

The micro-foundations of absorptive capacity in the food service industry.

FINAL THESIS

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Abstract

Innovation is a way for food companies to differentiate themselves from competitors and to satisfy consumer expectations. However, companies can no longer solely rely on their own innovations to stay relevant in today's market. Additionally, food service innovation is regarded as being complex. Thus, leading to food service companies looking for ideas and resources from external sources, also known as open innovation. Based on research it is understood that absorptive capacity is key to open innovation. However, research has purely relied on R&D and manufacturing firms, missing service-related firms. Furthermore, the micro-foundations of absorptive capacity needed further investigation. Based on the interviews conducted the importance of absorptive capacity in food service companies was shown. Furthermore, a model for absorptive capacity leading to open innovation for service firms was created, showing similarities to previous work done on manufacturing and R&D firms, yet still with its own unique features.

Keywords: Absorptive capacity, Service firm, Open Innovation

Statement of originality

This document is written by Alexander Kegels, who declares to take full responsibility for the contents of this document.

I declare that the text and the work presented in this document is original and that no sources other than those mentioned in the text and its references have been used in creating it.

The Business Management & Organization group is responsible solely for the supervision of completion of the work, not for the contents.

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1. Introduction

Innovation in the food industry determines organizational success, regardless of size and industry (Bigliardi and Galati, 2013). Specifically, Innovation is a way for food companies to differentiate themselves from competitors and to satisfy consumer expectations (Menrad, 2004). However, companies can no longer solely rely on their own innovations to stay relevant in today's market. They should look for ideas and resources from external sources, "single organization cannot innovate in isolation"(Dahlander and Gann, 2010).

Therefore, the relevance of open innovation in the food industry is often talked about (Sarkar and Costa, 2008). This interest is due to the fact that open innovation enables companies to use both internal as external ideas to advance their innovation (Chesbrough, 2006). The core idea of open innovation is to open up the innovation process. The reason that open innovation has claimed much attention because it is said to lower costs, shorten the time to market and increase sales (Huizingh, 2011) it can "accelerate internal innovation, and expand the markets for external use of innovation" (Chesbrough, 2006). A study done by Knudsen (2007) showed that on average food companies, both manufacturing and service, that had released an innovative product had at least worked together with one other external source, once more showing the increasing interest and importance of open innovation in the food sector.

However, even though there has been some attention payed to open innovation within the services domain it has received less attention than manufacturing and R&D intensive firms (Janeiro et al., 2013, Mention, 2011, Mina et al., 2014, Ottenbacher and Harrington, 2009). This might lead to the misperception that innovation in services is less relevant than in manufacturing. However, innovation processes within foodservices are more complex than in the manufacturing sector, because both new product development and new service development need to be achieved (Ottenbacher and Harrington, 2009). Thus, open innovation within the food service area needs further exploration. Trying to figure out how firms (can) succeed is of interest.

A crucial part of open innovation is inbound innovation, the inflow of external knowledge used for innovation. In order for inbound innovation to work companies must possess absorptive capacities, the ability to absorb knowledge, it is a precondition to being able to use inbound open innovation(Spithoven et al., 2010). This is because inbound innovation depends on externally acquired knowledge.

Absorptive capacity is defined as “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990). Hence, looking closer at the aspects that influence absorptive capacity is of great interest. Better knowledge of how the underlying mechanisms of absorptive capacity will result in better knowledge of how companies use open innovation for their own benefit.

For absorptive capacity to work prior knowledge is required so that valuable external knowledge can be properly identified (Roberts et al., 2012). So that external knowledge can then be incorporated and lead to the valuable benefits of open innovation. This statement can be complemented by other research which states that absorptive capacity depends on managerial antecedents, intra-organizational antecedents , inter-organizational antecedents, prior knowledge, and an environmental factor (Volberda et al., 2010). However, these antecedents have not properly been looked at and therefore Volberda et al. state that one critical area that needs to be looked at is the micro-foundations of absorptive capacity (2010, Lane et al., 2006).

Trying to find those antecedents can be done by looking at the underlying routines and processes that exist within a firm, the micro-foundations (Lewin et al., 2010). Therefore Lewin et al. (2010) propose a framework based on previous absorptive capacity research, R&D intensive firms and manufacturing firms, that of internal and external absorptive capacity meta-routines. This framework states that “meta-routines represent the conceptual foundation that give rise to observable and executable absorptive capacity practiced routines within organizations”(Lewin et al., 2010). However, this framework was built using previous research done which only included R&D intensive and manufacturing firms, service and low R&D firms were not included in the building of this framework. Thus, the validity of the framework for service firms has not yet been researched. Hence, given the importance of open innovation to (food) service firms. It is of great interest to look at the building blocks (the meta-routines) that make up the crucial element of absorptive capacity.

The remaining structure of the research paper is as follows. Firstly, is a section with some crucial definitions and concepts that are used throughout this paper. Secondly is a literature review which provides in-depth explanation of the previous research that has been done on the concepts of open innovation and absorptive capacity. The chapter is then concluded with the presentation of the theoretical framework and the research gaps are once more highlighted. Following this is a research methodology, which provides the research design, the data collection and case selection, and the data analysis. Fourthly, the findings of this study will be

presented. Followed by the last section being the discussion, here the conclusions for both the theoretical contributions as for the managerial implications will be discussed, recommendations for future research will also be provided.

2. Key concepts and definitions

This section contains the key concepts and their definitions, throughout the research report these definitions are maintained. Understanding these key concepts will aid in the reading and the understanding of the entire report.

Absorptive capacity: The original definition is: “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990:128). However, the expanded definition which states that acquiring, assimilating, transforming, and exploiting external knowledge will be used during this research (Zahra and George, 2002).

Inbound innovation: the inflow of knowledge used for innovation. Which can be done by leveraging the technologies of others by accessing their technical and scientific knowledge e.g., in-licensing, minority equity investments, acquisitions, R&D contracts, ... (Bianchi et al., 2010)

Meta-routines: “higher level routines that define the general, abstract purpose of routines and that are expressed by practiced routines which are firm specific, idiosyncratic and observable” (Lewin et al., 2010:85). Meta- routines are the theoretical micro foundations (Lewin et al., 2010).

Open innovation: A framework, in which the focus of innovation is found outside the firm and not within the firm’s boundaries. More specifically it enables companies to use “purposive inflows and outflows of knowledge to accelerate innovation, and to expand the markets for external use of innovation, respectively”(Chesbrough, 2006).

