MASTER

Factors which enhance interdepartmental integration in a project based organization
an internal marketing approach

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Award date:
2014

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Factors which enhance interdepartmental integration in a Project Based Organization: An Internal Marketing Approach

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in partial fulfillment of the requirements for the degree of

Master of Science in Innovation Management

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Series Master Theses Innovation Management

Subject headings: Project Based Organizations, interdepartmental collaboration, communication and integration, Internal Marketing, quality department, qualitative research, project performance
Abstract

A Project Based Organization (i.e., PBO) can be defined as an organization where the project forms the primary unit for competition, organization, and innovation (Hobday, 2000). Due to the decentralized nature of a PBO, coordination and integration across and within projects is critical (Turner, 2000). The research stream of interdepartmental integration indicates that differences in goals, values, and activities between departments (e.g. marketing, sales, R&D) are difficult to overcome and serve as the root cause of interdepartmental conflict (i.e., lack of coordination and integration). Internal Marketing (i.e., IM) is an approach that bridges differences in goals, values, and activities. It furthermore stimulates the development of networks of internal relationships (e.g. relationships between employees, teams, or departments within a firm) (Ballantyne, Martin, and Payne, 1995) and knowledge renewal, and therefore can be seen as a new source of competitive advantage (Ballantyne, 2003).

The research question for this research is therefore:

“To what extent can the Internal Marketing approach explain the interdepartmental integration, and thereby project performance within a Project Based Organization?”

An organization that complies with the characteristics of a PBO, and therefore functioned as research context, is Vanderlande. Vanderlande is a production company that designs and installs warehouse automation-, parcel and postal-, and baggage handling systems. A qualitative research was conducted based on semi-structured interviews. Two analyses were conducted: first a within- and between-, and second a general analysis. The first finding of the analyses is that Vanderlande applies IM on an ad hoc basis (i.e. one-off, for specific cases). This expresses itself in the following manner: due to a temporary increase in interdepartmental integration, a sense of urgency occurs, the involved departments have a common goal, and the needed resources are aligned to solve critical situations. This first finding is translated into an emergent conceptual model. Additionally, a second finding is the uncertainty in job- and task responsibilities, and a lack of involvement in the project process for the quality department. For both findings a redesign is proposed. First, to ensure a continuous appliance of the IM approach, the emergent conceptual model needs monitoring and controlling by the IT department. Second, single points of contact need to be created to enhance the clarity of the job- and task responsibilities of the quality department. Together with this, the quality manager must benchmark the capabilities of the department. This study overall contributes to theory by providing research in the IM approach and PBO setting, which can be used for future research.
Management summary

Introduction

A Project Based Organization (i.e., PBO) can be defined as an organization in which the project forms the primary unit for competition, organization, and innovation (Hobday, 2000). It is an organization in which products or services are provided in customized form for either internal- or external customers (Turner, 2000). However, due to its decentralized nature, coordination and integration across and within projects is critical. Monitoring and controlling the processes associated with the projects will ensure the learning ability of a PBO. The research stream of interdepartmental integration indicates that differences in goals, values, and activities between departments (e.g. marketing, sales, R&D) are difficult to overcome and serve as the root cause of interdepartmental conflict (i.e., lack of coordination and integration). The key to overcome this problem is a holistic approach that is able to bridge differences in goals, values, and activities such that it integrates all viewpoints. Internal Marketing (i.e., IM) appears to be such an approach as it stimulates a network of internal relations and eventually can increase project performances (e.g. Ballantyne 2003; Rafiq and Ahmed 2000; Lings and Brooks 1998; Ahmed et al. 2003 and Foreman and Money 1995). From this, the research question was formed:

“To what extent can the Internal Marketing approach explain the interdepartmental integration, and thereby project performance within a Project Based Organization?”

Literature review

The IM approach, which enables interdepartmental integration, may overcome the main difficulties in organization-wide development, gaining knowledge and learning on a routine basis of projects of a PBO. The conceptual framework, presented in Figure 1, suggests that a number of managerially controllable actions and policies are needed to can be used to improve the extent to which the IM approach is taken into account and subsequently project performance. Interdepartmental integration is required for effective intra-company relationships (Stank, Keller, and Daugherty 2011), an aspect that IM stimulates (Ballantyne, Martin, and Payne, 1995). By enabling interdepartmental integration, the IM aspects (e.g. management support, employee satisfaction, customer orientation, awareness, learning orientation) could have a positive effect on the
performance of a project as it counterbalances the stated difficulties of a PBO. As the effect of interdepartmental integration on the project performances is dependent of specific project characteristics, these function as a contingent factor.

The conceptual research model shown in Figure 1 combines the IM approach, interdepartmental integration, and their effect on project performance, and shows their relationships.

![Conceptual research model](image)

Figure 1: Conceptual research model

**Methodology**

Due to the empirical- and normative nature, the approach of the study is based on two cycles: the empirical-, and the regulative cycle (van Aken, Berends, and van der Bij, 2007). An organization that complies with the characteristics of a PBO, and therefore functioned as research context, is Vanderlande. Vanderlande is a production company that designs and installs warehouse automation-, parcel and postal-, and baggage handling systems. The research is based on a qualitative research using semi-structured interviews. The units of analysis are projects, as projects form a central point in the activities of Vanderlande. 30 employees of six departments (i.e. sales, purchasing, project manager, service, R&D, quality) part of the research scope are interviewed. The data analysis is based on coding of transcribed interviews.
Data analysis and results

Throughout the interviews it appeared that the interviewees could give more general remarks related to failures and successes of projects, rather than project specific remarks (i.e. projects part of the scope). That is why two analyses are conducted. First a within- and between project analysis is conducted. The goal of the within- and between analysis is to indicate the occurred failures during the projects, and determine their contextual causes (for instance project characteristics). Second, an analysis is based on the general data collected from the interviews. The goal of the second analysis is helping to understand the underlying causes for the indicated failures and successes. The first finding of the analyses is that Vanderlande applies IM on an ad hoc basis (i.e. one-off, for specific cases). This expresses itself in the following manner: due to low interdepartmental integration and awareness, project failures increase, a sense of urgency occurs (i.e. the involved departments have collaborative behavior, shared values, and a mutual goal), and by the creation of awareness, the needed resources are aligned to solve critical situations. This first finding is translated into an emergent conceptual model, see Figure 2.

![Figure 2: Emergent conceptual model](image)

A second finding is the uncertainty in job- and task responsibilities, and lack of involvement in the project process for the quality department. Due to the indicated need for the quality department in critical, or complex situations, their importance in terms of involvement is addressed. They play a crucial role in solving problems.

Redesign

Due to the two findings, a redesign is proposed per finding. The conceptual model based on the first finding indicates that the ad hoc appliance of the IM approach is beneficial for solving problems. As not all the needed aspects indicated by the IM approach are present, and due to the identified inefficiency of Vanderlande, a shift can be made from ad hoc solving problems to foreseeing and preventing problems to occur. The emergent
conceptual model needs monitoring to enable continuous IM. This continuous IM approach furthermore is needed to sustain a long term growth of Vanderlande and therefore increase the current project performances (i.e. efficiency). The controlled emergent conceptual model is presented in Figure 3. Due to a continuous IM approach, project failures and temporary urgencies are not part of the cycle anymore. The IT department will be responsible for monitoring and controlling the emergent conceptual model. The IT department will involve the quality department in monitoring and controlling the emergent conceptual model due to their knowledge of important quality factors.

![Figure 3: Controlled emergent conceptual model](image)

The second finding indicates that there are uncertainties in job- and task responsibilities of the quality department, together with a lack of involvement during the project process. The redesign for the second finding is appointing single points of contact of the quality department per project. This solution will clarify the job- and task responsibilities and may increase involvement. A requirement for this solution is that the quality manager benchmarks the capabilities of the department, which is aligned with the IM approach.

**Discussion and conclusion**

In this study, the effect of IM on the project performance of a PBO was explored. Due to low interdepartmental integration and awareness, project failures occur. By creating a temporary sense of urgency and awareness, the required resources can be aligned: an ad hoc IM approach is identified. Although the net sales of Vanderlande
have increased from 2010 – 2012, the net income has declined. This seems to indicate that the efficiency of Vanderlande has decreased. This stresses the importance of a shift towards proactively anticipating on possible problems, rather than reactively solving problems. In other words: a shift from ad hoc IM towards continuous IM. This shift can be made possible by monitoring and controlling the emergent conceptual model. This enables the two missing aspects (i.e. awareness, learning orientation) indicated by the IM approach, and disables project failures, and temporary sense of urgencies. Furthermore, the quality manager will need to benchmark the performances based on the IM approach. This will enhance the clarity of job- and task responsibilities of the quality department. To increase the degree of involvement, a single point of contact can be appointed per project. Some limitations were found in this study such as the single case study performed, the limited scope in terms of departments, the limited amount of projects together with their diversity, and the use of subjective data. Still, this master thesis provides contribution to theory and practice. Organizations, and in specific, Vanderlande, may use the insights provided in future strategic decisions. It furthermore forms a starting point for additional studies on IM and PBO’s.
Acknowledgements

With this report, the degree of Master of Science in Innovation Management at Eindhoven University of Technology is concluded. Vanderlande has provided the opportunity of conducting the research in the period February - October. Vanderlande is a production company that designs and installs warehouse automation-, parcel and postal-, and baggage handling systems, established in the Netherlands.

I would first like to thank Vanderlande, for providing me the ability of performing this study. Great appreciation goes out to my company supervisor, Helene Moonen, who continuously supported me and helped me getting involved in the organization as well. Additionally, I would like to thank Rob Verhagen in particular, for being critical and helping in determining the research scope, and direction. I would like to thank all the interviewees who were willing to cooperate and invest time in my research. Furthermore, I would like to thank all the other colleagues in the organization that helped me along.

Secondly, I would like to thank my first supervisor of the University, Michel van der Borgh. I am grateful for the amount of time Mr van der Borgh invested in my research. His extensive knowledge and experience in research were a great help in finishing my master. Additionally, I would like to thank my second supervisor of the University, Ed Nijssen. I appreciate the involvement in the final phase of this study in providing objective feedback and a thorough review of the study.

I would like to end my acknowledgements with a known quote that covers my overall experiences in achieving my Masters Degree, and specifically the iterative process I experienced during this research.

“If it doesn't challenge you, it doesn't change you” – Fred DeVito –

Eline Ponjé

Eindhoven, October 2014
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Introduction

1.1. Background

Over the past 50 years, a shift could be witnessed in the nature of work in organizations; from mass production with relatively stable customer demands to the current situation in which products or services are based on a specific design to meet idiosyncratic customer demands (Turner and Keegan, 2001). The organizational structure co-evolved with this trend, and nowadays many companies use project based organizational designs to deal with heterogeneous and dynamic customer needs (Sydow, Lindkvist, and DeFillippi, 2004).

A Project Based Organization (i.e., PBO) can be defined as an organization in which the project forms the primary unit for competition, organization, and innovation (Hobday, 2000). It is an organization in which products or services are provided in customized form for either internal- or external customers (Turner, 2000). The main advantage of a PBO is that it allows the creation and recreation of new organizational structures (Hobday, 2000). Due to its structural flexibility, a PBO is able to quickly respond to changing needs of the client and able to deal with emerging properties in production (Hobday, 2000). More importantly, a PBO also has the ability to integrate a variety of knowledge and skills that support the ability to cope with uncertainties and project risks (Hobday, 2000). A successful PBO depends on decentralized teams and an autonomous project manager that manages these teams (O’Dell, and Grayson, 1998).

However, due to its decentralized nature, coordination and integration across and within projects is critical. Poor coordination and integration between departments within a PBO may impede achieving economies of scale, facilitating organization-wide development, performing routine tasks, coordinating cross-project resources, shortening the time to take decisions, and clarifying job and task responsibilities (Hobday, 2000; Galbraith, 1971). For example, knowledge gained in projects needs to be stored in order to provide opportunities to improve project routines (Sydow et al. 2004). However, the non-recurring and one-off nature of project activities is argued to make learning on a routine basis more difficult (Winch 1997; Hobday 2000; Boh 2006). Even though this learning and thus knowledge sharing across individuals and projects can help solve problems of others (Davies and Brady, 2000).

So, while PBO’s are important organizational forms to deal with heterogeneous and dynamic customer demands, the main challenge for managers is to integrate and combine knowledge such that learning within and across
projects occur. Monitoring and controlling the processes associated with the projects will ensure the learning ability of a PBO.

