
Total	188	94.0	100.0	
Missing System	12	6.0		
Total	200	100.0		

Table 3.3. Professional experience as product manager

3.3. Measures

In our study, we decided to measure five dimensions of competencies that, in our view, are crucial for product managers: 1) Strategic Appraisal; 2) Marketing and Planning; 3) Communication; 4) Persuasion and Motivation; and 5) Prioritizing and Solution-driven, as represented in Table 3.4.

Main Competencies	Sub-Competencies
Strategic appraisal (SEC)	SEC1_Translate corporate values, vision, mission and strategy into product portfolio decisions SEC2_Perform market research studies and analyze their findings SEC3_Determine the company's position and differentiation strategy in the marketplace SEC4_Identify competitors' strengths and weaknesses SEC5_Identify and appraise commercial opportunities or possible threats SEC6_Infer market trends (future needs of customers) SEC7_Define a strategy for each product (recognize main competitors, set market segments and establish positioning and value proposition) SEC8_Align product strategy with existing resources (e.g. budget, production capacity, quality and legal requirements)
Marketing and planning (MPC)	MPC 1_Translate product strategy into action plans MPC 2_Ensure action plans are consistent with other parts of the company MPC 3_Estimate financial viability (e.g. obtain financial evaluations of business options) MPC 4_Interpret all financial components of product management, including product contribution margins, profit and loss statements, budget processes, and return on investment calculations MPC 5_Ensure alignment between the product in development and the original product strategy and vision MPC 6_Recommend modifications to products characteristics if necessary MPC 7_Ensure products approval from the organizational internal panel

	<p>MPC 8_Forecast product's expectable demand</p> <p>MPC 9_Formulate pricing strategies and tactics</p> <p>MPC 10_Specify targets and milestones</p> <p>MPC 11_Develop reasonable schedules and define critical paths and timelines</p> <p>MPC 12_Implement plans within established budget and time</p> <p>MPC 13_Integrate marketing communications (trade shows, advertising, PR, etc.) and measure its effectiveness</p> <p>MPC 14_Track product's financial performance and overall company results</p> <p>MPC 15_Monitor product's lifecycle from concept to grave</p>
<p>Communication (ComC)</p>	<p>ComC 1_Communicate with several types and levels of staff and external contacts, both in writing and orally</p> <p>ComC 2_Liaison between all key players (e.g. sales and technical product development team)</p> <p>ComC 3_Translate technical writing into "user-friendly" costumer documentation</p>
<p>Persuasion and motivation (PerMotC)</p>	<p>PerMotC 1_Negotiate and interact with diverse personality types</p> <p>PerMotC 2_Seek to build rapport and gain support, respect and commitment</p> <p>PerMotC 3_Build a valuable network of contacts (across business areas, within sales force...)</p> <p>PerMotC 4_Act to build long-term relationships (e.g. customers, stakeholders and sales forces)</p> <p>PerMotC 5_Manage internal and external conflicting demands for the benefit of the organization</p> <p>PerMotC 6_Influence others to value ideas you want to pursuit</p> <p>PerMotC 7_Assist the sales force (e.g. provide appropriate training to help salespeople to sell)</p> <p>PerMotC 8_Lead cross-functional teams (e.g. guarantee they are aligned with your goal, performing each respective responsibility described in the action plan)</p> <p>PerMotC 9_Delegate full authority and responsibility to develop specific skills within the PM team</p>
<p>Prioritizing and anticipating solutions for foreseeable barriers (PSC)</p>	<p>PSC1_Prioritize activities based on awareness of overall business goals</p> <p>PSC2_Handle multiple complex projects at an appropriate level of detail</p> <p>PSC3_Develop organized storage and filing systems to enable easy retrieval</p> <p>PSC4_Identify possible solutions for each barrier</p> <p>PSC5_Select the solution which more benefits brings to the company</p>

Table 3.4. Measures approached in our study

As showed, we attributed abbreviations to our measures (e.g. SEC and MPC) in order to create a perceivable language for Qualtrics analytical system. With this total of 40 competencies, we hope to create a solid competency matrix for product managers.

3.4. Data analysis strategy

Competency modeling requires a set of interventions to collect data such as the Behavioral Event Interview (McClelland, 1978) and following some guidelines to ensure validity and relevancy of the proposed set of competencies. As such list of

competencies was collected and structured from specialized literature (e.g. Gorschels and Wroblowská) there is no need to redo the data collection. Therefore, to test the validity of such set of competencies it is only necessary to apply psychometric analysis that focus both on validity and reliability. In order to test for validity of the construct one must conduct factorial analyses (Thompson, 2004). Extant research will recommend using confirmatory factor analysis whenever there is a previously known structure of the data on the basis of theoretical grounds or previous empirical research. If this is not the case, one should conduct exploratory factor analysis (Hair et al., 2010).

