The Influence of Internationalization on Software Product Management

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Abstract. The role of software product management within firms specialized in product software is of strategic importance, albeit complex to execute. When looking at the role of product management in an international context then, the aforementioned level of complexity tends only to increase. In this paper we present the results of two case studies conducted with software firms that already successfully entered and established themselves in international markets, addressing experienced challenges, issues, and notable differences between conducting product management activities in domestic and international markets. An overview of recommendations based on this research can support other software firms willing to make the step towards internationalization. If product managers take these recommendations into account, better informed decisions could be made and potential pitfalls avoided, leading to higher rates of success and progress when entering international markets.

Keywords: Internationalization, Software Product Management, Software Business, Requirements Management, Release Planning, Product Planning, Portfolio Management

1 Introduction

Internationalization is often seen as a logical next step in the life cycle of a software firm [10]. Plenty of opportunities arise as economic and political barriers fall, as global trade is more and more accepted and modern technology makes it possible to get within reach of a larger customer base. Although much research has already been conducted on the subject of internationalization focused primarily on internationalization strategies and opportunities [4,6,11,13], little research has been conducted on the influence of internationalization on software product management activities. We regard software product management as "the discipline and business process governing a product from its inception to the market or customer delivery and service in order to generate the largest possible value to a business" [7]. Various activities of software product management include for instance requirements management, release planning, product planning and portfolio management.

For firms specialized in product software, the role of product manager is of strategic importance, albeit complex to execute [17]. As solely offering a core

product or service in the software industry is often regarded as insufficient, complementary products and services are required to fulfill the needs of customers [12]. A software product manager is able to identify these specific needs, and can provide relevant information to internal and external stakeholders to address these needs. When looking at the role of product manager in an international context then, the aforementioned level of complexity tends only to increase, for instance due to foreign customer habits [2], lack of legitimacy and influence [9], and a lack of marketing capabilities [1]. Managing the activities of software product management in an international environment in a successful way is thus difficult but crucial in order to sustain, thrive and survive in international markets. A comparison is made of how product management activities are conducted in the domestic market compared to international markets. Based on this comparison, an overview is created containing challenges and issues as experienced by software product managers of firms that successfully established themselves on international markets. This overview can serve as a practical guide for other software firms willing to make this step in order to make better informed decisions and avoid potential pitfalls. The main research question of this paper is therefore as follows; "What influence does internationalization have on software product management activities and deliverables?"

The remainder of this paper continues with a description of the research method in section two, in which we will elaborate on the research methods we employed concerning the case studies and expert reviews. In section three, we discuss the initially identified factors that could be subject to the influence internationalization has on software product management. In section four, we give a short introduction of each firm that participated in the case studies, including the results of these case studies. An analysis of these results presented in section four will be discussed in section five, including tables summarizing the differences when conducting business internationally, the experienced challenges, issues and valuable lessons learned by product managers, and the contribution of this research to software firms willing to make the step toward international markets. In section six, we will discuss encountered validity threats to this research and make statements about generalization possibilities of the results. In addition, we also draw the most important conclusions of this research and provide suggestions for additional research.

2   Research Method

To be able to answer the research question, we made use of two case studies conducted at Dutch product software firms that successfully entered, penetrated and established themselves in international markets. We chose for a multiple case study design in order to get different, unique perspectives on the experienced challenges and issues by software product managers operating in an international context [18]. Because of the exploratory nature of this research, we opted for a structure that is in many ways similar to a recommended case study reporting structure as described by Runeson & Höst [14].

2.1 Case Study Selection Criteria and Validity

The data collection process took place by means of case studies conducted with three software product managers of two medium-to-large commercial product software firms. Two product managers stationed in the domestic market were interviewed, as well as one product manager stationed overseas. The main prerequisite when looking for a potential case study candidate, was that the candidate organization already successfully entered and established itself on an international market, thus having the experience available to provide constructive and meaningful information regarding the experienced challenges, issues and notable differences in the way product management activities are conducted domestically versus internationally.