2.1 Literature review

Crucial to this research is understanding the linkage between open innovation and absorptive capacity. Open innovation can be separated into two parts: inbound and outbound innovation (Chesbrough and Crowther, 2006). Inbound open innovation focusing on external information to innovate. Thus, absorptive capacity which focusses on finding and using these external information (Spithoven et al., 2010) is crucial to (inbound) open innovation.

2.2 open innovation in the food service sector

The food industry is typically regarded as slow-growing, traditional, low technology, and conservative (Bigliardi and Galati, 2013, Galati et al., 2016). However, since food firms have taken upon them a vast set of challenges, including: customer satisfaction, health and well-being, food safety, and many more innovation has to occur (Bigliardi and Galati, 2013, Galati et al., 2016).

Furthermore, since innovation is seen as a crucial matter to differentiate from competitors in the food sector (Menrad, 2004) and the increased importance of open innovation and its benefits in the food sector (Sarkar and Costa, 2008) the interest and thus research in the food industry and open innovation has been growing (Dahabieh et al., 2018, Saguy and Sirotinskaya, 2014). This is due to the fact that companies can no longer solely rely on their own innovations to stay relevant in today's market, according to Dahlander and Gann (2010) companies need to find ideas and resources from external sources, innovation in isolation will not be successful. It is important to note that innovation in the service field can consist out of two factors, (1) new product development, and (2) new service development (Ottenbacher and Harrington, 2009). Meaning that for food service companies innovation exist out of the development of new food items and intangible features like: atmosphere, service, meal experience (Jones, 1990). It has been stated that due to a limited amount of R&D capacities and scientific expertise (Rodgers, 2007) food service firms get their external knowledge from food manufacturing partners (Michael and Robert, 2009) and less from academic sources like universities or research centers (Mention, 2011, Rodgers, 2007).

However, given the increase in overall service experience, consumer participation has seen a rise in importance to food service firms (Rodgers, 2007). This is positive since, it has been stated that knowledge gained from consumers can aid food service firms in the development of new food concepts and potentially even food innovation processes (Ottenbacher and Harrington, 2009). To increase innovation capacity and to enhance operations

food service firms have been known to source technologies and knowledge from other sectors (Forsman, 2011), this being an example of open innovation.

Overall, it has been said that increasing the usage of technological solutions will increase the innovation in products and services, improve the competitiveness of the firm in terms of differentiation and cost leadership, and increase the profitability and productivity of food service firms (Ottenbacher and Harrington, 2009, Rodgers, 2007, Rodgers, 2009).

Therefore, open innovation is an interesting route for innovation in the food service industry. At its core open innovation is the opening up of the innovation process, it uses both internal and external ideas to advance innovation within the company (Chesbrough and Crowther, 2006). Thus, the main difference with traditional innovation, or closed innovation, is that throughout the entire innovation process knowledge or ideas can be exchanged with the external environment (Huizingh, 2011). Several advantages are provided for open innovation, it is said that it can lower costs, shorten the time to market and increase sales (Huizingh, 2011). Furthermore, open innovation has also been accredited with expanding the market for external use and has been shown to accelerate the internal innovation processes (Chesbrough, 2006).

However, even though there has been some attention paid to open innovation within the services domain it has received less attention than manufacturing and R&D intensive firms (Janeiro et al., 2013, Mention, 2011, Mina et al., 2014, Ottenbacher and Harrington, 2009). This might lead to the misperception that innovation, open innovation, in services is less relevant than in manufacturing. However, innovation process within foodservices are more complex than in the manufacturing sector, because both new product development and new service development need to be achieved (Ottenbacher and Harrington, 2009). Thus, a deeper dive into the workings of open innovation within the (food) service industries is warranted.

As previously mentioned in the introduction, a crucial part of open innovation is inbound innovation (Spithoven et al., 2010). Open innovation can be divided into two separate dimensions (Chiaroni et al., 2011). Outbound innovation and inbound innovation. Outbound innovation is concerned with exploiting innovations externally, thus outside of the company. Whereas, inbound innovation is the inflow of external knowledge used for innovation within the company.

According to Chesbrough and Crowther (2006) and Chiaroni et al. (2011) traditional and lower technology companies, like food companies, have been found to really most heavily on inbound innovation. In order for inbound innovation to work companies must possess absorptive capacities, the ability to absorb knowledge, it is a precondition to being able to use

inbound open innovation (Spithoven et al., 2010). This is because inbound innovation depends on externally acquired knowledge. This brings us to the next part in the literature review absorptive capacity, a prerequisite for open innovation to occur.

2.3 absorptive capacity

The term absorptive capacity was initially coined by (Kedia and Bhagat, 1988). However, most papers regarding this topic refer to the paper written by Cohen and Levinthal (1990) as the founding paper. In this paper they defined absorptive capacity as “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends.” (Cohen and Levinthal, 1990:128). The ability coming from the prior knowledge of individual actors within the firm, thus showing that absorptive capacity can be developed by investing in it.

This definition was later expanded by the work done by Zahra and George (2002) by adding a fourth dimension to the definition, stating that absorptive capacity depends on acquiring, assimilating, transforming, and exploiting external knowledge. Furthermore, Zahra and George (2002) consider absorptive capacity to be a dynamic capability. Dynamic capabilities give firms the ability “to reconfigure its resource base and adapt to changing market conditions in order to achieve competitive advantage” (Zahra and George, 2002:185). It is this ability of the firm to continuously reconfigure and change its resources that separates dynamic capabilities from mere ordinary and substantive capabilities (Teece et al., 1997). It is based on this newer definition provided by Zahra and George (2002) that various research has been continued in the field of absorptive capacity thus this will also be the definition that will be used for the concept throughout this research (Volberda et al., 2010, Todorova and Durisin, 2007, Lewin et al., 2010).

Given the importance of the definition provided by Zahra and George (2002) a closer look will be taken at each element. It important to note that all four elements need to be used in order to achieve sustainable competitive advantage (Zahra and George, 2002). Furthermore, Zahra and George (2002) make a distinction between potential absorptive capacity which consist out of the acquisition and assimilation of external knowledge and realized absorptive capacity which holds transformation and exploitation of external knowledge.