For the present study, considering the existing literature, we have opted to conduct confirmatory factor analysis following Hair et al. (2010) criteria to judge on the model's validity. The goodness of fit indicators should be used to decide if the data structure matches sufficiently the expected constructs' structure, i.e. its factorial structure. The criteria for a sample of this size and computing more than 20 observed variables simultaneously in the model are: 1) a chi-square ratio on the respective degrees of freedom below 3.0 although admitting a significant p-value (due to sample size effects on the chi-square statistic), 2) a Comparative Fit Index (CFI, Bentler, 1990) not below .92, 3) a Root Mean Square Error of Approximation (RMSEA, Browne and Cudeck, 1993) below .08, and a Standardized Root Mean Square Residual (SRMR, Jöreskog and Sörbom, 1996) below .09. We have also considered the stricter threshold proposed by Hu & Bentler (1999) of $CMIN/DF < 3.0$; $CFI > .95$; $RMSEA < .06$ and $SRMR < .08$. Considering that including many similar competencies might artificially improve some model fit criteria due to redundancy, we have also opted to analyze the Parsimony CFI, which has no set minimum value for acceptance but should be closest to 1.0 (usually, reported as above .70).

Exploratory factor analysis is also subjected to technical requirements to be taken as valid. Therefore consider the factorial analysis pertinent whenever $KMO > .70$, MSA for each competence above 0.500, Bartlet's statistic X^2 with a significant p-value and all commonalities of at least .500. Additionally the factor matrix should explain at least 60% of total variance after rotation, which for conceptual clarity sake will be orthogonal (Varimax).

Additionally, for all factor analyses, reliability is computed by means of Composite Reliability and Cronbach's Alpha which should attain at least the value of .70.

IV. RESULTS

The original model previewed five large factors comprehending a total of 40 competencies. These were: Strategic Evaluation competencies (8 items), Marketing and Planning competencies (15 items), Communication competencies (3 items), Persuasion and Motivation competencies (9 items), and Prioritizing and Solution-Driven competencies (5 items). The confirmatory factor model follows this exact structure.

The five-large competency family structure does not achieve thresholds to be accepted as valid (CMIN/DF=2.054, $p < .001$; CFI=.751; PCFI=.702; RMSEA=.073; SRMR=.0798) both by Hair et al. (2010) as well as by Hu & Bentler's (1999) criteria.

Hence, we have conducted an exploratory factor analysis using Kaiser criterion for factor extraction and a Varimax Rotation. After removal of one item (SEC8 - Align product strategy with existing resources) due to insufficient commonality, the factor solution extracted eleven factors with valid indicators ($KMO = .859$; $.702 < MSAs < .937$, Bartlett's test of sphericity $X^2 p < .001$) explaining 66% variance after rotation. The matrix rotated component is as follows (Table 4.1).

	Component										
	1	2	3	4	5	6	7	8	9	10	11
PerMotC 2_Seek to build rapport and gain support, respect and commitment	.781	.178	.092	.116	.006	.041	.094	.096	.154	.093	.049
PerMotC 1_Negotiate and interact with diverse personality types	.707	-.033	.034	-.019	.013	.119	-	.172	.322	.005	-
PerMotC 5_Manage internal and external conflicting demands for the benefit of the organization	.699	.371	.079	.190	.015	.039	.039	.091	.035	-	-
PerMotC 4_Act to build long-term relationships (e.g. customers, stakeholders and sales forces)	.654	.044	.069	.236	.165	.097	.062	.080	.066	.288	.103

Table 4.1. Matrix rotated (Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 14 iterations)

Competency Profiling for Product Managers

	Component										
	1	2	3	4	5	6	7	8	9	10	11
PerMotC 3_Build a valuable network of contacts (across business areas, within sales force...)	.611	.114	.057	.291	.136	.214	.165	.033	.127	.175	.110
PerMotC 6_Influence others to value ideas you want to pursuit	.392	.313	.116	.361	-	.330	-	.041	.077	-	.172
PSC5_Select the solution which more benefits brings to the company	.137	.676	.152	.285	-	.047	.244	.039	.100	.098	.058
PSC4_Identify possible solutions for each barrier	.172	.601	-	.108	.158	.185	.115	.101	.182	.420	-
PSC2_Handle multiple complex projects at an appropriate level of detail	.291	.573	.074	.098	-	.217	-	.230	.188	.081	.035
PSC1_Prioritize activities based on awareness of overall business goals	.203	.506	.015	.148	.056	.267	.086	.156	.284	-	.260
MPC 9_Formulate pricing strategies and tactics	.092	-.026	.750	.101	.083	-	.254	.179	-	-	-
MPC 8_Forecast product's expectable demand	.054	.193	.637	.111	.335	.322	-	.125	.095	.028	.033
MPC 13_Integrate marketing communications (trade shows, advertising, PR, etc.) and measure its effectiveness	.039	.000	.574	.192	.064	.239	.335	.033	-	.293	-
MPC 14_Track product's financial performance and overall company results	.118	.416	.532	.067	.108	.077	.116	-	.118	.207	.150
PerMotC 9_Delegate full authority and responsibility to develop specific skills within the PM team	.236	.229	.063	.701	.168	.176	.047	.071	-	.074	.178
PerMotC 8_Lead cross-functional teams (e.g. guarantee they are aligned with your goal, performing each respective responsibility described in the action plan)	.347	.235	.000	.693	.116	.029	.173	.164	.031	.027	-
PerMotC 7_Assist the sales force (e.g. provide appropriate training to help salespeople to sell	.149	.081	.426	.657	.203	-	.056	.014	.083	.186	-
SEC4_Identify competitors' strengths and weaknesses	.133	-.061	.006	.089	.757	.150	-	.066	.151	.244	.144
SEC5_Identify and appraise commercial opportunities or possible threats	.045	.026	.221	.039	.687	.164	.300	-	.152	-	-
SEC6_Infer market trends (future needs of customers)	.017	.054	.158	.240	.639	.112	.176	.101	.007	.035	.210
SEC3_Determine the company's position and differentiation strategy in the marketplace	.062	.462	.191	.057	.515	-	.101	.225	-	.021	-
						.121		.141		.019	

Table 4.1. Matrix rotated (cont.)