In general, scholars have investigated numerous factors that make coordination and integration within organizations difficult. Research on interdepartmental integration (e.g. Stank, Keller, and Daugherty 2001; Kahn 2001; Urban and Hauser 1993; Ellinger, Keller, and Ellinger 2000; Pinto and Pinto 1990; Barrat 2004 and Mohr, Fisher, and Nevin 1996) shows that differences in goals, values, and activities between departments (e.g. marketing, sales, R&D) are difficult to overcome and serve as the root cause of interdepartmental conflict (i.e., lack of coordination and integration). The key to overcome this problem may be a holistic approach that is able to bridge differences in goals, values, and activities such that it integrates all viewpoints. Internal Marketing (i.e., IM) appears to be such an approach as it stimulates a network of internal relations (e.g. Ballantyne 2003; Rafiq and Ahmed 2000; Lings and Brooks 1998; Ahmed et al. 2003 and Foreman and Money 1995). Furthermore, it aims to stimulate knowledge renewal by improving information flows in cross-functional ways (Ballantyne, 2003). As such, the IM approach could counter balance the difficulties associated with PBO’s.

Studies on interdepartmental integration, PBO’s and IM are far from new in the marketing-, innovation management-, logistic management-, operational-, and change management literature. Despite the interest, there does not appear to be a clear understanding of how the three closely related constructs relate to each other. Due to the lack of existing literature on IM, interdepartmental integration, and PBO’s, this research has an exploratory nature. A qualitative study is therefore conducted at Vanderlande (i.e. PBO) as research setting. Specific issues of Vanderlande are the difficulties in knowledge sharing, and communication and collaboration within- and between projects.

1.2. Research questions

Due to the decentralized nature of a PBO, interdepartmental coordination and integration across and within projects is critical (Hobday, 2000). Monitoring and controlling the processes associated with the projects will ensure the learning ability of a PBO. The key to overcome the difficulties of a PBO may be the IM approach, as it stimulates a network of internal relations, and eventually can increase project performances (Ballantyne 2003; Rafiq and Ahmed 2000; Lings and Brooks 1998; Ahmed et al. 2003 and Foreman and Money 1995). From this, the research question was formed:
“To what extent can the Internal Marketing approach explain the interdepartmental integration, and thereby project performance within a Project Based Organization?”

Additionally to the main question, a sub-question was formed with a practical approach due to the research setting:

“In what way can Vanderlande benefit from the gained knowledge related to Internal Marketing, and apply this understanding within the organization?”

1.3. Structure thesis

The structure of this thesis is based on two cycles: the empirical-, and the regulative cycle (van Aken, Berends, and van der Bij, 2007) presented in Figure 4. As the approach of the research is a combination between an empirical- and normative question. The empirical cycle (i.e. left cycle) will be the first cycle that will be completed, the outcome of the evaluation constitutes as input for the regulative cycle (i.e. right cycle).

![Empirical- and regulative cycle (van Aken et al. 2007)](image)

The regulative cycle (i.e. right cycle) will not be completed, only the the problem definition, analysis and diagnoses, and finally, the redesign will be completed. Table 1 represents the report structure, it indicates what chapters represent which cycle (i.e. empirical- or regulative cycle).
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Table 1: Report structure

First, an extensive literature review is provided which will be concluded with a conceptual model. Second, the methodology section describes the research context, data analysis, collection, and interpretation. Third, the data analysis together with the results is presented. Fourth, the redesign chapter presents two redesigns to overcome the findings of the analysis. The three steps mentioned in the regulative cycle (i.e. problem definition, analysis and diagnoses, redesign) all need to be executed to create the overall redesign. Finally, the discussion and conclusions section together with the implications, limitations, and directions for future research will conclude this thesis.
Literature review

This section describes the current status quo in the literature on Project Based organizations (i.e. PBO's), interdepartmental integration, and Internal Marketing (i.e. I.M).

2.1. Research gap

Figure 5 provides an overview of previous empirical research on IM, PBO's, and interdepartmental integration. This Venn diagram reveals that these three research streams examine closely related constructs (e.g. knowledge sharing in PBO's, interdepartmental project teams, interdepartmental collaboration and service quality).

However, there has been little empirical research that bridges any two of the three domains, as is shown in the gray areas. Previous studies have not acknowledged the combination of the important features PBO's, interdepartmental integration and IM. The foci in researches all have common ground, but at the centre of the three research areas lies a research gap which has not been examined yet. This literature review is intended to address the research gap.

2.2. Project Based Organizations

The PBO is seen as an ideal organizational form to deal with fast changing markets, increasing product complexity, cross-functional business expertise, technological uncertainty, and customer-focused innovation (Hobday, 2000). PBO's can be found in a wide range of industries. Examples are consulting and professional services (e.g. public relations, architectural design, advertising, law, accounting, management consulting), cultural industries (e.g. video games, fashion, publishing, film making), high technology (e.g. computer hardware, software, multimedia), and complex products and systems (e.g. telecommunications, construction, infrastructure, transportation) (Sydow et al. 2004). In the majority of these industries frequent interaction and negotiation with project organizers and clients is needed for the often innovative design of services and products (Hobday, 1998).
Figure 5: Overview of empirical research

**Foci in Project Based Organization Research**


**Foci in Internal Marketing Research**

- **Customer related outcomes** (e.g. service quality): Lings and Brooks 1996; Stank, Keller, and Daugherty 2001; Rafiq and Ahmed 2001.
- **Internal outcomes**:

**Foci in Interdepartmental integration Research**

- **Product development performance**: Kahn 2001; Urban and Hauser 1993; Pinto and Pinto 1990.
- **Collaborative communication and performance**: Mohr, Fisher, and Nevin 1996.

**Knowledge sharing in PBO’s** (e.g. Boh 2006; Bresnen et al, 2004)

**Interdepartmental collaboration and service quality** (e.g. Stank et al. 2001)

**Interdepartmental project teams** (e.g. Pinto et al. 1993)
Within PBO’s resources capabilities and knowledge are exchanged within projects, and not surprisingly, projects form the centre of a PBO (Boh, 2006). A project refers to a human activity that achieves a clear objective against a time scale (Atkinson, 1999).

A project can be defined in terms of several characteristics. KyuMan, Hong, and Hyun (2009) and Tukel and Tom (1998) defined seven characteristics. The first is the size or the number of activities that are involved with a project. Second, the network structure that indicates the structuring of activities over time in a project. In general there are three types of network structures (Tukel and Rom 1998, see Figure 6). These are: a. Skewed to the left: the project starts with a limited amount of activities, these amount of activities increases when time passes; b. Centred network: the amount of activities stays relatively stable during the project; c. Skewed to the right: the project starts with a high amount of activities, and throughout the project the amount of activities decline.

![Network structures](image)

**Figure 6: Network structures (Tukel and Rom, 1998)**

The third characteristic is the organizational structure which refers to the relationship between the project organization and the company organization. Again, three types of organizational structures can be identified: a. The pure project organization which defines a clear separation of the project from the firm itself; b. The functional organizational form; the project is part of a specific division of the firm; c. The organizational structure, which represents a full project form. The project is an overarching aspect for the activities of all the divisions of the company. The project life span is the fourth characteristic which refers to the time needed to complete the project. The value of a project represents the contractual amount of money related to a project; the fifth characteristic. The sixth characteristic is the density of a project i.e. the number of immediate predecessors that are involved. Predecessors relate to the number of activities that need to be finalized before new activities can start. Resources available for a project: 1) renewable resource: labor hours, and 2) non renewable resource:
the project budget. The seventh and final characteristic is the measurement of performance. This can be measured based on four aspects: time, cost, quality, and client satisfaction. The success or failure of a project can be measured based on these four characteristics. These four characteristics indicate that not only the quality is a main aspect of performance.

Total Quality Management (i.e. TQM) is a principle that aims to improve the quality of an organization's services and goods (Forker, Mendez, and Hershauer, 1997). The key aspects of the principle are: taking customers desires into account, strong leadership style in communicating quality's strategic importance, the collection of quality data (e.g. defects, error rates) together with actions to prevent quality defects, continuous improvement of quality performance, and the employee participation in activities that improve the quality (Forker et al. 1997). The theoretical link between competitive advantage and performance indicates that TQM can be used to improve the competitive advantage of an organization (Reed, Lemak, and Mero, 2000). However, the literature additionally addresses that the effect of TQM on business performance is not clear (Sousa and Voss, 2002). This leads to believe that the TQM principle on its own is not sufficient in improving business performance. That is why research on the effect of IM on a PBO is needed to study what IM can mean for a PBO in terms of project performances.

Decentralized project teams are the norm in PBO’s, which implies that a high degree of differentiation exists between different parts of the organization, together with separate project activities (Bresnen, Goussevskaia, and Swan, 2004; Dubois and Gadde, 2002). Functional areas cooperate when having a specific goal. Within the teams a project manager often has a high status as they have direct control over personnel, business functions, and other resources (Hobday, 2000). The project team members manage and support the needs of the project manager and the project itself (Hobday, 2000). Members of project teams typically have different functional backgrounds (Bresnen et al. 2004).

A PBO responds flexible to changing needs of the client and can deal with emerging properties in production (Hobday, 2000). The ability to integrate a variety of types of knowledge and skills, supports the ability to cope with uncertainties, and project risks is an additional advantage of a PBO (Hobday, 2000).

The challenges of PBO’s faces lie in achieving economies of scale, facilitating organization-wide development, perform routine tasks, coordinating cross-project resources, and promoting organization-wide learning (Hobday, 2000). Projects are not part of an established, routine activity (Bresnen et al. 2004). The customized
and temporary nature of each project makes it difficult for a PBO to learn and build up knowledge capabilities from one project to another (Boh, 2006). Moreover, a PBO can interfere with corporate strategies and business coordination: strategies that are developed to stimulate organizational learning and technical leadership (Hobday, 2000).

An important factor in achieving general business goals is project tracking and guidance at the corporate level of a PBO (Hobday, 2000). Due to the idiosyncratic nature of every project, knowledge sharing and collaboration within the firm is crucial (Bresnen, et al. 2004). The occasions in which a PBO can successfully share cross functional knowledge is when experiences and ideas in one project can frequently solve problems of other projects (Davies and Brady, 2000). However, to date scholars and practitioners have not found a general solution for dealing with the drawbacks associated with PBO's.

2.3. Interdepartmental integration

Interdepartmental integration is required for effective intra-company relationships (Stank, Keller, and Daugherty, 2001), and can be described as undertaken initiatives and activities between departments (Kahn, 2001). It is accompanied with a high degree of collaborative behaviors, shared values, and mutual goals. Interdepartmental integration allows the capabilities of a company to come together (Kahn, 2001; Kahn and Mentzer 1996). The products will be technically more feasible, and be effectively delivered by the company with a high degree of interdepartmental integration (Urban and Hauser, 1993).

The two main concepts of interdepartmental integration are interdepartmental communication and collaboration (Kahn, 2001). Interdepartmental communication and collaboration aim to stimulate the integration and combination of knowledge, one of the challenges of a PBO. First, communication refers to telephone calls, and verbal information exchanges (Kahn, 2001).

Communication functions as glue that holds together the information distribution between departments, and functions as a crucial part in being able to continuously manage the relationships between departments (Mohr, Fisher, and Nevin, 1996). According to Barrat (2004) communication is perceived to be important for fostering information sharing and creating a shared understanding, and that it helps creating an environment in which innovative thinking is encouraged and supported. Communication within interdepartmental integration enables the structure of departments to interrelate and to reduce misconceptions and misunderstandings (Stank et al. 2001). Formal, structured communication processes are used to promote interdepartmental integration and
enhance the performance (Ellinger, Keller and Ellinger, 2000). The amount of collaboration is of importance; too much may have the consequence of declining performance by having personnel attend too many meetings and experience an information overload (Kahn and Mentzer, 1998).

Pinto and Pinto (1990) reviewed the literature on communication, and illustrated three types: 1) Internal versus external communication; communication within the project team or department, or between a project team or department and other departments/teams or external parties. 2) Formal versus informal communication; formal communication relates to a prescribed type of communication, while informal communication is on an ad hoc basis. Informal communication is mainly oral communication which occurs over the phone or unplanned discussions. 3) Written versus oral communication.

The second concept of interdepartmental integration is collaboration. Collaboration exists of teamwork, collective goals, shared rewards, common vision, common understanding, and shared resources (Kahn, 2001). Interdepartmental collaboration increases the knowledge of the internal processes (Barrat, 2004). Schrage (1990), Holland et al. (2000), and Ellinger (2000) defined collaboration as being a volitional, mutual shared-, and affective process in which two or more departments need to work together, achieve collective goals, have a common vision, share resources, are willing to work together, have the ability to build meaningful relationships, have informal activities, and have a mutual understanding in which communications plays a critical role. Collaborative actions are vital for the creation of capabilities and/or performance outcomes of a firm, and it represents how well departments can work together when this is required (Min, Roath, Daugherty, Genchev, Chen, Arndt, and Richey, 2005; Ellinger, 2000). The motivation to stimulate collaboration within a firm is to share risks and rewards (Min et al. 2005).