A depiction of the definition and the core elements can be seen in figure 1. The first part of the definition is the acquisition of external knowledge, this refers to the capability of the firm to identify and gain outside knowledge which is crucial to the firm’s operations. Secondly, is the assimilation of external knowledge, this refers to the firm’s routines and processes that are

used to analyze, interpret, understand and process external information. Next, is the transformation of external knowledge this “denotes a firm's capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge” (Zahra and George, 2002:190), meaning that knowledge can either be reinterpreted, deleted or added in a new manner. The final aspect of the definition is the exploitation of the external knowledge, this refers to the capability of the firm to use routines that can extend, refine, or leverage existing competencies or the create novel ones by using the acquired and transformed external knowledge for the firm’s own operations.

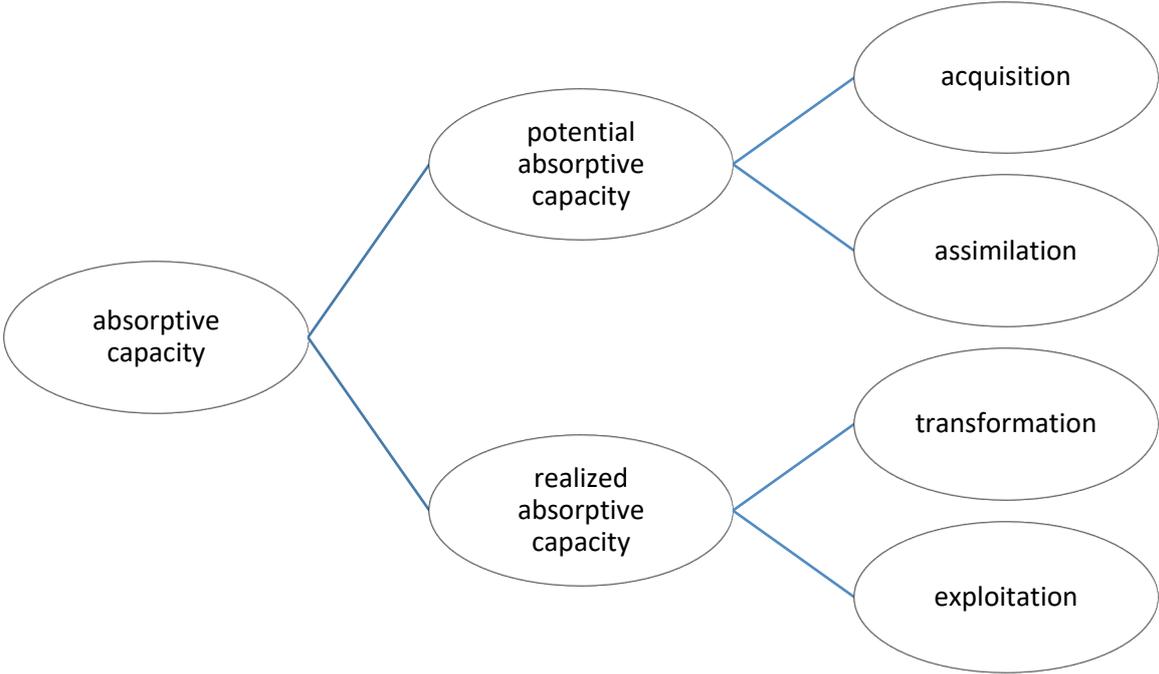


Figure 1. model of absorptive capacity according to Zahra and George (2002)

In the many years that it has been studied absorptive capacity has been found to influence innovation (Tsai, 2001), inter-organizational learning (Lane and Lubatkin, 1998, Lane et al., 2001), intra-organizational transfer of knowledge (Gupta and Govindarajan, 2000, Szulanski, 1996). It also gives the firm a wider range of knowledge, which results in more options to solve problems and react to environmental changes (Bowman and Hurry, 1993, March, 1991). Thereby enabling firms to predict future developments more accurately (Cohen and Levinthal, 1994), and allows the firms to engage in innovation activities through rare or unpredictable combinations of resources (Jansen et al., 2006, Subramaniam and Youndt, 2005). But what is most interesting for this research is that absorptive capacity is seen as a prerequisite for open innovation (Spithoven et al., 2010). Yet, given all this research the underlying organizational routines and processes that make up absorptive capacity are often neglected, as

mentioned by Volberda et al. (2010) to understand absorptive capacity the underlying micro-foundations of the construct must be analyzed.

Attempting to fix this issue Lewin et al. built a framework based on previous research done on absorptive capacity (2010), which as mentioned often thus far is focused on R&D intensive and manufacturing firms. Herein, they suggest that meta-routines are the theoretical foundations of absorptive capacity. By doing so they attempt to overcome some of the limitations that occur when solely looking at indirect proxy measures like R&D expenditure, patents, ...

Furthermore, by identifying the meta-routines of absorptive capacity the mechanisms behind competitive advantage and innovation can be outlined (Volberda et al., 2010, Lewin et al., 2010). On top of this the field of strategic management will be further developed by studying the micro-foundational routines of absorptive capacity (Foss, 2010). Studying high level concepts through lower level phenomena can help to strengthen the structural base of a concept and help to clarify its nature (Gupta et al., 2007). Furthermore, the underlying mechanisms cannot be defined without a focus on the micro-level. All providing an even stronger argument as to why understanding the meta routines of absorptive capacity is important.

Given the definitions of meta-routines: “higher level routines that define the general, abstract purpose of routines and that are expressed by practiced routines which are firm specific, idiosyncratic and observable” (Lewin et al., 2010:85), they are the conceptual foundations that can be observed as routines within an organization. Meaning that meta-routines are the theoretical micro-foundations of absorptive capacity, which are utilized and combined in different ways to achieve actual practiced routines.

Resulting in, a routine based conceptual model (Lewin et al., 2010). In their study Lewin et al. (2010) propose that two elements are important for absorptive capacity to be effective: being able to develop routines for both internal and external meta-routines and being able to include complementary meta-routines into singular routines. The practiced routines are norms, rules, procedures, habits that are firm specific. This framework consists out of five internal meta-routines and three external meta-routines, these meta-routines are expressed through various routines that the firm practices. External routines are those routines that are used when knowledge is gained from an external source, whereas internal routines consist out of practices done internally. The combination of these two elements is needed for proper absorptive capacity (Lewin et al., 2010).