It should be noted that due to the exploratory nature of this research, the qualitative semi-structured nature of the interviews and the small amount of case studies conducted, generalizability of the results is limited [18]. In addition, unique organizational characteristics of the companies studied such as different organizational structures, different international markets in which the companies operate, and different product-specific characteristics directly influence the generalizability of statements.

2.2 Data Collection and Evaluation of Results

First, an interview protocol was created based on the software product management competence model by Bekkers et al. to serve as a guideline during the case studies, resulting in semi-structured interviews lasting around one hour each [3]. This means the questions were planned and ordered, but not necessarily asked in the exact same order as listed [14]. This protocol was evaluated by means of an expert review with a practitioner specialized in product management in SMEs. Second, three interviews were then conducted with software product managers in order to gather relevant qualitative data on factors of influence concerning internationalization. This lead to the creation of an overview based on the gathered information from these interviews. The interviews were recorded and notes were made during the interviews. Third, the resulting overview based on the qualitative data gathered from the three case study interviews was then evaluated by means of an expert review with an academic specialized in internationalization. We consider the opinion of an academic adequate for assessing real-world situations, as such an evaluation is not biased or lacking judgment from the industry. After this expert review took place, the overview was made definitive.

3 Software Product Management Competence Model

The software product management competence model by Bekkers et al. was the main source of information upon which the semi-interview protocol is based [3]. In this competence model, four main business functions are defined. Within this research domain, a business function can be described as an amount of closely related processes or operations that are performed by a software product manager

(in a routinized way), in order to obtain a defined set of results, contributing to carrying out a part of the mission of an organization. Four different business functions are described within the competence model, these being: requirements management, release planning, product planning, and portfolio management. Each of the mentioned business functions consist of different focus areas, representing a coherent group of capabilities within a business function. With capabilities we refer to important software product management practices.

The business function of requirements management concerns the ongoing management of requirements outside of releases and consists of three focus areas: requirements gathering, requirements identification, and requirements organizing. Release planning then comprises software product management practices required to successfully create and launch a new release, and consists of six focus areas: requirements prioritization, scope change management, release definition, release definition validation, build validation and launch preparation. The product planning business function refers to the collecting of relevant information for the creation of a roadmap for products, product lines or core assets and consists of three focus areas: roadmap intelligence, product roadmapping and core asset roadmapping. Last but not least, the business function of portfolio management concerns the gathering of strategic information and decision making about the entire product portfolio of an organization, and is made up out of three focus areas: market analysis, product lifecycle management and partnering & contracting. Each focus area in the competence model was taken into account when creating the interview protocol, to make sure any software product management related activity according to the competence model, was covered.

4   Case Studies

Three semi-structured interviews were conducted with three software product managers. The interview began with first asking the product manager relevant introductory questions about the organization they work for, followed by questions based on the business functions and relevant focus areas as defined in the software product management competence model by Bekkers et al. [3].

The case study companies were renamed to Alpha and Beta because of anonymity requests. In addition, two product managers (one working in the Netherlands and one working in the United States) working for Alpha have been separately interviewed. A quick overview of statistical data of the companies studied can be seen in table 1. Subtitles in this section printed in bold refer to the four different business functions from the software product management competence model by Bekkers et al. Words in italics are the software product management focus areas.

4.1   Case Study: Alpha

Requirements Management When looking at the business function of requirements management at Alpha, no difference between markets was found

Table 1. Overview of the case study participants

Statistic	Alpha	Beta
Employees	120	1,800
Location of Headquarters	The Netherlands	The Netherlands
Products	Web content management systems, customer-driven online engagement solutions	(Financial) ERP systems, including HRM, CRM and project management solutions
Countries active in	The Netherlands, United States	The Netherlands and 40 other countries

concerning *requirements gathering*. Direct contact with customers, visiting fairs, being present at expositions, and the usage of an international ticket system where customers can report requests are regarded as the main sources of input when gathering requirements. Automated tools are employed to both *identify and organize requirements*, with no direct difference between the domestic and international market. The requirements are centrally *organized* and can thus be easily placed on the product backlog. This product backlog is part of the employed agile Scrum development philosophy.