The degree to which interdepartmental integration is present within a PBO, determines the successfullness of a project (i.e. time, cost, quality, client satisfaction). The degree of integration together with collaborative behavior, a shared value, and a mutual goal within a project will enhance the project performance. The IM approach enables the development of internal relationships and networks. By enabling these relationships and networks, the approach is able to realize interdepartmental integration.
2.4. Internal Marketing

The IM approach operates as a holistic management process that is aimed to integrate several functions of an organization (George, 1990). Scholars have given different applications of the IM approach:

1. Vary and Lewis (1999): IM is a structured approach for strategy implementation, increasing internal service productivity, diffusing innovation to recruiting and retaining service-minded staff, and for creating a service culture.

2. Ballantyne (2003): IM can be defined as a development strategy for relationships. This development of relationships has the purpose of knowledge renewal.

3. Conduit and Mavondo (2011): IM is the application of human resource management, techniques, marketing, allied theories, manage, co-opt, and mobilizing employees of all levels in an organization. This for continuous improvement in the serving of customers and each other. IM has an effective respond to employees when it is aligned with the mission and goals of an organization.

However, a univocal definition of IM has not yet been given by existing literature. Overall, IM refers to an approach that stimulates the development of networks of internal relationships (e.g. relationships between employees, teams, or departments within a firm) (Ballantyne, Martin, and Payne, 1995), and knowledge renewal and therefore can be seen as a new source of competitive advantage (Ballantyne, 2003). Networks of internal relationships are the building blocks of the IM philosophy (Ballantyne et al. 1995). Due to the creation of networks of internal relationships, the information flow can be improved in cross-functional ways (Ballantyne, 2003). Cross-functional efforts refer to information sharing and interdependency between multiple organizational units (e.g. between divisions or branches) (Song, Montoya-Weiss, and Schmidt, 1997). The IM approach was initially applied in the service marketing setting. An important issue here was employee motivation and satisfaction (Piercy and Morgan, 1991; Rafiq and Ahmed, 2001). Research showed that IM reduces departmental isolation, inter-functional friction, resistance to change, and that it motivates employees in such a way that the quality of service for the end-customer increases (Rafiq and Ahmed, 1993).

IM focuses on external- as well internal customers (Conduit and Mavondo, 2011). This means that any employee, department or unit that is served by another unit within the same organization, can be seen as an internal customer (Rafiq and Ahmed, 2003). The unit or department that serves the specific department, can thus be seen as the internal supplier. Demands of internal customers are satisfied, such that it always aligns with the overall
objectives of the organization (Rafiq, and Ahmed). By assuming that every internal customer is the supplier of someone else, awareness is created of how work that someone delivers contributes to the value chain which ultimately serves the external customer (Ballantyne, 2000).

There are several researchers that reviewed the literature of IM (i.e. Ballantyne 2003; Rafiq and Ahmed 2000; Lings and Brooks 1998; Ahmed, Rafiq, and Saad 2003; and Foreman and Money 1995). Summarizing these studies, the IM approach indicates that several main factors need to be present for a complete implementation of the approach: 1) senior management support, 2) employee satisfaction, 3) customer orientation, 4) awareness, and 5) a learning orientation. Each of these factors will briefly be explained.

**Senior management support.** It is the duty of managers (e.g. CEO's, project managers, division managers, plant managers, and product managers) to encourage employees with senior management support (Davis, 2001). Organizational leaders function as role models and must demonstrate their dedication to internal- and external customers (Conduit and Mavondo, 2001). This commitment must be reflected on everyday actions; by involving employees in the planning, paying attention to employees, and being responsive when suggestions are made by employees (Conduit and Mavondo, 2001). Senior management support is needed in terms of IM as it is their duty to encourage employees of different departments to cooperatively work together (Davis, 2001). Part of this encouragement is dealing with cross-functional conflicts and encouraging other departmental managers to develop joint solutions to shared problems (Davis 2001; Varey and Lewis 1999). Dealing with conflicts and developing joint solutions creates alignment between the company's internal capabilities and the external objectives (Gournaris, 2006).

**Employee satisfaction.** Research shows that the IM approach reduces departmental isolation, inter-functional friction, and resistance to change by motivating and satisfying employees (Piercy and Morgan, 1991; Rafiq and Ahmed, 2001). It thus plays an important role in IM. Employee satisfaction is defined as the level of satisfaction participants have with their jobs and organization (Derwel and Weber, 1979). Motivation and satisfaction are related; when an employee is not satisfied with their job and related characteristics, the motivation and willingness to adapt to the IM approach will lack (Derwel and Weber, 1979; Kalleberg, 1977). In terms of motivation, it is known that some individuals respond more positively than others to complex, enriched jobs (Hackman and Oldman, 1976). Another factor that influences the satisfaction of an employee are work values. Work value relates to the amount of attachment one has for the perceived job characteristics (Kalleberg, 1977). The factors that intrinsically influence employee satisfaction (i.e. motivators) are recognition, achievement,
responsibility, advancement, and personal growth in competence (Pierry and Morgan 1991; Derwel and Weber, 1979). They are believed to motivate employees to superior effort and performance (Hackman and Oldham, 1976). Dewar and Rebel (1979) state that employee satisfaction increases if the working conditions are designed to fit the expectations and needs of the employee, and that low satisfaction can have the consequence of absenteeism (Dewar and Rebel, 1979).

**Customer orientation.** The core of customer orientation is based on all the potential customers of a firm: internal- as well as external customers (Adu and Singh, 1998; Brady and Cronin, 2001; Conduit and Mavondo, 2011), which makes it important for the IM approach. Any employee, department or unit that is served by another unit within the same organization, can be seen as an internal customer (Rafiq and Ahmed, 2003). The unit or department that serves the specific department can thus be seen as the internal supplier.

The focus on the external customers describes the organization-wide emphasis on evaluating and addressing external customer needs (Adu and Singh, 1998). It is part of an organizational culture, and the information about customers’ needs should be taken into account parallel to the set of values and beliefs to strengthen the customer focus (Adu and Singh, 1998). It allow firms to assimilate and acquire the needed information to execute and design strategies that result in beneficial customer outcomes (Brady and Cronin, 2001). The higher the level of external customer orientation is, the higher the identification of strategies that lead to a higher perception of the quality of an organization's product, environment, and service (Brady and Cronin, 2001). Customer value helps positioning the firm and anticipating on the needs of customers, which results in delivering products that satisfy these determined needs (Brady and Cronin, 2001).

Overall, an internal- and external customer orientation is a critical part of organizational learning. Organizational learning has proven its superior value in a higher customer satisfaction (Brady and Cronin, 2001). It therefore plays a crucial role in the economic success of companies (Thurau, 2014).

**Awareness.** The creation of awareness can be seen as the understanding of the activities of others, which provides input for one's own activity (Sarma, Noroozi, and van der Hoek, 2003). Awareness needs to be created to value the work that individuals deliver to a chain which ultimately serves the external customer (Ballantyne, 2000). When it relates to collaboration between employees of different departments, it usually includes information such as who is part of the collaboration, what tasks are performed by the other party, the current activities, and the objectives and goals of the other party (Sarma et al. 2003; Wei and Wang 2009). Sharing
metrics of departments and increase in awareness assists management with the optimization, synchronization, and integration of the inter-enterprise processes (Lambert and Pohlen, 2001). Tactical and strategic information are essential for collaborating departments to improve coordination, diminish uncertainty, and enhance customer satisfaction (Lambert and Pohlen, 2001).

**Learning orientation.** An employee- and organization wide learning orientation is essential to make IM successful (Ballantyne, 2003). A learning orientation enables the willingness to learn within an organization (Ballantyne, 2003). An organization wide learning orientation enhances competitive advantage by the usage and creation of knowledge. The orientation is composed out of four factors: commitment to learn, shared vision, open-mindedness, and intra-organizational knowledge sharing (Calantone, Cavusgil, and Zhao, 2002). The organization must commit to learning by promoting and valuing it. The shared vision refers to an organization wide focus on learning with clear directions for development. Open mindedness reflects on the ability to evaluate on the operational routine, and the ability to accept new ideas. The content of the intra-organizational knowledge relates to new technologies, market changes, competitor actions, and customer needs (Calantone et al. 2002).

Employees with a learning orientation are willing to seek challenges that will provide them with learning opportunities (Gong et al. 2009). A personal learning orientation is a mind-set that motivates and challenges an individual to develop one’s competencies (Gong, Huan, Farh, 2009). An employee must proactively question whether the existing beliefs and actions actually benefit the organizational performance (Baker and Sinkula, 2002).

An important tool managers use to ensure learning across and within an organization are review groups. Review groups provide employees and the organization with learning opportunities. These groups encourage professional autonomy, support critical insights, and appraisal of quality (Beyer, Gerlauch, Flies, and Grola, 2002). Information exchange related to feedback, expectations, knowledge and experiences are key (Beyer et al. 2002).

### 2.5. Conclusion

This study proposes that the IM approach, which enables interdepartmental integration, can overcome the main difficulties in organization-wide development, gaining knowledge and learning on a routine basis of projects of a
PBO. The conceptual framework, presented in Figure 7, suggests that a number of managerially controllable actions and policies are needed to enable the IM approach within an organization.

Interdepartmental integration is required for effective intra-company relationships (Stank, Keller, and Daugherty 2011), an aspect that IM stimulates (Ballantyne, Martin, and Payne, 1995). By enabling interdepartmental integration, the IM aspects (e.g. management support, employee satisfaction, customer orientation, awareness, learning orientation) could have a positive effect on the performance of a project as it counterbalances the stated difficulties of a PBO. The contingent factors are the project characteristics. The conceptual model contributes to the reviewed research gap as it enables and combines the concepts of IM interdepartmental integration, and their effect on project performance.
Figure 7: Conceptual research model

INTERNAL MARKETING
- Management support
- Employee satisfaction
- Customer orientation
- Awareness
- Learning orientation

INTERDEPARTMENTAL INTEGRATION
- Interdepartmental collaboration
- Interdepartmental communication
- Collaborative behavior
- Shared value
- Mutual goal

PROJECT PERFORMANCE
- Time
- Cost
- Quality
- Client satisfaction

PROJECT CHARACTERISTICS
- Size
- Network structure
- Organizational structure
- Life span
- Value
- Density
Methodology

The approach of the study is based on cycles: an empirical- and regulative cycle (van Aken, Berends, and van der Bij, 2007), as indicated in paragraph 3.1. The empirical cycle (i.e. observation, develop theory, deduct hypothesis, test hypothesis, and evaluation) will be the first cycle that will be completed, the outcome of the evaluation constitutes as input for the regulative cycle (i.e. problem definition, analysis and diagnoses, and redesign). The study is based on two cycles due to the empirical- and normative nature.

3.1. Research context

The organization for the research context is Vanderlande; a production company that designs and installs warehouse automation-, parcel and postal-, and baggage handling systems. Vanderlande has 20 establishments all over the world. This research setting is focused on the establishment in the Netherlands; Veghel. Vanderlande complies with the characteristics of a PBO; projects form their central driving force. Several departments cooperate in order to successfully complete a project. These departments work together in a greater or lesser extent to successfully complete required facets as input during a project. The departments part of the scope are: sales, purchasing, project manager, service, R&D, and quality. The projects all go through three phases: sales, operations, and service. To represent the involvement of the departments during these phases, a timeline from t0 to t1 together with the involved departments is displayed in Figure 8. t0 being the start of a project, and t1 being the end of a project.

<table>
<thead>
<tr>
<th>t0</th>
<th>X1</th>
<th>X2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Operations</td>
<td>Service</td>
</tr>
<tr>
<td>Sales</td>
<td>Open up and kick off project</td>
<td>Close down project</td>
</tr>
<tr>
<td>Purchasing</td>
<td>Sales</td>
<td>Assignment</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Purchasing</td>
<td>Service</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Project Manager</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8: Project process with involved departments
3.2. **Data collection**

*Semi-structured interviews.* The interviews will provide the data for the analysis and eventually help to reflect on the current situation. Projects form the primary unit for competition, organization, and innovation, and thus form the unit of analysis. Together with three project managers, projects were selected. These project managers were responsible for the parcel- and postal-, and baggage handling systems. Together with the project managers, relevant projects were selected based on the amount of successes, amount of failures or newness-to-the-firm (i.e. criteria with which the projects of Vanderlande could be differentiated best). These criteria were used to ensure the diversity in projects, and the completeness in terms of the comparison between sufficient- and insufficient situations during projects. Additionally, the department’s part of the scope needed to be involved.