Competency Profiling for Product Managers

	Component										
	1	2	3	4	5	6	7	8	9	10	11
SEC2_Perform market research studies and analyze their findings	.072	.207	.165	.124	.496	-.054	.057	.478	-.246	.175	.033
MPC 11_Develop reasonable schedules and define critical paths and timelines	.155	.138	.118	.030	.115	.803	.120	.095	.000	.127	-.033
MPC 12_Implement plans within established budget and time	.205	.205	.128	.108	.070	.641	.276	.130	-.028	.301	-.038
MPC 10_Specify targets and milestones	.091	.055	.339	.104	.281	.527	.317	.022	.182	-.023	.157
MPC 3_Estimate financial viability (e.g. obtain financial evaluations of business options)	.043	.188	.244	.010	.185	.160	.732	.096	.088	-.008	.050
MPC 4_Interpret all financial components of product management, including product contribution margins, profit and loss statements, budget processes, and return on investment calculations	.086	.000	.372	.120	.129	.133	.701	.082	-.022	.118	.174
MPC 2_Ensure action plans are consistent with other parts of the company	.132	.313	-.071	.202	.216	.216	.427	.141	.063	.217	.168
MPC 1_Translate product strategy into action plans	.181	.079	-.162	.241	-.006	.219	.406	.579	.135	.046	-.169
MPC 6_Recommend modifications to products characteristics if necessary	.322	.197	.196	-.009	.122	.084	.008	.571	.075	.026	.148
SEC7_Define a strategy for each product (recognize main competitors, set market segments and establish positioning and value proposition)	-.024	.116	.144	.429	.158	-.100	.214	.455	.267	-.140	.113
MPC 15_Monitor product's lifecycle from concept to grave	.091	.102	.274	.347	.005	.182	-.118	.439	.395	.133	.113
MPC 7_Ensure products approval from the organizational internal panel	.308	.216	.379	-.021	.144	.165	.097	.406	-.112	.097	.132
ComC 1_Communicate with several types and levels of staff and external contacts, both in writing and orally	.254	.131	.020	-.016	-.003	.054	.054	.079	.786	-.033	.079
ComC 2_Liaison between all key players (e.g. sales and technical product development team)	.290	.223	.021	.159	.160	-.049	.073	-.021	.682	.147	.049
PSC3_Develop organized storage and filing systems to enable easy retrieval	.150	.204	.136	.040	.100	.145	.058	-.026	-.002	.769	.108
ComC 3_Translate technical writing into "user-friendly" customer documentation	.153	-.046	.187	.390	.005	.144	.067	.300	.171	.451	-.106
SEC1_Translate corporate values, vision, mission and strategy into product portfolio decisions	.072	.102	-.030	.033	.103	-.054	.083	.033	.124	.093	.833

Table 4.1. Matrix rotated (cont.)

	Component										
	1	2	3	4	5	6	7	8	9	10	11
MPC 5_Ensure alignment between the product in development and the original product strategy and vision	.141	.059	.164	.189	.078	.221	.259	.409	-	-	.472

Table 4.1. Matrix rotated (cont.)

The confirmatory factor analysis of this suggested structure showed some issues which required us to use Lagrange Multipliers to further refine. This additional refinement is understandable as CFA is more robust than EFA as in confirmatory factor analysis the items errors covariances are measured simultaneously. The adjustments made were extensive as there was indication of nested items (i.e. competencies that were actually already included in other competencies, which contribute to model redundancy and covariance between errors). The redesigned model has valid fit indices (CMIN/DF=1.295, p=.001; CFI=.954; PCFI=.801; RMSEA=.038; SRMR=.0521) and comprehends 26 items as follows: F1 (5 items; e.g. PerMotC1_Negotiate and interact with diverse personality types); F2 (3 items; e.g. MPC8_Forecast product’s expectable demand); F3 (2 items; e.g. PerMotC8_Lead cross-functional teams); F4 (3 items; e.g. SEC6_Infer market trends); F5 (3 items; e.g. PSC2_Handle multiple complex projects at an appropriate level of detail); F6 (2 items; e.g. MPC12_Implement plans within established budget and time); F7 (6 items; e.g. MPC4_Interpret all financial components of product management); and F8 (2 items; e.g. ComC2_Liason between all key players).