Routines are seen as the building blocks that make up a firms organizational capabilities (Dosi et al., 2000, Winter, 2003). Routines are rules, norms, and heuristics that are used at

different processes and activities within the firm, it is important to note that not all routines become standard operating practices (Lewin et al., 2010). Thus, not all routines become meta-routines. However, many routines do form the basis of meta-routines.

The internal meta-routines are: (1) Facilitating variation, (2) managing internal selection regimes, (3) sharing knowledge and superior practices across the organization, (4) reflecting, updating and replication, and (5) managing adaptive tension. The external meta-routines suggested are: (1) identifying and recognizing the value of externally generated knowledge, (2) learning from and with partners, suppliers, customers, competitors and consultants, and (3) transferring knowledge back to the organization.

Using this approach has a couple of advantages. Firstly, routines and micro-foundations can be empirically observed, thus allowing full operationalization of the construct of absorptive capacity. Secondly, routines that capture the individual dimensions of absorptive capacity within a larger framework can be seen (Chalmers and Balan-Vnuk, 2012).

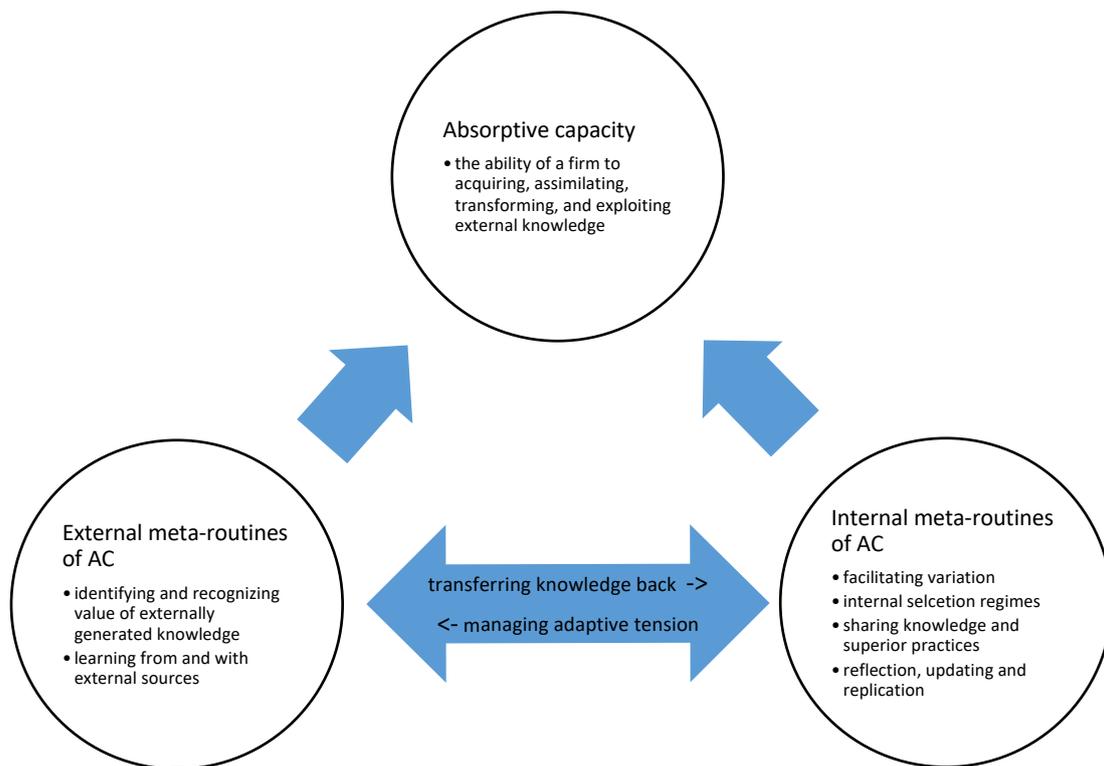


Figure 2. meta-routines (theoretical micro-foundations) of absorptive capacity, adopted from Lewin et al., 2010.

Further explanation of each of these meta-routines will be given in the next sections.

2.3.1 internal absorptive capacity routines

Internal absorptive capacity routines are those meta-routines that make up the management of variation, selection, and replication activities and processes (Nelson and Winter, 1982). Several meta-routines are suggested by Lewin et al. (2010).

The first one being *facilitating variation*; this requires firms to encourage the exploration of new ideas within the firm. This can be witnessed through norms, processes, policies, activities, and many more. *Internal selection routines* refer to the decision-making processes that a firm puts in place to select which projects and activities to invest in and how to allocate the required resources to these projects and activities. Thirdly, *sharing knowledge and superior practices* entails all the methods used by companies to share the knowledge gained. This can be in the form of workshops, office layout (open vs. closed), meetings, ... *Reflecting, updating, and replicating* is seen as the routines set in place to reflect on past experiences (activities, projects), looking at competitors, learning from experience, communicating with users and other stakeholders. Finally, there is *managing adaptive tension*, sits between internal and external meta routines. They are the routines set in place to create goals and expectations that stimulate internal changes by comparing the firm to other companies.

2.3.2 external absorptive capacity routines

These routines are focused on the facilitation of exploration of external knowledge and the adaption processes of this knowledge. Several external absorptive capacity routines have been suggested by Lewin et al. (2010).

Identifying and recognizing value of externally generated knowledge, entails the mechanisms set in place to monitor and find externally relevant knowledge and innovations that could be adopted by the firm. *Learning from and with partners, suppliers, customers, competitors, and consultants* means that close collaboration will occur between at least two entities: universities, customers, competitors, suppliers, scientific institutions, and several other possibilities (Tether, 2002). It means that, to some extent, there is shared access to each other's knowledge, companies are opening up their innovation process to innovate with and learn from external sources (Ollila et al., 2009). Making this a good way to expand the firm's knowledge with external knowledge that is not publicly available (Lewin et al., 2010). *Transferring knowledge back to the organization*, involves bringing the externally found knowledge back into the firm and linking this new knowledge to the proper internal knowledge so that innovation can occur. This linkage of internal knowledge with external knowledge is a crucial element of absorptive capacity (Becker and Peters, 2000, Palmberg, 2004).

2.4 theoretical framework

Combining all the previous literature research into one comprehensive framework results in figure 3. The aim is to highlight all the critical components that are crucial to properly

answering the main research question. Furthermore, the framework was also used for the construction of the semi-structured interviews held with personnel from the case study company. The findings and further discussion during this research will also use the final theoretical framework as a guide.