Five projects were selected (i.e. Pulkovo, Deutsche Post, Prestina, 6Railways, and Izmir Domestic), and 6 members per project were interviewed (i.e. one employee of every department part of the scope, see Table 2). On average the interviews lasted 60 minutes. The interviews were audiotaped and transcribed, and all the interviewees gave permission for recording. The questionnaire is based on the facets part of the conceptual research model, see Figure 1 and 7. Questions are overall based on the degree of presence of IM and interdepartmental integration, together with their specific facets. Additionally, project specific questions are based on project performance, and characteristics. Side issues related to the interviews including the questionnaire are covered in the interview guide, see Appendix A.

<table>
<thead>
<tr>
<th>Projects</th>
<th>Respondents (one person per department)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulkovo</td>
<td>Sales</td>
</tr>
<tr>
<td>Deutsche Post</td>
<td>Purchasing</td>
</tr>
<tr>
<td>Prestina</td>
<td>R&amp;D</td>
</tr>
<tr>
<td>6Railways</td>
<td>Project</td>
</tr>
<tr>
<td>Izmir Domestic</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
</tr>
</tbody>
</table>

Table 2: Respondents for the study
3.3. **Data analysis and interpretation**

The processing of the interviews is based on the guidelines of Boeije (2005), Nag, Corley, and Gioia (2007), and vd Borgh, Cloodt, and Romme (2012). Transcribed interviews form the basis of the analysis. Open encoding will be applied to analyze the gathered data. This is done by analyzing the transcript, and determining the beginning and end of a fragment. This fragment will be rated on the meaningfulness and the relevance for the research. When a fragment is relevant, this fragment can be given a name (i.e. a code). The fragments that cover the same aspect will receive the same codes.

Additionally to open coding, axial coding is applied. The determined codes based on open coding are reviewed to check whether they sufficiently cover the data, or whether new codes should be added. Codes can be separated or merged for a better cover of the data. Axial coding mainly refers to focusing on a specific category to group the relevant research material surrounding it. Subsequently, an exploration of which elements are part of the category and in how they are related to each other can be executed. Based on the fragments that are related to a code, a category can be described. The codes are based on the literature study, more specifically, the aspects related to the conceptual research model (see Figure 1, and 7).

A second rater is used to validate the coded data. This second rater is a fellow master student who executed a similar qualitative research which involved encoding. The second rater validated the coding process by taking the similar coding steps according to the guidelines of Boeije (2005), Nag et al. (2007), and vd Borgh et al. (2012). At first, some differences were detected in the coding of the second rater. After discussing the differences, and reassessing specific codes, a validated codebook was created that represents the content of the data including the description of each code (see Appendix B).
Data analysis and results

The codebook of the transcriptions based on the literature review is presented in Appendix B. The codes are based on Internal Marketing (i.e. IM)- and interdepartmental integration related concepts. A clear distinction has been made between codes that link to project specific details, and codes that provide general perception about work conditions (i.e. interdepartmental collaboration, communication, interaction, integration, management support, willingness to learn). Respondents answered most questions (found during coding) based on other experiences (in general encountered, or in other projects). Apart from project specific information, general information was provided. Therefore, two types of analysis were executed. First, a within- and between project analysis, and second a general analysis. The within project analysis compares the indicated degree of failures and successes of the departments per project. The between project analysis compares the indicated failures and successes of all projects per department. The goal of the within- and between analysis is to indicate the occurred failures during the projects, and determine the contextual causes (for instance: project characteristics). The general analysis is based on the general data collected from the interviews. The goal of the second analysis is to function as a hold out sample against with which the conclusion(s) of the within- and between analysis are validated. Additionally, it helps understanding the underlying mechanisms for the indicated failures and successes, by indicating motives and causes.

The degree of success or failures is indicated with stars ranging from ‘*’ to ‘***’. A lack of involvement is indicated with a ‘0’. Table 3 clarifies the meaning of the rating.

<table>
<thead>
<tr>
<th>Perceived degree</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>***</td>
</tr>
<tr>
<td>Medium</td>
<td>**</td>
</tr>
<tr>
<td>Low</td>
<td>*</td>
</tr>
<tr>
<td>Not involved</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 3: Rating score within- and between project analysis

4.1. Projects research setting

Table 4 represents the characteristics per project based on the literature review of KyuMan, Hong, and Hyun (2009), and Tukel and Rom (1998). In addition, in the next section a short description per examined project is provided.
<table>
<thead>
<tr>
<th></th>
<th>6Railways</th>
<th>Deutsche Post</th>
<th>Prestina</th>
<th>Pulkovo</th>
<th>Izmir Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Baggage sorter</td>
<td>Partial-Postal</td>
<td>Baggage sorter</td>
<td>Baggage sorter</td>
<td>Baggage sorter</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>Small (40 activities)</td>
<td>Medium (100 activities)</td>
<td>Small (25 activities)</td>
<td>Large (200 activities)</td>
<td>Large (180 activities)</td>
</tr>
<tr>
<td><strong>Newness to the firm</strong></td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Newness to the customer</strong></td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Network structure</strong></td>
<td>Skewed to the right.</td>
<td>Skewed to the right.</td>
<td>Skewed to the right.</td>
<td>Combination of skewed to the left- and right.</td>
<td>Combination of skewed to the left- and right.</td>
</tr>
<tr>
<td><strong>Organizational structure</strong></td>
<td>Organizational structure; project forms the centre of the organization.</td>
<td>Organizational structure; a matrix organization.</td>
<td>Organizational structure; project forms the centre of the organization.</td>
<td>Organizational structure; project forms the centre of the organization.</td>
<td>Organizational structure; project forms the centre of the organization.</td>
</tr>
<tr>
<td><strong>Life span</strong></td>
<td>4 years</td>
<td>40 weeks</td>
<td>2 years</td>
<td>2 years</td>
<td>1.5 years</td>
</tr>
<tr>
<td><strong>Value</strong></td>
<td>€2.6 million</td>
<td>€2.4 - €5 million</td>
<td>€1.6 million</td>
<td>€20 million</td>
<td>€9.8 million</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>Overall 1 to 1</td>
<td>1 to 1</td>
<td>Overall 1 to 1</td>
<td>1 to 1</td>
<td>Overall 1 to 1</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td>€1.9 million</td>
<td>€1.9 million - €4.5 million</td>
<td>€1 million</td>
<td>€11 million</td>
<td>€7.3 million</td>
</tr>
<tr>
<td></td>
<td>10,000 man hours</td>
<td>7.014 man hours</td>
<td>7.623 man hours</td>
<td>41,500 man hours</td>
<td>26,000 man hours</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>Time: delay of 2 years</td>
<td>Time: no overrun</td>
<td>Time: no overrun</td>
<td>Time: delay of 1 year</td>
<td>Time: delayed</td>
</tr>
<tr>
<td></td>
<td>Cost: no overrun</td>
<td>Cost: within budget</td>
<td>Cost: eventually no overrun</td>
<td>Cost: within budget</td>
<td>Cost: no overrun</td>
</tr>
</tbody>
</table>

Table 4: Project characteristics
4.2. **Within project analysis**

Table 5 represents the rating table in terms of perceived degree of failures and successes per project. The table will be discussed per project together with reasoning.

<table>
<thead>
<tr>
<th>Departments Codes</th>
<th>Sales</th>
<th>R&amp;D</th>
<th>Purchasing</th>
<th>Project manager</th>
<th>Service</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failures 6Railways</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>**</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Successes 6Railways</td>
<td>**</td>
<td>**</td>
<td>0</td>
<td>**</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Failures Deutsche Post</td>
<td>*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Successes Deutsche Post</td>
<td>***</td>
<td>0</td>
<td>***</td>
<td>***</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Failures Prestina</td>
<td>***</td>
<td>0</td>
<td>*</td>
<td>**</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Successes Prestina</td>
<td>0</td>
<td>0</td>
<td>*</td>
<td>***</td>
<td>**</td>
<td>0</td>
</tr>
<tr>
<td>Failures Pulkovo</td>
<td>***</td>
<td>0</td>
<td>**</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Successes Pulkovo</td>
<td>***</td>
<td>0</td>
<td>*</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Failures Izmir Domestic</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>*</td>
<td>**</td>
<td>0</td>
</tr>
<tr>
<td>Successes Izmir Domestic</td>
<td>0</td>
<td>0</td>
<td>**</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 5: Perceived degree of failures and success projects

*Project 6Railways.* 6Railways was a new-to-the-firm, as well as a new-to-the-customer project. It was a baggage handling project installed in six buildings being part of a railway network in Saudi Arabia. The final customer is the Saudi Arabic equivalent of the ‘NS’, named SAR. There are few railways in Saudi Arabia; the SAR had difficulty in stating their specifications for the product. Vanderlande communicated with the main contractor, who communicated with the SAR. This indirect communication caused issues in terms of differences of interests. Next to the indirect communication issues, the cultural differences influenced and hampered the communication and collaboration. For instance, lack of experience of both parties and difficulties in communication caused the perceived customer satisfaction as low. Due to uncertainties, the installation was delayed for two years, which eventually influenced the customer satisfaction. Additionally, the quality was sufficient and there was no overrun in terms of budget.
Failures 6Railways. Sales rated the failure of internal communication as high. Due to the newness of the project, the project-support was not present when needed, which caused involved departments to delay in decision making. Especially for the sales phase of the project, quick response with accurate information was needed to avoid competition. R&D complied with the rating of sales; they need accurate information to design the needed products. According to purchasing, the screening machines were delayed. Together with difficulties of the screening machines, the third party hired to execute the installation on-site (i.e. at the customer) was not thoroughly screened, and proved to be inexperienced. This inexperience caused delay. Due to the difficulties with the screening machines and the installation party, purchasing perceived the degree of failure as high. The project manager perceived the communication with the customer as a medium failure. Difficulties were mainly due to the differences in interest, and cultural differences. Service and quality were not involved, and thus had no remarks.

Successes 6Railways. The sales-, R&D department and project manager perceived the negotiations with the customer as a medium success. The departments managed to overcome the cultural differences, and difficulties in communication, and presented a suitable solution. Service and quality were not involved, and thus had no remarks for the perceived successes. Purchasing was, but had no remarks for the perceived successes.

Project Deutsche Post. Deutsche Post is a parcel- and postal project in Germany. This project has a value of €50 - €70 million per year on a continuous basis. Deutsche Post represents the first project Vanderlande executes on a continuous basis based on “serial production”. Due to its repetitive nature, all the involved facets were optimized during execution time. The project is one of the most successful projects that Vanderlande currently runs in terms of time, cost, quality, and client satisfaction.

Failures Deutsche Post. Sales perceived the provision of information for customer as a failure of the project. During the installation, the project manager discovered a defect which would cause delay. Although the delay was detected on time, it was not directly communicated with the customer. After several months, the project manager communicated the delay, what slightly damaged the relation with the customer due to a lack of transparency in communication from the side of Vanderlande. The sales department indicated that a single point of contact for the sales department would have been beneficial. Different sales persons were involved which caused uncertainties in information towards the customer. Additionally, purchasing addressed the lack of expertise of Vanderlande as failure. The degree of expertise was overrated, and a tight
schedule with little slack together with the introduction of new products caused delays. R&D, service, and quality were not directly involved, and thus had no remarks related to perceived failures. Purchasing and the project manager had no remarks in terms of failures of the project.

**Successes Deutsche Post.** The stable composition of the project team was a success according to sales. Due to the stability, progression was made in a relatively short period of time. Furthermore, the execution process was optimized. Purchasing agreed with sales, and indicated that due to the stability of the team, the ability to learn was high. High motivation together with a willingness to invest effort is considered as one of the drivers of the successes of the Deutsche Post project, according to the project manager. Risks were eliminated by extensively testing the product upfront the installation. The R&D-, service-, and the quality department were not involved, and thus made no remarks related to the perceived successes.

**Project Prestina.** Prestina was in theory perceived as a relatively simple project in Kosovo. The project was sold as a check in triplaner (baggage-handling project), which are considered to be easy-to-execute projects. Contrary to the initial expectations, the project faced several difficulties during execution (e.g. miscalculated budget, communication with suppliers). The necessity for collaboration of departments was significantly higher than with a mainstream check in triplaner project. Overall, the project was rated successful in terms of time, cost, quality, and client satisfaction.

**Failures Prestina.** The miscalculated project budget is perceived as the failure with the highest perceived degree. Sales indicated that they determined an unrealistic budget for which it was not possible to execute the project sufficiently. Purchasing addressed that the communication with the supplier of the screening machines was insufficient, which caused delay. Different employees of the purchasing department contacted the specific company what caused uncertainties in the provision of information internally. The consequence was that the negotiating position of the supplier became strong, and simultaneously the position of Vanderlande became weak in receiving compensation for the delay. A single point of contact lacked. The project manager addressed that the project was underestimated in terms of obstacles and difficulties (e.g. contracts and certification). This led to unexpected problems that required ad hoc actions. The R&D-, service-, and the quality department were not involved, and thus made no remarks related to the perceived failures.
**Successes Prestina.** Purchasing perceived Prestina to be an easy to purchase project apart from the screening machines. By benchmarking needed products, a saving could be realized. Due to weekly meetings with the project manager, the information provision was accurate and difficulties were timely forseen. The project manager was content with the way unforseen difficulties were solved. In dispite of needed ad hoc actions, the project did not experience negative consequences. Service indicated that the transfer from the project manager to service was succesfull; no remaining tasks were handed over to service. The quality department made no remarks in terms of successes due to uninvolvement. Sales and service indicated no successes for the Prestina project.