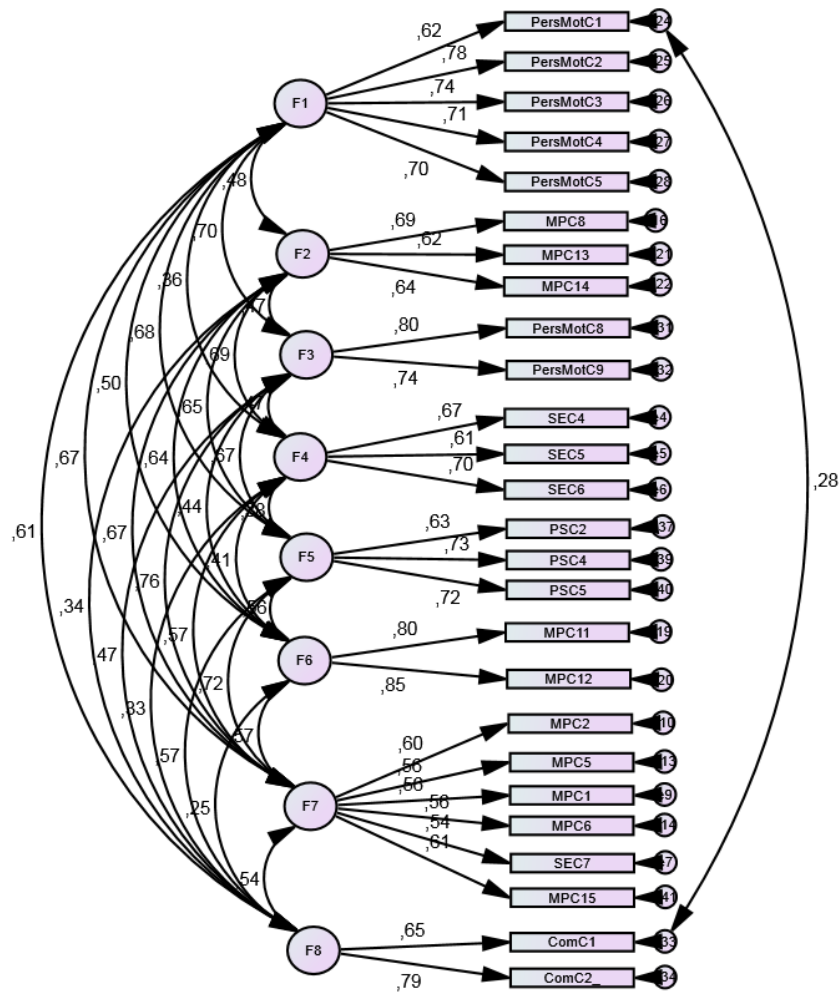


Table 4.2. Redesigned model

Taking into consideration the factors nature we opted to label them as follows: F1 (Social/Interpersonal relationship), F2 (Marketing competence), F3 (Team leadership), F4 (Opportunity identification), F5 (Problem solving), F6 (Planning), F7 (Strategic mastery), and F8 (Communication).

Globally, the 8-factor model shows acceptable convergent validity, as the average extracted variances of each factor reaches the thresholds (Table 4.3.), but non-acceptable divergent validity (Table 4.4.).

Factor	AVEs	Composite Reliability (Joreskog rho)	Decision
F1 (Social / Interpersonal relationship)	.507	.836	Ok ^a
F2 (Marketing competence)	.423	.687	In doubt ^b
F3 (Team leadership)	.594	.745	Ok ^a
F4 (Opportunity identification)	.437	.700	Ok ^a
F5 (Problem solving)	.482	.736	Ok ^a
F6 (Planning)	.681	.810	Ok ^a
F7 (Strategic mastery)	.327	.745	Ok ^a
F8 (Communication)	.523	.685	In doubt ^b

Table 4.3. Average Variances Extracted (AVEs)

^a Accepted due to both indicators or merely due to CR; ^b As in new scale development, concerning internal consistency such as Cronbach's alpha, it is common that the minimum threshold for acceptance lowers to .600. However this indicates this factor might benefit from future re-specification.

	F1	F2	F3	F4	F5	F6	F7	F8
F1 (Social / Interpersonal relationship)	,712							
F2 (Marketing competence)	,480	,650						
F3 (Team leadership)	,696	,467	,771					
F4 (Opportunity identification)	,357	,687	,471	,661				
F5 (Problem solving)	,680	,648	,665	,379	,694			
F6 (Planning)	,495	,643	,440	,410	,565	,825		
F7 (Strategic mastery)	,668	,672	,763	,568	,720	,569	,572	
F8 (Communication)	,614	,342	,474	,334	,567	,248	,539	,723

Table 4.4. Divergent validity (Square rooted AVEs in diagonals)

It is noteworthy to stress the several values that fall below the square rooted AVE in Factor 7 which are indicative of lack of divergent validity. This would recommend a corrective measure by re-specifying the model (deleting items or even the entire factor) or accepting that its nature differs from the remaining set of competencies. Indeed this factor's nature is of a distinct level of abstraction as it translates a strategic level thinking, while other competencies are of a more concrete level of abstraction at operational or managerial level. This means it would be nonsense to discard such factor on the basis of low divergent validity because one should actually expect it to operate as an overdrive on top of such competencies. For that reason, we have opted

not to delete it but rather to assume its idiosyncratic nature as it is absolutely indispensable to the comprehensive performance of product management functions.