As can be seen the outcome of this framework is open innovation. As discussed in the previous sections open innovation is regarded as a way for food service firms to innovate (Sarkar and Costa, 2008). Given that the food industry has taken upon themselves a vast set of challenges (Bigliardi and Galati, 2013, Galati et al., 2016) and that innovation is seen as a crucial way to differentiate from the competitors (Menrad, 2004) the various benefits from open innovation are a welcome aid.

As discussed the food industry, like many other low technology industries, uses mostly inbound open innovation (Chiaroni et al., 2011). Thus, looking closer at the key element of inbound open innovation, absorptive capacity, is crucial (Spithoven et al., 2010).

Using the definition provided by Zahra and George (2002) two elements of absorptive capacity can be found, potential and realized. These two elements are further subdivided into two more forms. With acquisition and assimilation belonging to potential absorptive capacity and transformation and exploitation belonging to realized absorptive capacity. Combining this with the framework provided consisting out of internal and external meta-routines by Lewin et al. (2010) and built upon by Chalmers and Balan-Vnuk (2012) results in a framework that will look at the underlying meta-routines for these four elements of absorptive capacity in the food service industry. The internal meta-routines are: (1) Facilitating variation, (2) managing internal selection regimes, (3) sharing knowledge and superior practices across the organization, (4) reflecting, updating and replication, and (5) managing adaptive tension. The external meta-routines suggested are: (1) identifying and recognizing the value of externally generated knowledge, (2) learning from and with partners, suppliers, customers, competitors and consultants, and (3) transferring knowledge back to the organization. It are these routines that form the basis for the firms capabilities (Dosi et al., 2000).

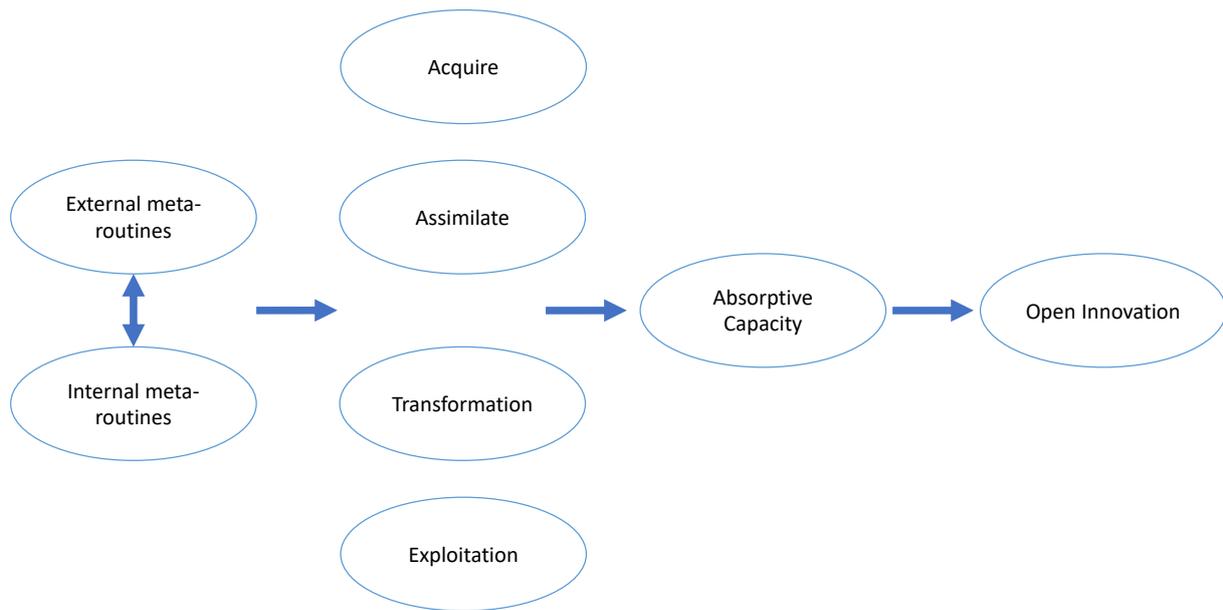


Figure 3. Theoretical framework

By using this framework the meta-routines of absorptive capacity and therefore the underlying mechanisms behind competitive advantage and innovation can be outlined for the (food) service industry (Volberda et al., 2010, Lewin et al., 2010). This is because a lower level phenomena is used to study a high level concept (Gupta et al., 2007).

2.5 research gaps

There are various research gaps that make this research interesting for both the academic and the practitioner's side. Firstly, the bulk of the studies done on absorptive capacity, and open innovation are related to R&D intensive firms and manufacturing firms, for these type of companies the relation between open innovation and absorptive capacity is well understood (Spithoven et al., 2011), absorptive capacity is seen as a prerequisite of open innovation. Meaning that absorptive capacity is an important factor of open innovation.

However, service firms have been neglected in the open innovation and absorptive capacity literature, thus needing further research. Research on absorptive capacity has previously focused on manufacturing, high R&D spending, and technological firms. No evidence of absorptive capacity being researched has been found in the service sector, even after a close look in several high-ranking service journals (Journal of service management, journal of service research, journal of service theory and practice, Manufacturing & Service Operations Management). Thus, this research could be the starting point to fill this void. As previously mentioned the recent need for innovation in the food sector has led to an increased discussion of open innovation (Sarkar and Costa, 2008). Given that innovation within the (food) service

industry is regarded as more complex than that of for instance manufacturing firms (Ottenbacher & Harrington, 2009), a closer look at the workings needs to be done. Therefore, combining both the lack of research that has been done in service firms and the recent awareness about the need for open innovation (and thus absorptive capacity) in the food industry results in a research looking at food service companies. Hence, this research hopes to add to the field of open innovation and absorptive capacity by looking at service firms, more specifically food service firms.

Secondly as mentioned by Lewin et al. (2010) the micro-foundations ,the specific organizational routines and processes, that are the building blocks of absorptive capacity remain unknown, the construct remains a black box (Lane et al., 2006, Lane et al., 2001, Zahra and George, 2002). Therefore, extra research needs to be done to find the underlying dimensions (routines) (Kazadi et al., 2016). A first step trying to accomplish this was done by Lewin et al. (2010), they propose a model that incorporates both the internal and external meta-routines that make up the micro-foundations of absorptive capacity. They state that organizational absorptive capacity is built and maintained by individual and combined routines. However, this model was constructed based on previous research. Thus, missing data from service firms. Furthermore, Lane et al. (2006), also discuss that the underlying processes that make up absorptive capacity are neglected in research, and several others call for more research to be done in this area (Lewin et al., 2010, Chalmers and Balan-Vnuk, 2012). Hence, this research will discuss the micro-foundations (i.e. the routines) that make up the absorptive capacity in a service firm, a food service firm.