*Project Pulkovo.* Pulkovo was a baggage handling project for the airport in Sint-Petersburg, Russia. Overall the project was very succesfull in terms of costs and quality. However, the customer satisfaction was low due to expectations of the customer and deliverables of Vanderlande. The customer was unaware of the responsibilities in maintaining the system. Managing these expectations was difficult due to the fact that the final customer (i.e. user) was not the customer of Vanderlande, but a maincontractor was.

**Failures Pulkovo.** The failure with the highest degree is the miscalculated budget according to sales. The calculated budget was too low, which hampered the sufficient execution of the project. The installation party purchasing appointed was not thoroughly screened, and proved to be inexperienced. The supervisor of the specific party was not monitoring and controlling the installation, what caused delay and an overrun of the budget. Likewise, the purchasing department did not monitor the party to timely take the needed measures. The project manager did not sufficiently inform the customer in terms of responsibilities of Vanderlande and of the customer (e.g. maintenance and warranties), which caused uncertainties. R&D, service and quality were not involved, and thus had no remarks.

**Successes Pulkovo.** Sales stated that the project budget was miscalculated. Due to a created sense of urgency and collaborative behavior of the managers involved, the budget problem could be solved. The success purchasing indicated was the adaptibility to the culture of the customer. Cultural differences were taken into account, which led to a high customer satisfaction. The project manager indicated that the export process was a success. Exporting products to Russia caused difficulties and delays in the past. R&D, service and quality were not involved, and thus had no remarks.
Project Izmir Domestic. Izmir Domestic is a baggage sorter project. The customer was familiar with the products of Vanderlande, due to earlier projects. Changes in the execution process of projects were introduced. The customer was not informed about these changes, and assumed defaults in the execution process and in quality which influenced the customer satisfaction. Eventually, the customer was satisfied due to the sufficient product quality. Furthermore, the project was delayed, and the budget was not exceeded.

Failures Izmir Domestic. Cultural differences hampered the communication between the project manager and the customer. Furthermore, service indicated that the inexperienced installation party appointed to install the system on site (i.e. at the customer) caused a delay. They poorly executed the installation for which time was needed to repair defaults. Sales, purchasing, and the project manager could not indicate any project failures. R&D, service and quality were not involved, and thus had no remarks.

Successes Izmir Domestic. The project manager indicated that the products were tested extensively prior to installation. In despite of the inexperienced installation party, a reduction (i.e. halving) of installation time was realized. In addition, service indicated that the transfer from operational to service phase was sufficient: no outstanding tasks were transferred. Again, sales, purchasing, and the project manager could not indicate any project successes. R&D, service and quality were not involved, and thus had no remarks.

4.3. Between project analysis

The between project analysis describes the differences and similarities between the five projects (i.e. 6Railways, Deutsche Post, Prestina Pulkovo, Izmir Domestic) per department based on the rating of Table 5.

Sales. The sales department overall perceived a high degree of failures and successes within the projects. This seems to indicate that the perceived degree of failures is high, while being counterbalanced with a high perceived degree of successes, due to an overall successful rating of projects. The department perceived failures in communication (i.e. internally, with customer), and in miscalculated budgets. The failures in communication were related new-to-the-firm projects (i.e. 6Railways, Deutsche Post), what explains these difficulties due to the inability to make use of the expertise of Vanderlande. The failures in miscalculated budgets are related to projects with a low degree of newness to the firm (i.e. Pulkovo, Prestina).
R&D. The involvement of the R&D department is low. The department only indicated successes and failures for the 6Railways project, due to the new application of existing products of Vanderlande.

Purchasing. Purchasing is highly involved during the project process, and thus could indicate both failures as successes. The only exception was Izmir Domestic. The indicated successes or failures are mainly rated with a low perceived degree. The indicated lack of expertise for the Deutsche Post project is due to the degree of newness to the firm. The failures related to the supply of screening machines (e.i. Prestina, Pulkovo) are recognized as a general problem.

The project manager. The involvement of the project manager is high. The operational phase of the project (see Figure 8, X1 to X2) constitutes the core, and thereby longest phase of the project process. The main addressed difficulty is the communication with the customer (i.e. 6Railways, Deutsche Post, Pulkovo, Izmir Domestic). The cause for the difficulties in communication were mainly the cultural differences, and lack of knowledge of the customer. Overall the project managers were able to cope with these difficulties. Furthermore, the project manager of the Prestina project indicated that the project was easy, while difficulties and obstacles did occurred. These difficulties were managed by ad hoc actions (i.e. one-off, for specific cases).

Service. The overall involvement of service is low. The service phase (see Figure 8, X2 to t2) is the last phase the project process passes. The department is mainly informed about failures or successes of the project when the project is transferred from the operational phase to the service phase (i.e. X2). The department only indicated a perceived degree of failure for the Izmir Domestic project. Due to the poor executed installation by the inexperienced installation party, the service department was responsible for recovering indicated flaws.

Quality. The quality department lacks involvement in any of the phases during the project process of the researched projects. The current positioning and moreover role related to the project process of the quality department is unclear.
**Conclusion**

Table 6 provides an overview of the failures per project, and the departments that indicated the failures. Quotes per departments are presented to underpin and explain the indicated failures or successes.

<table>
<thead>
<tr>
<th>Project</th>
<th>Failures</th>
<th>Involved departments</th>
<th>Project phase in which failures were addressed</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6Railways</td>
<td>Internal communication</td>
<td>Sales, R&amp;D, Purchasing</td>
<td>Operations</td>
<td>Purchasing: “The screening machines are time-technically difficult to purchase. We encounter this difficulty more often. The supplier asked for a full payment without a purchase contract.” Purchase: “We have the preference of giving the installation party the full responsibility. This was not possible for 6Railways, due to the incapable installation party.”</td>
</tr>
<tr>
<td></td>
<td>Screening machines</td>
<td></td>
<td></td>
<td>Sales: “The communication with the customer can be improved. There are people who see the project as a challenge and an opportunity to learn from. But there are also people who are pessimistic related to the project; this causes delays in communication with the customer.”</td>
</tr>
<tr>
<td></td>
<td>Installation party</td>
<td></td>
<td></td>
<td>R&amp;D: “We should invest more time in discussing the project internally; to make sure that the person that visits the client can be constructive and make progress”</td>
</tr>
<tr>
<td></td>
<td>Lack of knowledge customer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication with customer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deutsche</td>
<td>Communication customer</td>
<td>Sales, Project</td>
<td>Sales</td>
<td>Project manager: “We had little difficulties during the project. A tight planning, with many new products. There was little opportunity to make use of the expertise gained in the past. In the beginning, working overtime was required.” Project manager: “We achieved success. We have extensively tested the products before going live. We delivered a sufficient system. The people who were sceptical, were convinced. For the second site, the people were still a bit sceptical and reluctant, but now, we are at site 25 and everyone is super exited and no one wants to leave our project as it runs so smoothly.”</td>
</tr>
<tr>
<td>Post</td>
<td>Lack of single point of contact sales</td>
<td></td>
<td>Sales</td>
<td>Sales: “It was possible to keep working with a similar compact team. Little changes in</td>
</tr>
<tr>
<td></td>
<td>Lack of expertise Vanderlande</td>
<td></td>
<td>Operations</td>
<td></td>
</tr>
</tbody>
</table>

28
Prestina

Screening machines
Lack of single point of contact purchasing
Miscalculated budget sales

Sales
Purchasing
Project

Sales
Operations

Purchasing: “We communicated with different persons of the supplier, and they communicated with different persons of the purchasing department. We could have streamlined this better; this caused too much uncertainties”.

Service: “When the project manager transferred the project to me, there were no pending tasks left. I took over the system with little remaining tasks”.

Pulkovo

Installation party
Miscalculated budget sales
Lack of informing customer

Sales
Purchasing
Project

Sales
Operations

Purchasing: “The supervisors of the appointed installation party did not work optimally. They did not manage and control the installation, which caused delay. We hired the party to execute the project sufficiently.”

Project: “The project was delayed with one year due to a too tight planning without any slack. The client was very complex: the client was the main contractor and this contractor has the operating client. They both have different interests. The operator wants a product that works, and the main contractor is mainly focused on money.”

Sales: “We managed the pressure on the price internally. We organized a meeting with all the managers involved to discuss where there were opportunities to minimize costs.”

Izmir

Domestic

Installation party
Communication with customer

Project
Service

Operations
Service

Project: “We had a subcontracter who was inexperienced. The installation team that they put forward was unable to work with the manuals and documentation needed to install the system.”

Table 6: Concluding table within- and between project analyses
Project specific failures are related to the lack of knowledge of the customer, lack of expertise of Vanderlande, and failures of internal communication (i.e. projects 6Railways and Deutsche Post). These failures are understandable as both projects are new-to-the-firm, and thus Vanderlande cannot rely on expertise of similar products.

Not all the interviewed departments provided input for the successes or failures of the projects. The service-, quality-, and R&D department overall had little to no input. The service department is mainly involved when the project is installed, which explains the lack of involvement and thus a lack of remarks of successes and failures during the sales- and operational phase. The R&D department is not involved during the project process either, unless Vanderlande products are involved. Which explains the lack of remarks. However, the lack of involvement of the quality department is not understandable and cannot be explained. The general analysis may clarify this.

4.4. General analysis

The general analysis is based on the general data collected from the interviews. The goal of the general analysis is to function as a hold out sample against with which the conclusion(s) of the within- and between analysis are validated. Additionally, it helps understanding the underlying mechanisms for the indicated failures and successes, by motives and causes.

Departmental activities. The departmental activities describe whether the job- and task responsibilities of departments are clear for other departments part of the scope (i.e. sales, purchasing, project manager, service, R&D, quality). For the sales-, the project manager-, and the service department all other departments (i.e. purchasing, service, R&D, quality) complied with the activities and initiatives the sales- and project manager department addressed. No uncertainties in job-and task responsibilities exist. Job-and task uncertainties exist for the R&D department according to the quality department. They questioned: “whether the development of products is based on customer demand, or whether the department develops product based on their own preferences?”. For the project manager the uncertainty exists in where to report structural defaults of Vanderlande products during the installation.

The quality department indicated that it is unclear why the purchasing department selects product suppliers without notifying or involving the quality department, especially with critical product. For the
other departments (i.e. sales, project manager, service, R&D) no job- and task responsibilities existed. The quality department causes uncertainties in job- and task responsibilities for every department involved (i.e. sales, purchasing, project manager, service, R&D). Sales stated "I have no clue what the quality department does throughout the day". R&D indicated that the quality department is responsible for the quality of the processes of Vanderlande. They stated: "they monitor and control the quality processes, and are not responsible for the quality of products". The project manager perceived the quality department to be responsible for the quality of the supply chain.

Concluding, the quality department is the department for which the departments (i.e. sales, purchasing, project manager, service, R&D) addressed that job- and task responsibilities are predominantly unclear. The department seems rather isolated from the main project process. The job- and task responsibilities of the other departments (i.e. sales, purchasing, project manager, service, R&D) are not clear for the department, and vise versa.

*Interdepartmental communication and collaboration.* The project manager indicates that due to differences in interests between sales and the project manager, difficulties related to the project budget occur. Sales wants to offer a low price to avoid competition, and the project manager wants a sufficient budget for which the project can sufficiently be executed. Apart from the project manager, service experiences the disadvantages of an unrealistic budget of sales. When the budget for the project is unrealistic, the service department lacks budget to perform the required tasks sufficiently. The sales department indicates that they do not collaborate or communicate with the quality department, and that the job- and task responsibilities are unclear. Sales states: "For me there is no need to collaborate with them. They are furthermore too late involved during the project process. When they are involved, we no longer are". Generally, there is no need for the departments purchasing, the project manager, and service to collaborate with R&D. This is occasionally needed when new developed products of Vanderlande are involved. The departments addressed that the collaboration and communication with the R&D department is sufficient. The quality department collaborates with the department in terms of discussing designs of products related to supply- and quality risks. Additionally, they indicated that the collaboration and communication with the department is sufficient. The collaboration and communication with the purchasing department and the service- and project manager department is as well sufficient. Uncertainties exist between the purchasing- and quality department. The quality department mainly determines apart from the purchasing department
which products to check: there is little alignment. This lack of alignment causes uncertainties in job- and task responsibilities. The project managers and service department indicate that the collaboration and communication is sufficient. In general, there is no collaboration between the project manager- and quality department. The collaboration and communication between the quality- and the service department is generally formal through an IT system ‘omnitracker’. The service department reports quality defects via omnitracker. The quality- and sales department generally do not communicate.