Release Planning Every market exerts equal influence when *prioritizing requirements*, and a standardized prioritizing methodology is employed. When *preparing a release definition*, no representatives of international markets are present. When *validating a release definition* as the next step, either internal testing (by Alpha itself) is performed or launching customers are used, although this is done solely in the domestic market. *Scope change management* is centrally organized, as the overall corporate vision of the organization is largely responsible for the way in which the product is heading. When scope changes take place, every internal and external stakeholder is informed of scope changes. When *validating a release build*, no use of pilots is made. The product platform is built in such a way that every customer is on its own specific version of the software, thus updating is more or less standardized, can take place whenever the customer desires, and is expected to go flawless. When *preparing for a launch*, information about an upcoming release is communicated to all internal and external stakeholders. Webinars are frequently used to share this information for each market at the same time, although webinars are scheduled to be held separately for each market due to e.g. different time-zones and languages.

Product Planning As aforementioned, the corporate vision serves as the main source of input when creating a (short-term) *product roadmap*. Next to this, direct input is also acquired from all customers, and preferences of customers are measured in various ways, e.g. during specially organized customer event days

where customers can give their opinion on the roadmaps presented during these events. Since a release cycle of three months is used for each product, employees usually think three months in advance. No differences were found with regard to the way *roadmap intelligence* is gathered in international markets, as every product is reviewed in a standardized manner (and in English, thus accessible for every internal stakeholder throughout the organization). Every market is considered equal in terms of influence on roadmaps.

Portfolio Management Analyst sources such as Gartner or Forrester are considered to be of significant value when performing *market analyses*. This is considered especially important in markets such as the United States where the labor market is characterized by loose policies. Employees of relevant companies often consult the aforementioned analysts, in order to be able to clarify the decision they made for a chosen product. Being present in the lists of these analysts is therefore regarded to be of significant importance. Competitor analyses are conducted in a decentralized way, meaning in every market in which the company is active, and later combined to get a general, international overview. Win-loss analyses are also conducted in every market, and are considered to be a source of valuable knowledge. Knowing why (potential) customers decide to buy or not buy a product directly influences product strategies. Customer preferences of the different markets in which the organization operates and the underlying platform architectures of its products exert influence over the *life cycles of the products*. Ultimately however, it is centrally determined, referring to the influence of the corporate vision. Major changes in products are also centrally managed, although external parties are usually involved as they generally possess relevant knowledge. The proposed changes are then reviewed, discussed, written down and centrally stored, accessible for all relevant internal stakeholders.

The introduction of separate product lines is seen as unfavorable, as the current platform architecture is considered to be highly flexible. Introducing new product lines then is considered to create only more overhead. Different versions of software, specifically oriented at for instance the public and private sector are on offer, but are built on the same platform. Regarding *partnering and contracting*, service level agreements (SLAs) are in place taking the differing time zones into account. Support is offered from the domestic market, but various working shifts are employed to be able to provide support throughout the different time zones. External support centers in different time zones are considered due to the increase in the amount of customers. In addition, support preferences are considered to be relatively homogeneous, except for differences concerning national legislation. This is especially the case when targeting governmental organizations that are bound by different rules, requiring the possession of specialized knowledge by support personnel.

4.2 Case Study: Beta

Requirements Management When looking at the business function of requirements management, no difference was found between markets with regard

to the way in which *requirements gathering* takes place from customers. However, the central marketing department plays a pivotal role concerning requirements gathering by performing market research in different countries and the creation of business cases. Interesting market trends are translated to business needs, followed by the creation of conceptual scenarios. Business needs resulting from market research, business cases and customer requirements are then merged to create functional solution. A network of customers and partners is extensively involved from the inception of a solution to its controlled release, which is supported by working in two-week Scrum sprint cycles. Automated tools are used when *identifying* requirements (e.g. to link requirements with similar functionality together), and incoming requirements as provided by customers are *organized* by storing these in a central repository and get updated when necessary.