Building from this rationale we conducted a new CFA without factor 7. The solution found has valid fit indices (CMIN/DF=1.457, $p < .001$; CFI=.950; PCFI=.760; RMSEA=.048; SRMR=.0528).

Globally, the solution has convergent validity (Table 4.5) and divergent validity with the single note going to F2-F4 pair that marginally overpasses the standardized correlation (Table 4.6.). Both relate to critical marketing responsibilities which may explain their relative proximity.

Factor	AVEs	Composite Reliability (Joreskog rho)	Decision
F1 (Social / Interpersonal relationship)	.510	.838	Ok ^a
F2 (Marketing competence)	.423	.687	Conditional ^b
F3 (Team leadership)	.565	.721	Ok ^a
F4 (Opportunity identification)	.432	.695	Conditional ^b
F5 (Problem solving)	.483	.736	Ok ^a
F6 (Planning)	.673	.804	Ok ^a
F8 (Communication)	.531	.692	Conditional ^b

Table 4.5. Solution AVEs

^a Accepted due to both indicators or merely due to CR; ^b As in new scale development, concerning internal consistency such as Cronbach's alpha, it is common that the minimum threshold for acceptance lowers to .600. However this indicates this factor might benefit from future re-specification.

	F1	F2	F3	F4	F5	F6	F8
F1 (Social / Interpersonal relationship)	,714						
F2 (Marketing competence)	,478	,650					
F3 (Team leadership)	,692	,465	,752				
F4 (Opportunity identification)	,353	,686	,468	,657			
F5 (Problem solving)	,680	,648	,663	,379	,695		
F6 (Planning)	,494	,643	,440	,411	,564	,820	
F8 (Communication)	,624	,330	,460	,328	,545	,246	,729

Table 4.6. Solution divergent validity

As both factor solutions, with and without the Strategic Mastery competency are accepted, we opted to keep the more comprehensive one which offers an integrative view of the full range of competencies. Likewise Strategic Mastery will be treated as a separate higher level competency.

V. DISCUSSION AND CONCLUSION

In this section, we will discuss results under the light of literature and we will then draw conclusions regarding strengths and weaknesses of this study, approaching its limitations and delivering some suggestions for future researches.

In the Methods' chapter, we described the sample as comprising 200 valid product managers' responses out of 249 due to missing values. Therefore, we had a response rate of about 80% which stands considerably above the 52,7% average response rate for individual level respondents (Baruch & Holtom, 2008). We believe that was only possible as a result of criterious looking for product managers and disclosing the link of the survey in many social networks such as LinkedIn. Furthermore, the computed Kaiser-Meyer-Olkin analysis has proved that the size of our sample (200 participants) is adequate and since it covers up to 30 different industries, the sample is considerably diversified.

From the factor analysis, we obtained a model with the following eight factors, organized by a descending order of importance according to our sample opinion: Social/Interpersonal relationship, Marketing Competence, Team leadership, Opportunity identification, Problem solving, Planning, Strategic mastery and Communication. This structure varies from our original model, retrieved from Gorchels (2003) and Wroblowska (2012), that previewed only five large factors (Strategic Evaluation competencies, Marketing and Planning competencies, Communication competencies, Persuasion and Motivation competencies and Prioritizing and Solution-Driven competencies). In spite of the structure differences, we didn't add any different group of competences that weren't present before. In fact, we merely broke the large five competences into more specific identical groups in order to increase our model's validity and accuracy. For instance, the large factor named Persuasion and Motivation competencies was divided in Team leadership and Social/Interpersonal relationship competencies. Additionally, we concluded that some sub-competencies were redundant and very similar to each other and therefore we streamlined the number of sub-competences present from forty (original model) to twenty six (final model).

Social/Interpersonal relationships competencies have been considered extremely important in product manager's success (Gorchels, 2003; Lysonski, 1985). Indeed, since product managers are the pivotal transmitter of products (Haapasalo, Hanninen & Harkonen, 2015) from the environment into the firm and vice versa (Lysonski, 1985), their boundary activities are crucial (Lysonski, 1985) and they need to be excellent boundary spanners in order to perform effectively (Delbecq & Leifer, 1978). Almost as a consequence of the organizational central role product managers' play, Communication competencies become extremely significant since they are needed on a daily basis and are vital for the natural and clear flow of information (Gorchels, 2003; Lorge, 1999; Wroblowska, 2012; Wroblowska and Ruda, 2015).

Additionally, considering the variety of tasks product managers perform and are appraised for, many departments frequently intervene and, for that reason, product managers need to overcome countless obstacles, lead (Team leadership) and integrate those different groups into a strategically focused whole that aims to increase innovation's value and market introduction success (Crawford and Di Benedetto, 2008; Cooper, 1979, 2001, 2005; Dey, Guin, Mukherjee and Sinha, 2005; Dougherty, 1992; Gorchels, 2000; Haines, 2009; Hess, Homburg and Kuester, 2012; Khan, 2013; Luck, 1969; Sethi, Smith and Park, 2001). Although product managers are responsible for and participate in many decisions, they are rarely solo decision makers (Cleweett and Stash, 1975; Cummings, Jackson and Ostrom, 1989; Giese and Weisenberger, 1982), therefore they need to weight all the different opinions and drive consensus, creating a Problem solving atmosphere.