*Interaction and communication.* Physical contact is an important aspect in enabling communication and collaboration within Vanderlande. It increases the amount of collaboration and communication, indicated the interviewees. Moreover, physical contact facilitates the easiness in which departments (i.e. sales, purchasing, project manager, service, quality, R&D) approach each other. Vanderlande has grown tremendously in a relatively short period of time, and is still growing. The departments noticed that a consequence of this growth is a reduction in physical meetings.

*Interdepartmental integration.* The quality- and R&D department are not involved in the any of the phases of the project (i.e. sales-, operational-, service phase). The quality department explains: “unless something goes wrong miserably, than we are involved and do matter”. The purchasing department states: “the departments that are not involved bear responsibility for the degree of involvement in phases. Taking responsibilities and ownership of issues is key”.

*Management support.* All the departments (i.e. sales, purchasing, project manager, service, R&D, quality) indicated that their management support is sufficient. The managers give the employees the needed responsibilities and support.

*Willingness to learn.* The project manager states: “reflection moments have too little benefits within Vanderlande. We all have the same excuses: we are too busy.” Another employee of sales indicated that “there are enough initiatives within Vanderlande, but without support, the initiatives bleed to death.” The project manager is responsible for the reflection meetings during the project process (i.e. operational phase). The project managers explained the lack of meetings: “it is related to the nature of a project manager: we are really eager to start a new project, instead of completing one.” A service employee added to this: “the reflection moments are dependent of the individual, when the manager perceives it to be
irrelevant, there is no evaluation”. All departments indicated the lack of evaluation moments together with a lack of willingness to learn.

4.5. Conclusion

The conclusions per concept based on the IM approach, are presented in Table 7.

<table>
<thead>
<tr>
<th>Code</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental activities</td>
<td>Job- and task responsibilities R&amp;D for quality unclear.</td>
</tr>
<tr>
<td></td>
<td>Job- and task responsibilities purchasing for quality unclear.</td>
</tr>
<tr>
<td></td>
<td>Job- and task responsibilities quality unclear for other departments (i.e. sales, purchasing, project manager, service, R&amp;D).</td>
</tr>
<tr>
<td>Interdepartmental</td>
<td>Difficulties between the project manager- and sales department in terms of budget.</td>
</tr>
<tr>
<td>communication and</td>
<td>Service experiences negative consequences when sales determines an unrealistic budget.</td>
</tr>
<tr>
<td>collaboration</td>
<td>Sales does not collaborate with quality, and job- and task responsibilities are unclear.</td>
</tr>
<tr>
<td></td>
<td>Sales, purchasing, project manager, and service generally do not collaborate with R&amp;D.</td>
</tr>
<tr>
<td></td>
<td>Unclear job- and task responsibilities between the purchasing- and quality department.</td>
</tr>
<tr>
<td>Interaction and</td>
<td>Physical contact stimulates interdepartmental collaboration and communication.</td>
</tr>
<tr>
<td>communication</td>
<td></td>
</tr>
<tr>
<td>Interdepartmental</td>
<td>The quality- and R&amp;D department are not involved in any of the phases of the project process (i.e. sales- operational- and service phase).</td>
</tr>
<tr>
<td>integration</td>
<td></td>
</tr>
<tr>
<td>Management support</td>
<td>Management support is sufficient for all the departments (i.e. sales, purchasing, project manager, service, R&amp;D, quality).</td>
</tr>
<tr>
<td>Willingness to learn</td>
<td>There is a lack of willingness to learn due to a lack of evaluation moments during the operational phase of the project process.</td>
</tr>
</tbody>
</table>

Table 7: Concluding table general analysis
The general part of the analysis addresses the uncertainties in job- and task responsibilities of, and for the quality department, which help to explain the uninvolvemment during the project process. Apart from the confirmation that the job- and task responsibilities are unclear for the departments (i.e. sales, purchasing, project manager, service, R&D), they indicated that the quality department performed important and required ad hoc actions during projects. Quotes per department (i.e. sales, purchasing, project, service, R&D) are presented to indicate the importance of the quality department (Table 8).

<table>
<thead>
<tr>
<th>Department</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>“The quality department responds on an ad hoc basis more towards the end of the project process. Not during the sales phase.”</td>
</tr>
<tr>
<td>Purchasing</td>
<td>“When product difficulties become too complex, then we approach quality. And furthermore the department is involved in escalations, on an ad hoc basis. They need to be flexible, to response quickly when needed.”</td>
</tr>
<tr>
<td>Project</td>
<td>“For Deutsche Post we have achieved a lot. We have made a plan together with the quality department which tasks they handle, and which tasks we handle. We collaborated intensively to increase the level of collaboration for Deutsche Post. I have had bi-weekly meetings with the quality department. We now have a mutual goal and vision, and the needed responsibilities are taken.”&lt;br&gt;“Overall, I do not collaborate with the department, only on an ad hoc basis when something is going wrong.”&lt;br&gt;“They helped me with needed certificates. We were optimistic in agreeing with the certificates during the sales phase, but due to the collaboration with the quality department we managed to deliver the needed certificates in despite of our lack of knowledge.”</td>
</tr>
<tr>
<td>Service</td>
<td>“We only approach the quality department, when we have a problem we cannot fix ourselves.”</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>“The quality department checks the products that we make, this is sufficient.”</td>
</tr>
</tbody>
</table>

Table 8: Quotes importance quality department

4.6. Conclusion between-, within, and general analyses

There are two main conclusions that can be drawn based on the between-, within-, and general analyses. The first conclusion is related to the indicated failures and successes per project. As displayed in Figure 8, the departments (i.e. sales, purchasing, project manager, service) have a specific moment in time (e.g. X1, X2) when they become involved in the project process. This point in time is based on the assumption that
tasks cause no difficulties. More importantly, that the agreements made by sales with the customer are executable in the time planned and for the determined budget. The failures related to the installation party for instance, could have been overcome when purchasing would have been informed earlier on in the process. Due to project planning for which delay needs to be prevented, it forces departments to take hasty decisions. More failures related to a lack of involvement, and needed ad hoc actions are: the internal communication (i.e. 6Railways), screening machines (i.e. 6Railways, Prestina), lack of expertise (i.e. Deutsche Post), miscalculated budgets (i.e. Prestina, Pulkovo), and communication with the customer. When the interdepartmental integration within a project increases, the departments know in an earlier phase what job- and task responsibilities are involved in a project. They can indicate whether there are risks involved, and thus preventive actions can be taken, or prepared.

Overall, a pattern is detected, which can be presented in terms of an emergent conceptual model, see Figure 9. Due to a low interdepartmental integration, and awareness, project failures occur. When failures are detected during the project process, a temporary sense of urgency (i.e. collaborative behavior, shared value, mutual goal) is created together with awareness, and all the involved departments ensure solving this failure by aligning the required resources (e.g. departments, resources, suppliers). Required ad hoc actions are taken to minimize the effect on the project performance. This conclusion can be described as an ad hoc (i.e. one-off, for specific cases) appliance of the IM approach. When critical situations occur, IM is applied on an ad hoc basis to enable the interdepartmental integration, and to prevent a project failure from influencing the project performance.

![Figure 9: Emergent conceptual model]

Creation of awareness
The IM approach indicates that five aspects need to be present, to enable a full implementation of the approach, and in order to stimulate interdepartmental integration. These five aspects are: management support, employee satisfaction, customer orientation, awareness, and learning orientation. Throughout the analyses (i.e. within- and between, and general analysis) it appeared that the aspects management support, employee satisfaction, and customer orientation are present. Two aspects are not continuously present: awareness and a learning orientation. Awareness is needed to create an understanding of the activities of others, which help provide input for one’s own activity (Sarma et al., 2003). It usually includes information such as who is part of the collaboration, what tasks are performed by the other party, the current activities, and the objectives and goals of the other party (Sarma et al. 2003; Wei and Wang 2009). The learning orientation is essential in making IM successful, and enables the willingness to learn within an organization (Ballantyne, 2003). An organization wide learning orientation enhances competitive advantage by the usage and creation of knowledge.

To ensure the continuous presence of awareness and learning orientation, and thus continuous presence of the IM approach, the emergent conceptual model needs monitoring and controlling. Awareness is currently created on an ad hoc basis, when a temporary urgency occurs. The absence of a learning orientation can be overcome by the control of the emergent conceptual model. When diminishing the ad hoc actions, and increasing the operational routine, the possibility to evalutate on this routine is created which enhances the learning orientation (Calantone et al. 2002). Additionally, controlling the model would be beneficial in terms of physical contact. The general analysis indicated that physical contact stimulates interdepartmental collaboration and communication within Vanderlande. When controlling the emergent conceptual model presented in Figure 9, physical contact can be controlled and planned. Contradictory to the current situation where physical contact is based on ad hoc situations.

The second conclusion relates to the quality department. The within- and between project analysis indicated that the department is unexplainable uninvolved in the project process. The general analysis explains this by indicating that the the job-and task responsibilities and thereby positioning of the quality department is unclear. Contradictory, the quotes of Table 8 indicate the importance and need of the quality department. There appears to be a need for clarity related to the quality department.
The next chapter will present a redesign which will exist of two parts: the first part in which a redesign for the control of the emergent conceptual model will be presented. The second part is a redesign for the unclarities in job- and task responsibilities and positioning of the quality department.
Redesign

As stated in chapter 1.2, two research questions are related to the research. This chapter provides answers to the second research question:

“In what way can Vanderlande benefit from the gained knowledge related to Internal Marketing, and apply this understanding within the organization?”

This section first describes a plan to monitor and control the emergent conceptual model, and second a plan to overcome the uncertainties in job- and task responsibilities of the quality department.

5.1. Plan of action emergent conceptual model

The emergent conceptual model needs to be monitored and controlled, to prevent ad hoc application of the Internal Marketing (i.e. IM) approach, and ensure a continuous IM approach. The importance of this monitoring and controlling is mainly the growth of Vanderlande in a relatively short period of time (i.e. from 2211 to 2784 employees on average in 2 years).

Figure 10: Net sales and net income of financial year 2013 (vanderlande.nl)

Figure 10 represents the net sales, and net income of the financial year 2013. The years from 2010 to 2012 will be the years of interest. In dispite of the growth in net sales from 2010 to 2011, the net income from 2010 to 2011 declined. While more projects are sold, less income was realized. This seems to indicate that
the efficiency of Vanderlande is insufficient. Two practical project examples are given that contribute to the assumption of the inefficient process of Vanderlande (i.e. unstable use of resources).

The first example relates to the project Jeddah. This was a baggage sorter project for an international airport in Saudi Arabia. To transport the baggage with the installation, ‘tubs’ are used. Tubs are plastic containers in which the baggage is transported. These tubs need specific dimensions in order to pass through the installation. Purchasing ordered 7000 tubs without a complete preparation of the functional requirements, due to a lack of coordination. The tubs were delivered, and proved to be unsuited to pass through the installation. As the supplier could not be blamed, due to the lack of specifications, Vanderlande needed to adjust the tubs by making use of the capacity of the Vanderlande production plant. The loss amounted €1.5 million.

The second example is related to the Australian Post project. This was a partial-postal project for the Australian Post in Melbourne and Sydney. The customer asked for a specific application within the installation. An application Vanderlande never used before. In spite of the lack of experience, sales agreed, and sold the project. Purchasing needed to find a suitable supplier that was able to build a machine that could perform the requested application. Due to a lack of coordination, purchasing did not benchmark possible suppliers, and chose the first supplier that seemed to be capable. Throughout the production process of the supplier, difficulties occurred. The quality department was mandated to execute a supplier audit, to check the supplier. Based on the audit, the supplier proved to be incapable in producing the requested equipment. Bottom line, due to difficulties in production, and delays, the loss for Vanderlande amounted €2 million.

These examples are no exceptional cases; more of these cases occur and indicate the inefficient process of Vanderlande. Monitoring and controlling of the emergent conceptual model is needed to prevent described situations from happening, and to increase efficiency. A shift needs to be made from reactively solving problems, to proactively anticipating on possible problems. The need for efficiency can furthermore be stressed by the type of projects Vanderlande produces. The bars within the net sales bar graph of figure 10, represent both small projects (i.e. starting at €50.000) represented by the orange colour, and big projects (i.e. starting at €100.000) represented by the green colour. As shown, the share of small projects is higher than the share of big projects, while the margins of smaller projects are lower than those of big projects. The margins are lower, due to the amount of competition for smaller projects. For big, and more complicated
projects, there are no more than three competitors generally. Due to this lower competition, the margins can be set higher. As the share of small projects is higher, the need for an increase in efficiency, and thus monitoring and controlling the emergent conceptual model is emphasized. Smaller margins lead to less opportunity for coordination failures, not to mention losses as the Jeddah or Australian Post projects.