So, to summarize given the lack of research done into open innovation and absorptive capacity for service firms and not understanding the building blocks of absorptive capacity this research will add to the literature by gaining insights into the micro-foundations of absorptive capacity of a service firm, a food service firm, by looking at the routines that make up the meta-routines of absorptive capacity of these types of firms. Which results in the following research question to be answered: *What are the micro-foundations of absorptive capacity in the (food) service industry?* Thus, meaning to understand how food service firms build meta-routines underlying absorptive capacities needed to use open innovation properly. This will be done by using the routine-based conceptualization developed by Lewin et al. and further investigated by Chalmers & Balan-Vnuk (2010,2012). Firstly, the model will be validated for use within the service industry through the interviews conducted. Secondly, the model will be expanded based on the conducted interviews within a case company which hopefully will provide new findings. Understanding these building blocks of absorptive capacity will aid in understanding how

service firms can use these to gain (maintain, add, ...) absorptive capacity and thus use this crucial element of open innovation.

3. Methods

This chapter contains the methodology that was used for the empirical research. Everything was done in a way to answer the main research question as well as possible.

3.1 Research design

For the purpose of finding the underlying meta-routines of absorptive capacity a single case study in the food service industry was chosen. A case study was used, because for the exploration of research gaps and complex phenomenon in a specific context, case studies can be used to build understanding inductively (Eisenhardt, 1989, Eisenhardt and Graebner, 2007, Yin, 1994). Furthermore, case studies are considered rich empirical explanations of certain situations (Yin, 1994) that provide theory that is testable, accurate and interesting (Eisenhardt and Graebner, 2007). A single case study can be chosen if it is straight forward, if it is either very relevant, if it is an opportunity of unusual research access or if it is a great example (Siggelkow, 2007). The company selected for this research showed both promising examples of absorptive capacity in the food service industry as did it provide unusual research access. Thus, the choice made for the approach used is justified.

Complex phenomenon that are difficult to research quantitatively can be measured qualitatively (Eisenhardt and Graebner, 2007). Moreover, qualitative research has been embraced by the management fields and helps in understanding strategic management in food service firms (Arendt et al., 2012). All the while, theory building papers from cases are most often considered the most interesting (Bartunek et al., 2006) and impactful (Eisenhardt and Graebner, 2007). Thus, a qualitative approach will be used.

As proposed by Eisenhardt and Graebner (2007) it is critical to prove that the research question is both crucial to the organization (management) and to future theory building. Laid out in the previous sections was a detailed description of the importance for both as was a clear research gap provided which is also crucial according to Eisenhardt and Graebner (2007). Hence using the framework set up by Lewin et al. (2010) the five internal and three external meta-routines and potential additional meta-routines were looked for through interviews and observations, looking for the routines in a food service firm that make up these meta-routines. Thus, looking for the manifestation of the meta-routines within the food-service context, and hopefully being able to validate and improve the model through this method.

The company used for the single case study was one in the food service industry, more specifically the food catering industry, with locations throughout the Netherlands. As

previously mentioned, this company provided unusual research access, all facilities and personnel were accessible for the purpose of this research. Furthermore, the company had shown signs of open innovation, a previous Wageningen Master student had identified and studied it at the case company. More specifically inbound innovation, thus absorptive capacity was present. Thereby, the company provided sufficient indication of being a strong candidate for a single case study (Siggelkow, 2007). A benefit of having access to all personnel was that this assisted in limiting bias, as mentioned by Eisenhardt and Graebner (2007) using actors from various layers within the organization aids in diverting bias since these actors view the focal phenomena, meta-routines of absorptive capacity, from different perspectives.

3.2 Data collection and methods

Semi-structured interviews were used for the aim of the research, meaning that the general theme and the questions were made ahead of time but that new questions could be added as they emerged during the interviews (Saunders and Lewis, 2009). The theoretical framework provided in figure 3 formed the basis for the set-up of the interview questions. The focus of the interview was to find the underlying meta-routines, either formal or informal, that were used within the company. According to research there are four types of questions needed for a successful interview, introduction, transition, key, and closing questions (Castillo-Montoya, 2016). Therefore, the interview protocol had all four types. For the entire interview protocol see appendix.

Interviews were conducted with 19 employees from the case study company. These employees ranged from the CEO to lower management and included both service office and location-based employees. This was done as to ensure a limitation of bias occurred, through the involvement of informants from different levels within the company (Eisenhardt and Graebner, 2007). Besides the topic of the research no prior information was provided to the interviewees, thus no preparation was done by any of the interviewees. The interviews were held in person or by telephone either in English or Dutch, depending on which language the interviewed person felt most comfortable with. This resulted in conducting 2 English interviews and 17 Dutch interviews, of which 2 telephone interviews both conducted in Dutch. After asking for permission all interviews were recorded with a voice memo app. The interviews ranged from 35 minutes to 2 hours and were all transcribed verbatim, these transcripts are available upon request. An overview of all the selected interviewees can be found in table 1. Interviewees overview.

Furthermore, interviews were conducted on various locations. This was done for two distinct reasons. The first reason was simply for the convenience of the interviewees, interviews were conducted at the location that suited them best with the aim of not adding any unnecessary stress to the interviewee. However, by going to these various locations, routines could also be picked up by observation, and then added to the model later.