Moreover, product's introduction success depends on many variables such as product-market fit, which is a product feature attained by market orientation and opportunity identification (Aimin, 2015; Duboff and Spaeth, 2000; Ferrel and Lukas, 2000; Ghorbani and Yaghootkar, 2013; Moore; Hult and Ketchen, 2001; Hultink, Langerak and Robben, 2004, 2007; Ottum, 1997). Since product management is known to validate market needs and improve products via customer feed, product managers are expected to have a good sense of Opportunity identification, ensuring market-driven direction (Gorchels, 2003). Furthermore, product managers belong to the Marketing department (Chisa, 2014; Clewett and Stasch, 1975) and are then entitled to develop many marketing activities, such as advertising, that are vital for new products' implementation success (Marketing competences). In addition, product managers

spend a significant part of their time in Planning activities, monitoring projects and ensuring predicted timelines and budget are not crossed (Gorchels, 2003).

All of the seven large competencies approached before are extremely important to ensure a daily effective product management amongst organizations, however, they are more of a concrete level of abstraction competencies at operational or managerial level when compared to Strategic mastery competences. In fact, the latter ones distinguish themselves for having a more distinct level of abstraction i.e. although one needs all the referred seven large competencies on a daily-basis as a product manager, strategic thinking is what will allow him or her to increase potential and progress in career.

We consider that this study delivers an accurate product manager's competence profile which may be useful for both companies looking for the best candidate for a product manager position and for product managers, independently of their career status, who aim to develop the appropriate competences to increase their effectiveness at work.

Nevertheless, we would like to point out some weaknesses. Firstly, although our sample size was somehow significant, it is always positive to work with a larger sample in order to extract the most accurate patterns. Technically the 200 sample size does not cast doubt on the use of both EFA or CFA, but with a 26-item solution it would be more comfortable to increase size, although we conducted several retests with bootstrapping which showed convergent findings. Therefore, it will be worthy to replicate this study with a larger sample of product managers. Secondly, because of our sampling procedure, we cannot absolutely ensure the representativeness of our sample, which may compromise the external validity of our findings. For instance, in our survey, we don't require any document confirming our respondents are/were in fact product managers since we believe that request would decrease our response rate and increase our overall time spent in filtering the sample. However most organizations may employ such professionals without branding them as Product Managers. Additionally, the sampling procedure doesn't ensure a randomly distribution of respondents across the world, industries and organizations. In fact, once the survey was available online, we can't rule out the possibility that a high number of Portuguese answered the survey and only a few Americans participated. Following the same thought, we can't exclude the possibility of having a large number of

respondents working in a same company or industry and an insignificant number of respondents working in other field. These factors may have an influence in our data causing a biased overall picture of the reality. However, it is still not possible to avoid this problem in any other statistical treatment.

Moreover, we detected some correlation between two sub-competencies: one from Social/Interpersonal relationship (Negotiate and interact with diverse personality types) and another from Communication (Communicate with several types and levels of staff and external contacts, both in writing and orally). Although it's not problematic, it might benefit from future study replications with a larger sample. In addition, convergent and divergent reliability may profit from future re-specification.

In resume, it would be interesting to replicate this study and later to enrich the product managers' profile, approaching its fundamental required skills, knowledge, attitudes, abilities and personality traits (Roe, 2005).

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APPENDICES

Appendix A. Portuguese Interview's Script

Appendix B. English Interview's Script

Appendix A – Portuguese Interview’s Script



O meu nome é Mariana Fernandes e encontro-me atualmente a terminar o meu Mestrado em Gestão de Empresas no ISCTE.

Tenho como objetivo descobrir que competências contribuem para um desempenho excepcional por parte de Gestores de Produto. Embora a função destes profissionais seja considerada crucial para o sucesso das organizações, não existe consenso no que diz respeito às competências que os mesmos necessitam para prosperarem no seu trabalho.

Ficariamos extremamente gratos se despendesse 9 minutos a expor a sua posição relativamente a certas competências.

Todas as respostas são anónimas e confidenciais. O tratamento de dados destina-se exclusivamente a fins académicos. Por favor não escreva o seu nome em qualquer parte.

Se alguma dúvida subsistir, não hesite em contactar-me (mffso@iscte.pt) ou contactar o meu orientador (nelson.ramalho@iscte.pt).

Se puder partilhar este link com os seus colegas (Gestores de Produto de qualquer área), ficaríamos muito gratos.

Obrigada,

Mariana Fernandes

Considere as seguintes competências do domínio da avaliação estratégica. Indique em que medida as competências apresentadas são críticas para um desempenho excelente como Gestor de Produto.

Nada importante (1)	Pouco importante (2)	Moderadamente importante (3)	Importante (4)	Muito importante (5)	Extremamente importante (6)
------------------------	-------------------------	---------------------------------	-------------------	-------------------------	--------------------------------

	1	2	3	4	5	6
Traduzir os valores, visão, missão e estratégia da empresa em decisões de portefólio de produtos						
Realizar estudos de mercado e analisar os respectivos resultados						
Determinar a posição e estratégia de diferenciação da empresa no mercado						
Identificar os pontos fortes e fracos dos competidores						
Identificar e avaliar oportunidades comerciais ou possíveis ameaças						
Antever tendências de mercado (futuras necessidades dos consumidores)						
Definir uma estratégia para cada produto (estabelecer segmentos-alvo de mercado e posicionar o produto)						
Alinhar a estratégia do produto com os recursos existentes (ex. orçamento, capacidade de produção e requisitos legais e de qualidade)						

Considere as seguintes competências do domínio do planeamento e marketing. Indique em que medida as competências apresentadas são críticas para um desempenho excelente como Gestor de Produto.