To indicate the successes and possibility of a continuous implementation of the IM approach, a project example within Vanderlande can be given: Deutsche Post. This project represents a project in which continuous IM is applied. Structural meetings are part of the project. This structure enables the participants to ventilate possible risks, and collaboratively preventive actions can be taken or prepared. The project manager indicates: "We collaborate intensively to increase the level of collaboration for Deutsche Post. We now have a mutual goal and vision, and the needed responsibilities are taken."

The need for a continuous application of the IM approach has been made clear: the emergent conceptual needs monitoring to prevent ad hoc IM from happening, and enabling continuous IM. A continuous IM approach will stimulate the development of networks of internal relationships (e.g. relationships between employees, teams, or departments within a firm) (Ballantyne, Martin, and Payne, 1995), and knowledge renewal and therefore can be seen as a new source of competitive advantage (Ballantyne, 2003). Additionally, the continuous approach will enable continuous interdepartmental integration, what can eliminate two parts of the indicated model: project failures and temporary urgencies. Figure 11 displays that when the emergent conceptual model is monitored and controlled, only interdepartmental integration, and the alignment of needed resources are part of the model.

The main question is which department needs to be responsible for the monitoring and controlling of the model? Currently, the IT department of Vanderlande (not part of the defined scope) is responsible for maintaining the quality system in terms of processes. They describe and own the processes within Vanderlande. Aligned with the job- and task responsibilities of the IT department in terms of owning and describing processes, they will be responsible for monitoring and controlling the emergent conceptual model. It is recommended that the IT department evaluates the described processes with the quality department due to their knowledge.
5.2. **Plan of action quality department**

This plan of action will present several solutions to the determined problem of the quality department in terms of unclear job- and task responsibilities. Three solutions will be presented and evaluated to determine the most appropriate and feasible recommendation. The evaluations are based on requirements, selection criteria, and an expert assessment.

5.2.1. **Requirements solution**

The solution must comply with several requirements.

**Functional requirements:**

- The solution must clarify the positioning compared to the other departments (e.g. sales, purchasing, project manager, service, and R&D) of the quality department.
- The solution must clarify the job- and task responsibilities of the quality department.
- The solution must provide insights in the responsible employees of the quality department.
User requirements:
- The solution must be user friendly.
- The employees must possess the competencies to use the solution.

Preconditions
- The solution must fit the current culture of Vanderlande.
- The solution must fit the growth of Vanderlande.

Design restrictions
- The solution must be able to implement short-term.
- The solution must have minimal costs.

5.2.2. Solutions
This section presents three solutions to the determined problems of the quality department. The solutions are based on three different approaches. The first solution has an intra-departmental approach, as the department is part of the project process. The second solution has an inter-departmental approach, as the department has an overarching function. The third and final solution has an account management approach, as one point of contact is appointed per project.

Solution 1. Object of design: Participant of project process. The quality department is part of the primary project process: quality will be part of the process from point ‘X1’ to ‘X2’ (see Figure 12). The department will be involved in both the open up (kick off project)- and close down meeting. Presence during the open up meeting will provide the department the needed information to assess what the contributions in terms of capabilities of the department can be. These contributions are in the vein of audits of suppliers, quality control of critical purchased products, and providing needed documentation. The quality department will be involved in the operations phase of the project (i.e. from X1 to X2). In terms of the learning ability, the department will be involved in the close down meeting to reflect on the successes and failures of the project.
Solution 2. Object of design: Monitor and control project process.

The quality department will function as an overarching quality assurance department by monitoring and controlling the processes of the projects (i.e. all involved processes from ‘t0’ to ‘t1’, see Figure 12). The department will develop protocols to describe the to be performed processes of each department contributing to the process (i.e. t0 – t1). The processes of projects will be monitored and controlled to avoid flaws; a zero tolerance policy will be handled.

Solution 3. Object of design: single point of contact

The quality department will provide a single point of contact for every project, and more specifically, every project manager. Strict interaction perspectives encourage departments to act independently with predetermined contact points (Kahn and Mentzer, 1998). A requirement for this solution is that the quality manager benchmarks the capabilities of the department. The main message of the presentation needs to be: ‘what is Vanderlande quality?’, and what activities does the department perform in order to ensure the ‘Vanderlande quality’?
5.2.3. Selection criteria and values

The design parameters together with their values represent the minimal specification needed to execute and implement a solution (see Table 9).

<table>
<thead>
<tr>
<th>Selection criteria</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willingness to change and learn</td>
<td>Willingness to implement changes in the current situation and being critical in evaluating when the change is implemented.</td>
</tr>
<tr>
<td>Management support</td>
<td>Propagate and support solution due to autonomous functions related to the project.</td>
</tr>
<tr>
<td>Support Project Managers</td>
<td>Support is needed due to autonomous project managers.</td>
</tr>
<tr>
<td>Change in current described project processes</td>
<td>The described processes related to the project will need to be adapted.</td>
</tr>
<tr>
<td>Development of protocols for processes</td>
<td>A change in described processes requires development of protocols for the monitoring and controlling of these processes.</td>
</tr>
<tr>
<td>Visibility quality department</td>
<td>The tasks- and job responsibilities need to be clear for participants of the project process.</td>
</tr>
<tr>
<td>Competencies quality department</td>
<td>The department needs the required employee competencies to execute a solution.</td>
</tr>
<tr>
<td>Support quality department</td>
<td>The employees of the department should support the responsibilities related to the solution.</td>
</tr>
<tr>
<td>Capacity quality department</td>
<td>A higher capacity in terms of man hours is needed in order to successfully implement a solution.</td>
</tr>
<tr>
<td>Implementation time</td>
<td>Short-term</td>
</tr>
<tr>
<td>Budget solution</td>
<td>Minimal</td>
</tr>
</tbody>
</table>

Table 9: Selection criteria solutions

5.2.4. Selection criteria

This section presents the rating of the selection criteria for the proposed solutions. The selection criteria were validated by experts; the three experts part of the expert review. At first, some disagreements in terms of criteria occurred. After discussing these disagreements during a meeting, the selection criteria were determined. Every criteria is rated based on a five point scale; the higher the weight, the more important
the selection criteria is. The solution with the highest total score, is proposed as most suitable solution. The rating of the selection criteria is presented in Table 10.

<table>
<thead>
<tr>
<th>Selection criteria</th>
<th>Weight</th>
<th>Solution 1</th>
<th>Solution 2</th>
<th>Solution 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget solution (1 = high, 5 = low)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Implementation time (1 = long, 5 = short)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Amount of support needed (1 = high, 5 = low)</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Clarifies positioning quality department (1 = not at all, 5 = highly)</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Clarifies job- and task responsibilities quality department (1 = not at all, 5 = highly)</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Creates visibility quality department (1 = not at all, 5 = highly)</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>User friendliness (1 = low, 5 = high)</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Competencies to adapt solution (1 = insufficient, 5 = sufficient)</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Able to monitor and control processes (1 = insufficient, 5 = sufficient)</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Capacity department (1 = insufficient, 5 = sufficient)</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Solution fits culture Vanderlande (1 = absolutely not, 5 = absolutely)</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Changes current organogram (1 = absolutely, 5 = absolutely not)</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Costs of solution (1 = high, 5 = low)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>128</td>
<td>141</td>
</tr>
</tbody>
</table>

Table 10: Rated selection criteria solutions

The most suitable solution is solution three, based on the total score of the selection criteria. Next to the rating based on the parameters, requirements, and selection criteria, an expert review will be presented in the next sub paragraph.

5.3. **Expert review**

In terms of qualitative research, several methods (i.e. expert review, focus group, role play, thought experiment, scenario’s, pilots (vd Borgh, 2013)) can be used to review the proposed solutions. The method expert review is chosen, as it is the most suitable method for this research to use. Three expert were
interviewed to assess the three solutions based on their knowledge and experience. The main question was whether the solution fits the strategy of the quality department and whether the solution is feasible. A summary of the interviews is presented in Appendix C. The conclusion of the expert review together with the rating of the selection criteria is that the most suitable and feasible short term solution is number three. This solution complies with the developed parameters and requirements. The experts indicated that this solution is a short term step that needs to be taken to create awareness for the quality department in terms of competencies and capabilities.

By means of a presentation in which the quality manager presents the job- and task responsibilities of the department, the IM approach is taken into account. Part of the approach is senior management support. Davis (2001) argues that managers (i.e. CEO’s, project managers, division managers, plant managers, and product managers) have cross-functional responsibilities. It is their duty to encourage the employees of different departments to cooperatively work together. Part of this encouragement is dealing with cross-functional conflicts and encouraging other departmental managers to develop joint solutions to shared problems. Furthermore, managers must demonstrate the efficiency and effectiveness of their departments by benchmarking the performances (Davis 2001; Varey and Lewis 1999). By presenting the job- and task responsibilities of the quality department, the performances can be benchmarked.

Support must be created by all the managers (i.e. departmental- and project managers) who will be attending the presentation. A pretest can be executed by first talking to, or presenting for people individually to assess the level of acceptance and opposition. This helps in gradually testing out ideas, and the conversations show the perspectives of the others (Davis, 2001). By gradually testing out ideas, the proposals can be strengthen by incorporating others’ ideas and reducing personal ownership (Davis, 2001). It is important to avoid presenting the proposals in a formal meeting before sufficient support has been lined up. The most influential people must support the proposals before they will be presented (Davis, 2001). Furthermore, the quality manager should encourage other managers (i.e. departmental- and project managers) to win over additional people in their areas of influence. Making use of word-of-mouth support of respected colleagues helps in accomplishing this (Davis, 2001). Overall, the presentation must be clear to fit the biases of different constituencies and give generous credit to others for their contributions. The content must be clearly explained and packaged.
6.1. Discussion

In this paper, the effect of the Internal Marketing (i.e. IM) approach in combination with a Project Based Organization (i.e. PBO) has been explored. The research question based on the literature review was:

“To what extent can the Internal Marketing approach explain the interdepartmental integration, and thereby project performance within a Project Based Organization?”

An emergent conceptual model has been identified: low interdepartmental integration and awareness results in an increase in project failures. These project failures cause a temporary sense of urgency which include collaborative behavior, a shared value, and a mutual goal for the departments involved. Due to these factors, awareness is created, and the involved departments are able and motivated to align the needed resources to solve the indicated failure within the project. This conceptual model refers to an ad hoc appliance of IM: when critical situations occur, a network of internal relationships (e.g. a relationship between departments) is created (Ballantyne, Martin, and Payne, 1995). The cross-functional efforts refers to information sharing and interdependency between the multiple involved organizational units (Song, Montoya-Weiss, and Schmidt, 1997). An additional aspect of IM is enabling knowledge renewal and therefore being a source of competitive advantage (Ballantyne, 2003). But as the IM approach is applied on an ad hoc base, the degree of knowledge renewal is low across projects.

Additionally, the research question based on the practical approach of the study, was:

“In what way can Vanderlande benefit from the gained knowledge related to Internal Marketing, and apply this understanding within the organization?”

Due to the identified inefficiency of Vanderlande, a continuous implementation of the IM approach is needed by monitoring and controlling the emergent conceptual model. Not only for the presence of a learning orientation, but additionally for the presence of awareness. Five aspects (i.e. management support, employee satisfaction, customer orientation, awareness, learning orientation) need to be present in order to enable interdepartmental integration. The efficiency of Vanderlande will increase by the elimination of project failures, and temporary sense or urgencies (i.e. unstable use of resources). Additionally, a shift can be
made from reactively solving failures, to proactively anticipating on possible failures. Overall, the IM approach can improve the project performances of Vanderlande as on a continuous base by increasing efficiency, the approach enables interdepartmental integration, which diminishes project failures.

Additionally, the data suggested that out of all the department’s part of the scope (i.e. sales, purchasing, project manager, service, R&D, quality), the quality department is the only department which lacks unexplained involvement in the project process. Nevertheless, although the importance of the department is addressed, it is not involved on a continuous and formal base. Clarity in job- and task responsibilities together with a repositioning of the department is needed. It is therefore recommended to appoint single points of contact of the quality department per project. The quality manager will need to clarify the efficiency and effectiveness of the department by benchmarking the performances.