Table 1. interviewees overview

Number	Job title	Language	Method	Time at company	Location
1	General manager	English	Person	6 months	HQ
2	Executive director, Format manager	English	Person	20 years	Wageningen
3	Junior assistant marketing	Dutch	Person	1 ½ years	HQ
4	HR-manager	Dutch	Phone	3 years	/
5	Administrative employee	Dutch	Person	6 years	HQ
6	Commercial and marketing director	Dutch	Person	1 year	Hoge school Amsterdam
7	Marketing coordinator	Dutch	Person	1 ½ years	HQ
8	Purchasing manager	Dutch	Person	10 years	HQ
9	Operational manager	Dutch	Phone	1 ½ years	/
10	Quality manager	Dutch	Person	4 years	Wageningen
11	IT employee	Dutch	Person	1 ½ years	HQ
12	HR advisor	Dutch	Person	6 months	HQ
13	Location manager (campus manager)	Dutch	Person	6 years	Wageningen
14	Assistant-cluster manager	Dutch	Person	3 years	University of Amsterdam
15	Cluster manager	Dutch	Person	1 Year	University of Amsterdam
16	Format manager	Dutch	Cancelled	N/A	N/A
17	Food scout	Dutch	Person	2 years	University of Amsterdam
18	Food scout back office	Dutch	Person	9 years	University of Amsterdam
19	Operational manager	Dutch	Person	1 year	Hoge school Amsterdam
20	Location Manager	Dutch	Person	7 years	Wageningen

3.3 Data analysis methods

As mentioned above the semi-structured interviews were transcribed verbatim. This was done so that a proper data analysis could take place. This analysis was done by coding every interview with the help of the program Atlas.ti, a software provided by the university, so that the reoccurring topics and meta routines could be discovered. The data was then analyzed using an iterative coding process between data and literature theory.

Following Koppman et al. (2016) the data structure that emerged from this three-stage coding process is depicted in figure 4, relevant quotations for each first order can be found in table 2. The first-order concepts were generated by identifying reoccurring themes, for instance firm structure, sharing of knowledge, and various other themes were mentioned by several different interviewees. Secondly, relationships between the first-order concepts were looked for. These were then grouped together into second-order themes, when possible these themes were described by the absorptive capacity routines found by Lewin et al. (2010). For instance, open office lay out, communication style and sharing new knowledge were all grouped into the second-order theme “sharing knowledge and superior practices”. Finally, relationships between these second order themes were looked for and linked with the proper part of the absorptive capacity definition provided by Zahra and George (2002). For instance, “identifying and recognizing value of externally generated knowledge” and “learning from and with external parties” were linked to the acquisition. The interesting relationships found for (food) service companies from all the interviews are discussed in detail in the following section.