Nada importante (1)	Pouco importante (2)	Moderadamente importante (3)	Importante (4)	Muito importante (5)	Extremamente importante (6)
------------------------	-------------------------	---------------------------------	-------------------	-------------------------	--------------------------------

	1	2	3	4	5	6
Traduzir a estratégia de cada produto em planos de acção						
Assegurar que os planos de acção são consistentes com as outras áreas da empresa						
Estimar viabilidade financeira (ex. obter avaliações financeiras de opções de negócios)						
Interpretar todas as componentes financeiras da gestão de produto (ex. margens de contribuição de produtos e orçamentos)						
Assegurar alinhamento entre o produto em desenvolvimento e a visão e estratégia original do mesmo						
Recomendar alterações às características dos produtos em desenvolvimento se necessário						
Assegurar aprovação do produto pelo painel interno da empresa						
Determinar a procura expectável do produto						

Formular estratégias e táticas de preço						
Estabelecer objectivos e metas						
Desenvolver horários razoáveis e definir prazos críticos						
Implementar planos com o orçamento e tempo estabelecidos						
Integrar comunicações de marketing (feiras, publicidade, relações públicas) e medir a respectiva eficácia						
Seguir o desempenho financeiro do produto e da empresa no geral						
Monitorizar o ciclo de vida do produto, desde o conceito inicial até à sua remoção do mercado						

Considere as seguintes competências do domínio da comunicação. Indique em que medida as competências apresentadas são críticas para um desempenho excelente como Gestor de Produto.

Nada importante (1)	Pouco importante (2)	Moderadamente importante (3)	Importante (4)	Muito importante (5)	Extremamente importante (6)
------------------------	-------------------------	---------------------------------	-------------------	-------------------------	--------------------------------

	1	2	3	4	5	6
Comunicar por escrita e oralmente com variados tipos de funcionários e contactos externos						
Ligar intervenientes-chave (ex. força de vendas e equipa técnica de desenvolvimento)						
Traduzir escrita técnica em documentação "user-friendly" para o consumidor						

Considere as seguintes competências do domínio da persuasão e motivação. Indique em que medida as competências apresentadas são críticas para um desempenho excelente como Gestor de Produto.

Nada importante (1)	Pouco importante (2)	Moderadamente importante (3)	Importante (4)	Muito importante (5)	Extremamente importante (6)
------------------------	-------------------------	---------------------------------	-------------------	-------------------------	--------------------------------

	1	2	3	4	5	6
Negociar e interagir com variados tipos de personalidade						
Procurar fomentar a harmonia e ganhar suporte, respeito e compromisso						
Criar uma rede de contactos de valor (ex. entre outras áreas de negócio e entre a força de vendas)						
Estabelecer relações longas (ex. clientes, stakeholders e força de vendas)						
Gerir conflitos internos e externos tendo por base o maior interesse da empresa						
Influenciar outros a valorizar as ideias que quer seguir						
Dar suporte à força de vendas (ex. facultar treino apropriado para ajudar os vendedores a desempenharem a sua função com sucesso)						
Liderar equipas multi-funcionais (ex. garantir que todos estão alinhados com o seu objectivo, desempenhando as respectivas responsabilidades descritas no plano de acção)						
Delegar plena autoridade e responsabilidade na equipa de Gestores de Produto com o intuito de desenvolver habilidades específicas						

Considere as seguintes competências do domínio da gestão de prioridades e antecipação de soluções para cada obstáculo. Indique em que medida as competências apresentadas são críticas para um desempenho excelente como Gestor de Produto.

Nada importante (1)	Pouco importante (2)	Moderadamente importante (3)	Importante (4)	Muito importante (5)	Extremamente importante (6)
------------------------	-------------------------	---------------------------------	-------------------	-------------------------	--------------------------------

	1	2	3	4	5	6
Priorizar actividades com base nos objetivos gerais de negócio						
Manusear múltiplos e complexos projectos com o nível de detalhe adequado						
Desenvolver sistemas de organização (armazenamento e arquivo) de forma a permitir uma procura fácil e rápida						
Identificar soluções possíveis para cada obstáculo						
Seleccionar a solução que mais benefícios traz à empre						

As questões seguintes destinam-se meramente à caracterização da amostra.

Género

	Masculino
	Feminino

Idade

Inferior a 26	26 a 35	36 a 45	46 a 55	56 a 65	Superior a 65
t					

Exerce a profissão de Gestor(a) de Produto há quantos anos? Considere todo o seu currículo profissional.

Escreva por favor o sector (indústria) onde opera a sua empresa.

Quantas pessoas trabalham na sua empresa?

Menos de 11	11 a 50	51 a 250	Mais de 250
t			

Se desejar deixar algum comentário ou sugestão que o questionário não tenha abrangido por favor utilize a caixa em baixo.