Overall, this paper contributes to the literature in several ways. The first contribution is the IM approach researched related to a PBO. Although, the several previous studies addressed the important role of IM in service quality (e.g. Lings and Brooks 1996; Stank, Keller, and Daugherty 2001; Rafiq and Ahmed 2001), little is known about the role of IM in PBO’s. Consequently, we extended the IM approach by arguing that the IM approach can positively influence the project performance of a PBO. More specifically, a literature model was conceptualized which indicated that the IM approach indirectly influences the project performance by enabling interdepartmental integration. Empirically it is shown that an ad hoc IM approach positively influences project performances, by enabling interdepartmental integration (i.e. collaborative behavior, shared value, mutual goal). A conceptual model is developed to explain in what way the ad hoc IM approach influences the project performance, and additionally, a variant of the model in which the continuous IM approach can be monitored and controlled. In addition to the IM literature, due to this study an univocal definition for the IM approach could be formed: “The IM approach can be defined as the integration and alignment of values, behavior, and goals between internal customers (i.e. departments) such that it increases firm performance.”

Furthermore, a contribution is made to the literature on interdepartmental integration (e.g. Pinto et al. 1993; Ellinger et al. 2000; Kahn 2001; Kahn and Mentzer 1996; Mohr et al. 1996) by showing evidence for the positive effect of the integration on the diminishing project failures within a PBO. This study also contributes to PBO literatures. In this thesis, the findings suggest that the project performance of a PBO,
when taking specific project characteristics into account, can be enhanced by enabling interdepartmental integration enables by an IM approach.

6.2. **Implications**

The findings imply that by applying the IM approach within a PBO on an ad hoc basis, interdepartmental integration is enabled, which diminishes project failures by a sense of temporary urgency. This temporary urgency (i.e. collaborative behavior, shared value, mutual goal) enables the required resources to be aligned. The importance of a shift to a continuous application of the IM approach is shown as it can contribute to an increase in efficiency. Continuous IM can enable a shift towards proactively anticipating on possible problems, rather than reactively solving problems. Moreover, the findings imply that a continuous IM approach enables the overall interdepartmental integration, which eliminates project failures and thereby the need for temporary sense of urgencies. Furthermore, the findings suggest that the ad hoc appliance of IM needs to be monitored to ensure and enable a continuous IM approach.

6.3. **Limitations and future research**

Although this study has limitations, it also provides ground for future research. First, the study was based on a single case study (i.e. PBO): a large production company that designs and installs warehouse automation-, parcel and postal-, and baggage handling systems. The study should be conducted in additional PBO settings, to enhance the generalizability of the results. Second, the research is based on subjective data concerning employee perceptions. Perceptions do make strong real-world effects, but additional tests could be measured with objective data. Objective data will supplement the current research. Third, the scope of the research was based on six departments (i.e. sales, purchasing, project, service, R&D, quality). As not all the departments of the organization were involved, the generalizability in terms of organization wide can be questioned. The scope of research should be increased; involve more departments to validate the conclusions and able generalizability. The final limitation is related to the five projects chosen. The diversity in projects is relatively low, what questions the generalizability. A suggestion for future research will be to increase the diversity in projects. This will enable a thorough comparison between the indicated project failures, and help determine contextual effects.
6.4. **Conclusion**

This study has explored the IM approach in a PBO research setting. It shows that the IM approach influences indirectly the firm performance by enabling interdepartmental integration, and increasing project performance. Furthermore, the IM approach is an important way to benchmark the capabilities of the quality department and thus increase clarity in job- and task responsibilities. In sum, this research forms a theoretical base for future researchers on the IM approach and PBO’s.
References


Cooper, M.C., Douglas, M.L., and Pagh, J.D. (1997), Supply Chain Management: More Than a New Name for Logistics. Ohio State University (vol. 8, no 1).


Appendices

8.1. Appendix A: The interview guide

Interview guide

The qualitative research methodology will be used for the research focused on collaboration and communication, and the interdepartmental integration of Vanderlande. A research model that is based on an extensive literature study on an Internal Marketing approach, interdepartmental collaboration and communication, and interdepartmental integration, form the basis for the interview. The determination of the appropriate to be interviewed employees of Vanderlande is done by interviewing project managers responsible for specific projects. Their knowledge and experience of projects contributed in determining which projects to use as point of departure for this research. The project manager was able to indicate what people to interview of the five coherent departments. The type of interview will first be explained together with the objective of the research. Subsequently, the interview protocol will be disclosed. The interview protocol exists of several instructions that need to be followed for each interview, to guarantee consistency, and thereby increase the reliability of the findings (Boyce & Neale, 2006).

Research objective. The objective of the interviews is to determine the current situation related to the different facets of the research model. Eventually the current situation related to the collaboration and communication can be determined. An important part in this determination of the current situation is discovering the underlying reasons for the outlined situation. Furthermore the goal is to gain perspective in the opinion of the employees of the different departments in terms of their possible solution to the current lack of collaboration, communication, and integration.

Semi structured interviews. A semi structured interview will be used to gather the qualitative data for the research. This type of interview is mostly used when the interviewers only has one opportunity to interview someone. The interview can provide reliable, comparable qualitative data, and it also provides clear guidelines for the interviewer (Cohen & Crabtree, 2006). The guideline is based upon the predetermined order of relevant topics. But an important aspect of an semi structured interview is having the ability to
diverge from the interview guide. That is why recording interviews is needed in order to process and fully capture the information (Cohen & Crabtree, 2006). Hove and Bente (2005) address that semi-structured interviews, also called focus interviews, combine open-ended questions together with specific questions.

Cohen & Crabtree (2006) define three characteristics of semi-structured interviews:

1. The interviewer and interviewee engage in a formal interview.
2. A list of relevant questions and topics needs to be developed. This functions as a guide during the conversation.
3. In despite of the predetermined topics and questions that function as a guide during the interview, the interviewer is still able to deviate from this guide when necessary.

An important aspect of the interviewer, are the interviewing skills. Hove and Bente (2005) determined three characteristics of good interviewing skills:

1. Encourage the interviewee to talk freely;
2. Being able to ask insightful and relevant questions;
3. Exploring and following up on interesting and relevant topics.
Interview protocol

The interview protocol represents the rules and guidelines that enable and facilitate the implementation and administration of the interviews (Boyce & Neale, 2006). It consists of the instructions that should be followed for each interview; to ensure the consistency between the conducted interviews. This will increase the reliability of the outcomes of the interviews.

Setting up the interviews

The setting up of the interviews will be done by e-mail. The persons that needs to be interviewed will receive the following introductory explanation of the research:

Currently I am executing my master thesis project at Vanderlande. The research is aimed at the collaboration and communication between the coherent departments regarding the projects of Vanderlande. The aim of the research is to improve the current collaboration and communication and thus the interdepartmental integration. Firstly, I conducted interviews with Project Manager X, responsible for project X, to determine which employees of which departments I should interview. I would like to plan an interview to ask several questions related to my research in order to gain needed information. What is in it for you? Having the ability to reflect on the current situation, and express your preferences related to the current situation. What should change, and what change would really benefit the current collaboration, communication, and the interdepartmental integration?

I would really appreciate it if it would be possible to schedule an interview of one hour to discuss the predetermined questions. The questions will be send preliminary to the appointment.

Introduction. The introduction of the actual interview will be:

First of all, I would really thank you for taking the time to meet with me. I am Eline Ponjé and currently executing my final master thesis research at Vanderlande. The aim of this interview is to evaluate upon the current communication and collaboration between the departments that are related to the projects of Vanderlande. The interview should take an hour, and I would like to ask if you agree with me taping the session? All the responses of the interview will be kept confidential. This means that it will not be able to
identify you as a respondent in any of the information used for the research report. You are free to talk about anything you want, and if you don’t want to talk about a specific subject you are free to address this.

Concluding the interview. Is there anything you would like to add related to the specific subjects? If I need some additional information or clarification on specific points, is it possible to contact you about this? The information of you and your colleagues conducted from the interviews will be analyzed, and finally presented in a report. If you are interested, I can send you a copy when the report is finished, and you are free to join my presentation of results. Thank you for your time.

During the interview. The interview, as stated in the introduction of the interview, will be audiotaped. Furthermore notes will be taken in the form of keywords.

Following the interview. The interview will be analyzed and developed into an interview report. This report will be send to the interviewee to check whether the information is accurate and whether it receives approval to be used for the research.

Interview questions

1. Could you tell me something about yourself and your function within Vanderlande?

2. According to my information you were involved in project X. Could you address what your role within this project was?

3. The project is currently completed. Are the predetermined objectives achieved? (Which objectives were predetermined, which are achieved, and which are not?)
   a. Time aspect
   b. Customer satisfaction
   c. Budget
   d. Quality

4. Which aspects/activities of the project went well? (Can you give examples, and at what time during the project did these aspects/activities take place?)

5. Which aspects/activities of the project did not go well? (Can you give examples, and at what time during the project did these aspects/activities take place?)

6. Which departments needed to collaborate related to project X? Why do these specific departments need to work together, or why did they not have to?
7. How did the collaboration with colleagues of other departments proceeded? Why did it went well, or did it not went well? Could you please give examples?
   a. Communication; exchange of information (documented and verbal)
   b. Meetings
   c. Teamwork
   d. Common goal/ vision
   e. Trust
   f. Competencies
   g. Responsibilities
   h. Cooperative behavior; initiatives

8. How did you perceive the management support?
   a. Involvement
   b. Collaboration with other departments
   c. Responsibilities related to decisions

9. Did an evaluation occurred after the project was finished? What has been the application of this evaluation (for example applying the gained knowledge onto other projects?). Is there currently a willingness to learn? If there is, in what way is it secured? If there is not, In what way can the willingness to learn be stimulated?
### Appendix B: The codebook

<table>
<thead>
<tr>
<th>Name main code</th>
<th>Code</th>
<th>Name sub codes</th>
<th>Code</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>A</td>
<td>Failures 6railways</td>
<td>1</td>
<td>The successes and failures of the projects represent the incidents that occurred during the project process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Successes 6Railways</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failures Deutsche Post</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Successes Deutsche Post</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failures Prestina</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Successes Prestina</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failures Pulkovo</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Successes Pulkovo</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failures Izmir Domestic</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Successes Izmir Domestic</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Departmental</td>
<td>B</td>
<td>Sales</td>
<td>1</td>
<td>Per department the main responsibilities and tasks are addressed. This is either from the viewpoint of an employee of the department itself, or of the viewpoint of another department.</td>
</tr>
<tr>
<td>activities</td>
<td></td>
<td>R&amp;D</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>and initiatives</td>
<td></td>
<td>Purchasing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Interdepartmental</td>
<td>C</td>
<td>Sales and R&amp;D</td>
<td>1</td>
<td>The facets that are related to this concept are less, and to a greater extent exemplified per two specific departments. The facets are:</td>
</tr>
<tr>
<td>communication</td>
<td></td>
<td>Sales and Purchasing</td>
<td>2</td>
<td>• Interaction/communication</td>
</tr>
<tr>
<td>and collaboration</td>
<td></td>
<td>Sales and Project</td>
<td>3</td>
<td>• Routine meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sales and Service</td>
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<td>Code F represents the management support per specific department.</td>
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<td>The willingness to learn in general is disclosed with code G. Both the willingness to learn as the extent to which evaluations take place during, or after the project process.</td>
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8.3. Appendix C: Summary expert review

Expert 1. The quality department currently acts as a quality control department rather than a quality assurance department. The department will be part of the supply chain process and involved in the development and design process of R&D on a strategic perspective. The responsibilities of the department will be addressing the risks of the design of new developed products and propose changes that minimize the design risk. The department will continue to conduct supplier audits. The solution that complies with the strategy of the department on a short term, is solution three. The department should not be involved in the projects. The capacity of the department is inadequate, and the project manager will overload the department with tasks. The current priority of the department is to clarify what quality is, and in what way this quality is assured by the department. Why does Vanderlande has a quality department? The department must give answer to this question. It must be clear for the project, and specifically the project managers, who are part of the quality department, and who they can contact when needed.

Expert 2. Out of the three presented solutions, the second solution (i.e. the quality department as an overarching quality assurance department) is most suitable. That is exactly what the department and organization needs. The department should assure the quality over the supply chain (i.e. current responsibility), R&D, service, purchasing, sales and the project manager. Eventually, the department will not be part of the supply chain Europe branch in terms of the organizational chart, but a department that stands alone. An important short term activity is marketing the capabilities of the department. Additionally, a solution that is feasible and needed on a short term to accomplish solution two, is solution three.

Expert 3. Out of the three solutions, expert 3 indicates that solution three is most suitable. Like expert 2 addressed: the department should assure the quality over the supply chain (i.e. current responsibility), R&D, service, purchasing, sales and the project manager. It will be inevitable for the department to continue checking incoming goods, and executing audits. The incoming goods inspection must be minimized by shifting the quality responsibility to the supplier. The first step that is currently needed, is promoting the quality department. It must be clear for the other departments (e.g. sales, purchasing, project, service, and service department) what the capacities and responsibilities of the department are together with specific contact persons. Awareness needs to be created.