Release Planning Markets have different weights with regard to the *prioritization of requirements*. This is primarily due to different localizations in which legal aspects have absolute priority, as customers have obligations imposed by governments with respect to e.g. financial reporting. Since a limited amount of development capacity is available, the allocation of developers to address legal requirements has priority. This allocation is largely based on a localization matrix, consisting of five capability tiers of compliance with legislation of all the countries in which the company operates. Apart from legal aspects, the size of the customer base of a specific localization and the results of conducted cost-benefit analyses are also taken into account when prioritizing requirements.

Input is gathered from all markets when *preparing a release definition*. Every market has an equal amount of influence, and the organization is structured in such a way that every country is involved during this process. The corporate vision as outlined by the board, however, serves as the main guideline. When *validating a release definition* then, business cases are created for each market. This is of significant importance due to differences in national legislation. External parties are involved during the validation of the release definition, which is termed a controlled release. Intensive use is made of controlled releases (pilots) when *validating a build*. Launch impact analyses are also conducted for each market to analyse whether the release and deployment of a new build will go without problems. When the controlled releases then went without problems, the build will be released for all markets at the same time.

Differences can be seen when looking at the *launch preparation* for a new build, specifically with regard to timing and internal reporting. The organization strives to make all information as abstract as possible, to which each market can add its own local flavor. Examples are differences in timing (when reporting to external stakeholders) and deciding what information is relevant or irrelevant for a given market. All internal stakeholders are informed about information concerning a new launch at the same time.

Last but not least, *scope changes* to the corporate product line are centrally managed, and impact analyses are performed for each relevant country to measure the effects of possible scope changes.

Product Planning *Roadmap intelligence* is gathered through consultation with all relevant internal stakeholders to analyse what markets are of potential interest to be entered. Overviews showing current and expected upcoming trends within the industry are also created. Overviews showing the big picture of important developments in terms of technology are considered to be of secondary importance to overviews showing important market trends, since it is found that technology is complementary to market demands.

The products on offer have three releases each year, but this amount is not fixed in case there is a good reason to deviate from the scheduled releases. *Product roadmaps* are in place showing the (short-term) vision for each product, and is primarily centrally coordinated. What is interesting to note, is that product management seen from an organizational structure perspective, is as centralized as possible, whereas marketing is as decentralized as possible. The motivation behind this is to allow the decentralized marketing departments to add their own aforementioned local flavor to the products, which is considered to contribute to becoming a local player as much as possible. Being a local player as an international organization within another market is regarded as the highest achievable status, since no distinguishes can then be made between the organization itself and their local competitors. Local competitors are considered to have a natural advantage due to for instance being able to apply their knowledge of their own market and know the mindsets of customers [5].

All *core assets* of the organization are registered and centrally stored. Make-or-buy analyses are constantly performed, to decide whether a given process can be outsourced or should be performed with the available internal resources. Roadmaps are present showing how the core assets are continuously sustained, upgraded and enhanced.

Portfolio Management *Market analyses* are conducted by both internal and external parties, and each market is intensively monitored. Every market has its own marketing strategy, in order to most optimally approach (potential) customers from the respective markets. Competitor analyses performed in each market indicate what actions need to be undertaken in order to become a local player as much as possible. In addition, information resulting from the monitoring of customer preferences in each market is regarded as the backbone of the corporate strategy, as this greatly influences the direction in which the organization is heading. A win-loss analysis is also performed for each large customer, in order to analyze why a (potential) customer did or did not purchase a product and to discover the motivations behind the choices made that lead to the specific outcome. It is considered valuable to know what customers or prospects think with regard to for instance the price of a product, the relationship intimacy with the organization, the reputation, or functionalities offered.