Muito obrigada pela sua preciosa contribuição e tempo!

Appendix B – English Interview’s Script



Hello!

My name is Mariana Fernandes and I'm currently finishing my Master in Business Administration at ISCTE Business School (Lisbon, Portugal).

I'm interested in findind out which competencies contribute to an excelent performance by Product Managers. Although the Product Manager's role is regarded as crucial for all organizations success, there is no consensus concerning the necessary skills they need to have to excel at their job.

We would be grateful if you spent 9 minutes stating your position as regard some competencies.

All answers are anonymous and confidential. All data treatment is for academic purposes only. Please do not write your name in any field.

If any doubt subsists, contact me (mffso@iscte.pt) or my supervisor (nelson.ramalho@iscte.pt).

If you could please spread this link with your colleagues (Product Managers of any field), we would be extremely grateful.

Kind Regards.

Mariana Fernandes

Consider the following competencies in the domain of strategic appraisal. Indicate to what extent the following are critical for an excelent performance as a Product Manager.

Not important at all (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)	Extremely important (6)
-----------------------------	---------------------------	-----------------------------	------------------	-----------------------	----------------------------

	1	2	3	4	5	6
Translate corporate values, vision, mission and strategy into product portefolio decisions						
Perform market research studies and analyze their findings						
Determine the company's position and differentiation strategy in the marketplace						
Identify strengths and weaknesses of competitors						
Identify and appraise commercial opportunities or possible threats						
Infer market trends (future needs of customers)						
Define a strategy for each product (recognize main competitors, set market segments and establish positioning and value proposition)						
Align product strategy with existing resources (e.g. budget, production capacity, quality and legal requirements)						

Consider the following competencies in the domain of planning and marketing. Indicate to what extent the following are critical for an excelent performance as a Product Manager.

Not important at all (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)	Extremely important (6)
-----------------------------	---------------------------	-----------------------------	------------------	-----------------------	----------------------------

	1	2	3	4	5	6
Translate product strategy into action plans						
Ensure action plans are consistent with other parts of the company						
Estimate financial viability (e.g. obtain financial evaluations of business options)						
Interpret all financial components of product management (e.g. product contribution margins and budget processes)						
Ensure alignment between the product in development and the original product strategy and vision						
Recommend modifications to products characteristics if necessary						
Ensure products approval from the organizational internal panel						
Forecast product's expectable demand						
Formulate pricing strategies and tactics						
Specify targets and milestones						

Develop reasonable schedules and define critical paths and timelines						
Implement plans within established budget and time						
Integrate marketing communications (trade shows, advertising, PR, etc.) and measure its effectiveness						
Track product's financial performance and overall company results						
Monitor product's lifecycle from concept to grave						

Consider the following competencies in the domain of communication. Indicate to what extent the following are critical for an excellent performance as a Product Manager.

Not important at all (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)	Extremely important (6)
-----------------------------	---------------------------	-----------------------------	------------------	-----------------------	----------------------------

	1	2	3	4	5	6
Communicate with several types and levels of staff and external contacts, both in writing and oral						
Liaison between all key players (e.g. sales and technical and product development team)						
Translate technical writing into "user-friendly" customer documentation						

Consider the following competencies in the domain of persuasion and motivation. Indicate to what extent the following are critical for an excellent performance as a Product Manager.

Not important at all (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)	Extremely important (6)
-----------------------------	---------------------------	-----------------------------	------------------	-----------------------	----------------------------

	1	2	3	4	5	6
Negotiate and interact with diverse personality types						
Seek to build rapport and gain support, respect and commitment						
Build a valuable network of contacts (e.g. across business areas and within sales force)						
Act to build long-term relationships (e.g. customers, stakeholders and sales forces)						
Manage internal and external conflicting demands for the benefit of the organization						
Influence others to value ideas you want to pursue						
Assist the sales force (e.g. provide appropriate training to help salespeople to sell)						
Lead cross-functional teams (e.g. guarantee they are aligned with your goal, performing each respective responsibility described in the action plan)						
Delegate full authority and responsibility to develop specific skills within the PM team						

Consider the following competencies in the domain of managing multiple priorities and anticipating solutions for each foreseeable barrier. Indicate to what extent the following are critical for an excellent performance as a Product Manager.

Not important at all (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)	Extremely important (6)
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	1	2	3	4	5	6
Prioritize activities based on awareness of overall business goals						
Handle multiple complex projects at an appropriate level of detail						
Develop organized storage and filing systems to enable easy retrieval						
Identify possible solutions for each barrier						
Select the solution which more benefits brings to the company						

The following questions are merely intended for sample characterization.

Gender

<input type="checkbox"/>	Masculine
<input type="checkbox"/>	Feminine

Age

<input type="checkbox"/>	Bellow 26	26 to 35	36 to 45	46 to 55	56 to 65	More than 65
t						

How many years have you been a Product Manager? Consider all your professional record.

Please write the field (sector) where your company operates.

How many people work in your company?

<input type="checkbox"/>	Bellow 11	11 to 50	51 to 250	More than 250
t				

If you would like to leave any comments or suggestions about issues the survey has not covered please use the box below.

Thank you very much for your precious contribution and time!