The *lifecycle* of each product on offer is managed on a central level. Changes in the product are managed in a decentralized manner however. This is primarily due to local differences in legislation. In this case, input is sent from decentralized units to the central organization, after which all the input from the different

markets is combined, resulting in an official determination of the product lifecycle. Multiple product lines are maintained for different market types, primarily to optimally address local customer preferences and in order to allow for flexible adaptation to altered national legislation.

When looking at *partnering & contracting*, service level agreements are in place and are considered to be relatively homogeneous among markets, although with some minor differing details. Support to customers is centrally organized, and support needs are also found to be relatively homogeneous among markets. Due to the differences in legislation in each separate market however, support is kept up-to-date to be able to optimally serve each market. This is regarded as one of the core competences of the organization, contributing to the realization of the preferred image of being a local player.

5   Analysis

We presented the case study results for each business function and their belonging focus areas. In this section, we will go in-depth about the interesting findings per business function, in order to keep the closely related processes (focus areas) together. Tables 2, 3, 4 & 5 present differences in the way product management activities are conducted domestically versus internationally for each aforementioned business function in order to get a better overview.

5.1   Requirements Management

In the results it becomes apparent that little difference exists between conducting requirements management activities in the domestic market and international markets (see table 2). The methods employed by both organizations to *gather, identify and organize requirements* are largely the same, except for Beta giving significant responsibility to the central marketing department. The given reason for this, is the usage of a market-driven solution development framework. This involves close monitoring of markets in order to identify new market trends and customer preferences, leading to product requirements.

In addition, both Alpha and Beta apply the Scrum development philosophy when performing activities related to the *organization of requirements*. As conducting business on an international scale tends to increase the complexity of communication and cooperation, the Scrum philosophy is able to e.g. support stakeholders involved (including customers) by focussing on shortening feedback cycles between these stakeholders, reducing time between customer requests and implementations, all of this order to reduce the overall complexity of interaction between relevant stakeholders at different locations [16].

5.2   Release Planning

Both organizations *prioritize requirements* in a different way. At Alpha, each market has an equal amount of influence in terms of speaking volume. Beta

Table 2. Overview of differences concerning requirements management activities

Requirements Management	Influences of Internationalization
Requirements Gathering	No differences, although central marketing department plays a pivotal role depending on the differing geographical locations and time-zones, cultural preferences, languages, and size of the customer base of localizations
Requirements Identification	Usage of automated tools for all markets to bridge geographical distances
Requirements Organizing	Centrally stored, accessible to relevant internal stakeholders

however takes various factors into account when deciding how much influence each market has. Requirements concerning legislation for each localization have absolute priority when prioritizing requirements. Being able to react rapidly to changes in legislation affecting financial processes is regarded as one of the core competences of the organization. In addition, the influence the different markets have is also based on the size of the customer base of each localization, meaning localizations with more customers are prioritized over those with less customers.

The corporate vision of both organizations is the most influential source when *preparing a release definition*. The organizational structure of Beta however is designed in such a way that every market is able to voice its opinion when gathering input. This is performed because of aforementioned differences in national legislation among markets. As a consequence, *validation of releases* take place in all markets in which Beta is active. Alpha validates its release definition only in its domestic market, since not much product-related differences can be seen between the markets, hence causing only more (e.g. communicative) overhead if testing would take place in other markets.

Both organizations centrally *manage scope changes* as the corporate vision is the primary driving force behind these changes. Another difference can be seen when looking at the way in which *build validation* is conducted. Since the updating process at Alpha is standardized, no use of controlled releases is made to validate the build. Beta however makes intensive use controlled releases as well as external parties, since each localization has its own version of the software and thus requires to be separately tested.

Alpha and Beta both employ different approaches to address different markets when *preparing for launches*. Alpha makes use of separate webinars for each market due to different time-zones and languages. Beta relies on decentralization in international marketing, meaning international operations are delegated to separate markets [8]. Product management is located as central as possible, whereas marketing is decentralized as much as possible. Information sent to international markets is made as abstract as possible by the central marketing department based upon input from product management, after which local flavors can be added by the decentralized marketing departments. This allows the

organization to position itself as a local player in international markets with all its benefits, such as a higher level of awareness leading to increased brand reputation, trust and the development of close relationships with customers [15].

Table 3. Overview of differences concerning release planning activities

Release Planning	Influences of Internationalization
Requirements Prioritization	Influence of each market depends on the size of the customer base of a localization, financial aspects such as revenue, and critical market-specific requirements such as legal aspects
Release Definition Preparation	Centrally coordinated based on corporate vision, although input is generally gathered from all markets
Release Definition Validation	Validation is only performed in the domestic market, except for when critical market-specific influences on the product demands for separate validation
Scope Change Management	Centrally managed due to the influence of the corporate vision
Build Validation	Depending on the nature of the product, business model, and delivery model
Launch Preparation	Product management is as centralized as possible, whereas marketing is as decentralized as possible to add local flavors. This depends on geographical locations and time-zones, cultural preferences, languages, and size of the customer base of localizations.

5.3 Product Planning

Both organizations consult each market when *gathering roadmap intelligence*. Alpha standardized the way in which products are reviewed per market and the results are accessible to every internal stakeholder in English, thus reducing communicative barriers. Beta combines intelligence received from each market in order to get a bigger picture of global societal and technological trends. When *creating a product roadmap* however, both organizations use the corporate vision as their main source of input. The creation of product roadmaps at Alpha is done entirely by the central headquarters itself, whereas Beta consults the decentralized marketing departments for information and feedback. Both organizations centrally *store and register their core assets*.

5.4 Portfolio Management

Both organizations gather information from each market when performing *market analyses*. Alpha however places additional emphasis on analyst reports such as reports from Gartner or Forrester. This is considered especially important in markets such as the United States where its labor market is characterized by

Table 4. Overview of differences concerning product planning activities

Product Planning	Influences of Internationalization
Roadmap Intelligence	Every product is reviewed in a standardized manner, accessible for every internal stakeholder. Input from each market is then combined to get a bigger picture of societal and technological trends.
Product Roadmapping	Corporate vision is the main source of input and is thus centrally organized, although decentralized marketing departments also provide valuable input
Core Asset Roadmapping	Centrally stored, accessible to relevant internal stakeholders

loose policies, making it relatively easy for employers to fire personnel. Employees of relevant companies often consult the aforementioned analysts, in order to be able to clarify the decision they made for a chosen product. Beta performs market analyses in each market by making use of the decentralized marketing departments. Competitor analyses are also performed in each market to identify opportunities and threats.

The corporate vision is again the main factor of influence when looking at the *management of product lifecycles* performed by each company. However, Alpha takes input from each market into account to make sure planned changes to products do not negatively affect markets other than its domestic market. Beta also actively communicates with other markets about planned changes, to ensure no problems arise due to differences in national legislation.

When looking at *partnering & contracting*, both Alpha and Beta regard support preferences and their service level agreements to be relatively homogeneous among markets. Beta experiences minor differences in support questions because of differences in legislation among markets, but this is not regarded as a problem.

Table 5. Overview of differences concerning portfolio management activities

Portfolio Management	Influences of Internationalization
Market Analysis	Analysts are of significant influence when performing market analyses. Every market has its own marketing strategy, and competitor analyses are performed in each market.
Product Lifecycle Management	Centrally organized due to the influence of the corporate vision. Reports from each market are taken into account, and changes in the product are managed in a decentralized way depending on market-specific circumstances.
Partnering & Contracting	SLAs and support preferences are considered relatively homogeneous among markets

5.5 Lessons Learned

At the end of the interviews, the case study participants were asked whether they had learned valuable lessons they would like to share. The case study participants indicated **no cookie-cutter approaches exist** when it comes to performing product management activities in international markets. There are no real 'one-size fits all' solutions since for instance every new request, issue, or activity demands another approach. The complexity of product management in foreign markets should thus not be underestimated.

Another lesson learned, was that organizations should **decline customer requests that negatively affect the organization in the long run**. An example given was declining requests that involve tailor-made software for different localizations. Beta experienced that delivering tailor-made software seemed like a lucrative deal at first sight, but became a real burden as several years passed. As the tailor-made software slowly became legacy software and Beta itself as an organization evolved over time, nobody eventually knew who was responsible for the development of what part of the tailor-made software. This resulted in problems concerning support that lead to time-consuming processes and unnecessary costs. Beta now considers the acceptance of tailor-made software proposals as misplaced customer-driven behavior. Organizations should therefore always think of long-term consequences when considering a customer request.

Attempting to overcome cultural differences in other markets is regarded as another underrated problem. Alpha indicated that the organization consistently had the feeling it was in a less favorable position compared to local competitors, due to societal factors such as chauvinism. Becoming a fully integrated local player is considered to be near impossible. This creates **the need for differentiation and the propagation of unique selling points** compared to products offered by competitors.

Alpha also mentioned the problem of experiencing communicative barriers. Due to operating in different time-zones and the relatively long geographical distance between offices, employees working in the United States indicated that they experience problems with being kept up to date. No longer is interesting information for instance exchanged with fellow colleagues during short conversations while standing next to a coffee machine. This implies **the need for well-defined and structured communication channels**.

6 Discussion & Conclusion

We addressed the influence internationalization has on software product management activities and deliverables. This was done by means of conducting case studies at internationally operating product software companies in the form of semi-structured interviews. This semi-structured nature was the result of using an interview protocol based on both a literature study and an expert evaluation. We found that internationalization influences all business functions described in the software product management competence model by Bekkers et al [3].

When looking at the business function of requirements management, we found that decentralized marketing departments play a pivotal role in gathering requirements to most optimally address customers. In addition, requirements are centrally stored and accessible to all relevant internal stakeholders to bridge geographical distances and time-zones. The size of a customer base of a localization, revenue, and critical market-specific requirements such as legal aspects are of significant influence when looking at the business function of release planning. This is especially the case when prioritizing requirements. The preparation and validation of release definitions, management of scope changes and launch preparation is performed as centralized as possible, except when foreign market-specific issues are involved, for instance legal aspects. The costs and effort of performing these activities abroad was found to outweigh the benefits it could offer. The corporate vision defined by the executive board was found to be strong factor of influence when looking at the business functions of product planning and portfolio management. It is the main source of influence concerning product roadmapping and product lifecycle management. In order to get a bigger picture of global market demands and societal and technological changes however, relevant stakeholders in foreign markets are also consulted. SLAs and support preferences are considered to be relatively homogeneous among markets.

Among lessons learned by the interviewed product managers were that no cookie-cutter approaches exist when it comes to performing product management activities in international markets, and that customer requests that negatively affect the organization in the long run should be declined. The need was also felt to differentiate and propagate unique selling points in international markets, in order to compensate for disadvantages international newcomers have compared to already established local players. They also mentioned the need for well-defined and structured communication channels to overcome geographical distances between offices that impose communicative barriers.

It has to be noted that generalizability of the presented findings is limited due to the small amount of case studies conducted. Unique organizational characteristics of the companies studied such as different organizational structures, different international markets in which the companies operate, and different product-specific characteristics also directly influence the generalizability of the findings. Next to this, the organizations studied offer different types of products and services (e.g. a web content management system versus an organization-wide ERP system). This does not make both organizations directly comparable when comparing how specific activities are performed within an international context.

Future research should be directed at gathering a larger and more representative dataset, for instance by conducting a structured survey in the product software industry. Conducting additional case studies will continue to provide useful data, although a larger dataset is preferred in order to make plausible statements when comparing organizations. A larger dataset will also allow for the division of companies in categories, making it possible to make statements about findings between different product type companies. Additional research should also aim to include survey participants that have their headquarters lo-

cated in different countries, to study the specific effects of political-geographical influences on conducting business from another perspective. Last but not least, future research can also orient itself toward researching specific parts of internationalization, such as whether the usage of external partners in international markets positively influences the internationalization trajectory.

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