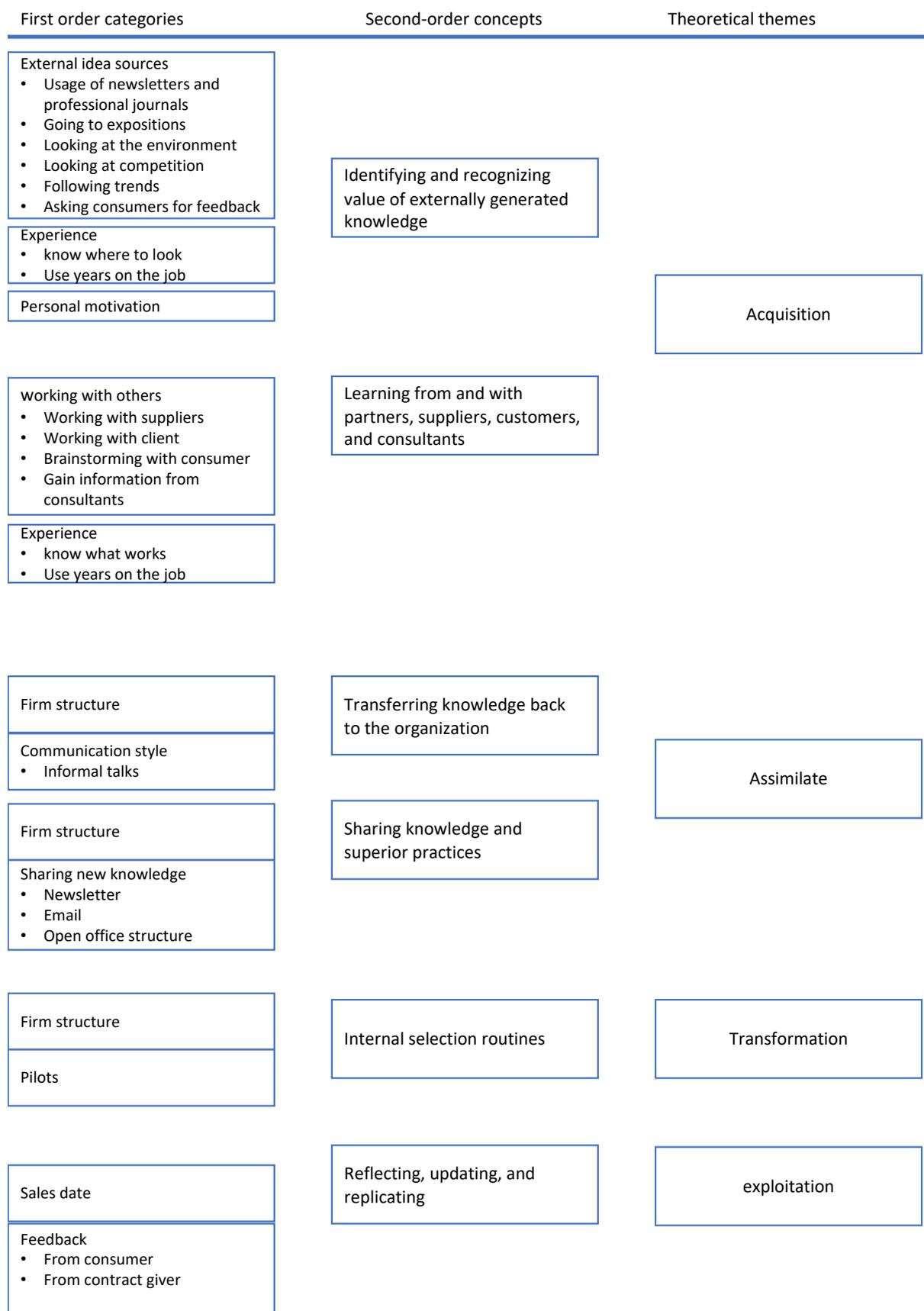


Figure 4 data structure three phase coding process

Table 2. First order related quotes

First order	quotation
External idea source	<p>“I am subscribed to every newsletter imaginable”</p> <p>“We have usually official information made by the public departments and very important and gave it to us. For example, the European department of statistics the dependable kind of kind of information you need [...] for example the daily food retailer is the organization that they make a yearly report about the marketing. today, Last week we received an analysis about the food and beverage market”</p>
Experience	<p>“Yes, I took experience from my previous employer on how such a form could be made, they were slightly more organized in such matters.”</p> <p>“That what I take with me in this first year at the case company is just my backpack of experience. I am, for the record, 55 years old, so I have had multiple functions within operations.”</p>
Personal motivation	<p>“my passion is travel [...] When I landed I searched the most famous concept in this city [...] For example last year when I was in Dubai [...] I spent 12 hour in the airport to check all the concept and the vision of this concept”.</p> <p>“I personally try to gain knowledge into the newest concepts”</p>
Working with others	<p>“Suppliers always share new products, which is very important, especially given our healthy canteen plan”</p>
Firm structure	<p>“ I tell my cluster manager about it or I tell my district manager about it [...] I inform the quality department about it, [...] I provide new knowledge to marketing, [...] I have the feeling that now they listen much better than before.”</p> <p>“if you need knowledge you just walk over there”.</p> <p>“I know very well what my decision-making power is regarding these subjects, and what I cannot decide I place in the hands of the proper person”</p>
Communication style	<p>“I use my informal communication style to share internally, sometimes to create support. By informally explaining stuff you get understanding”</p> <p>“If something is wrong, we just say it”</p>

	<p>“I just had a talk with the director, they are open for information. They are accepting of criticisms and want to know what you think.”</p>
Sharing new knowledge	<p>“food inspirations has workshops, we split ourselves up so that we could follow as many as possible and informed each other about it later, so I really wrote something about it [...] that what I had written I emailed to people that I thought might find it interesting”</p> <p>“the point yeah, the point is always to share information, project, it is not eh, is a false idea that the knowledge skills and then the information is power.”</p> <p>“information that you provide there (in the newsletter) goes around the entire company”</p>
Pilots	<p>“a local hero does not do a pilot, a local hero is a pilot, we want to know if it works”.</p> <p>“At the WUR there was a pilot with vegetarian shawarma, [...] and it will be coming back into the assortment.”</p>
Sales data	<p>“As an example, we are changing the look and feel at the TU delft, it is being implemented, but also being monitored, based on the changes we make we are also looking at the key figures, whether we are selling more or less [...] our first look is sales data.”</p> <p>“introducing a new food product is fun, but you don’t know if it will work, so we test it and look at the sales data”</p>
Feedback	<p>“What I find important is that I often ask the students (consumers) what they think”</p> <p>“via a platform and a website, we can connect to the entire community and receive feedback”</p> <p>“we have a project planning tool [...] afterwards we can learn from what happened”</p>

4. Findings and discussion

In the search of identifying the micro-foundations of (food) service firms the interviews revealed that there is a certain structure and order when it comes to absorptive capacity and open innovation. The importance of gaining, sharing, and using new knowledge for the case firm was highlighted by the following statement made by the general manager:

“When you have or receive correct information. The priority is it to understand if it is important for the business to improve the performance of the company. If yes, we have to move very fast to share this information with your colleagues to make a decision with very very fast”.

Based on the interviews and the data structure a model (Figure 5), which builds upon the previous model developed by Lewin et al. (2010) and the definition of absorptive capacity by Zahra and George (2002), was developed. The model that emerges has similarities to the one proposed by Lewin et al. (2010) for R&D intensive and manufacturing firms. However, various unique aspects are also witnessed. For instance, the micro-foundations “facilitating variation” and “managing adaptive tension” were not found in the case company interviews. The following section will dive deeper into the specific findings and the constructed model will be highlighted at the end of this section.

4.1 Acquiring

The definition provided by Zahra and George (2002), mentioned the four aspects that were required for absorptive capacity to occur. What they did not mention was that these happened in a sequence. Based on the interviews it could be concluded that there was a sequence, as can be seen in the final model (figure 5). The sequence being continuous, repetitive, and iterative, yet still unmistakably a sequence. The first step of this process is the acquisition phase, the phase in which the firm identifies and gains external knowledge. Two meta-routines were identified for this phase, namely “Identifying and recognizing value of externally generated knowledge” and “learning from and with partners”. What is interesting to note is that these are the two external routines identified by Lewin et al. (2010), meaning that first the firm looks externally to then move the knowledge internally and use the internal meta-routines.

4.1.1 Identifying and recognizing value of externally generated knowledge

From the interviews it become abundantly clear that throughout the organization people look outwards for new ideas. This took on various different forms. Using newsletters and

professional magazines was one way that almost every single interviewee mentioned, one interviewee even said:

“I am subscribed to every newsletter imaginable”.

Another external source for both product and process ideas that was mentioned was going to trade fairs like for instance Horecava. Various levels of employees went to this type of event, marketing, sales and operations mentioned visiting trade fairs as a way to gain external knowledge. These trade fairs provided the company and its employees with sector specific knowledge, which in turn could be internalized for future developments.

The previous examples, newsletters and trade fairs focused primarily on gaining sector specific or sector related knowledge. However, as mentioned by Forsman (2011) the case company also looked at other (external) sectors to increase their knowledge base. This became clear through another source often mentioned: the internet, yet not specifically for food service-related information. Browsing the internet during the day, at work or at home could spark new insights for later innovations to occur. As one employee put it:

“I simply browse the Pinterest design sites”

Other routines mentioned by a couple employees included: following trends, looking at other food service companies, travel and various other routines. It became clear that throughout the various layers in the company the routine of looking externally for knowledge was embedded.

While not a routine, personal motivation was also key in identifying external knowledge. As mentioned, looking at other food service concepts was mentioned by interviewees. Some people mentioned that during their off hours they were constantly looking for new ideas, clearly showing that personal motivation and passion are key. Three people actually mentioned that when they travel, they liked to see what other food service companies were doing, as one person put it:

“my passion is travel [...] When I landed I searched the most famous concept in this city [...] For example last year when I was in Dubai [...] I spent 12 hour in the airport to check all the concept and the vision of this concept”.

Furthermore, experience, again not a routine, was also deemed important for identifying and recognizing external knowledge. This could be either experience from previous jobs or

experience accumulated while working at the company in question. Experience could bring in new knowledge, for instance one person used a process used in her previous company to improve a process at the case company:

“Yes, I took experience from my previous employer on how such a form could be made, they were slightly more organized in such matters.”

The case company also sees the value in sending their employees to courses where they can improve their skills. Part of the culture of the company is to take care of its people and thus they pay for the courses. For instance, IT mentioned that they were looking into taking some courses but had not yet had the time to take them:

“I’m trying to take a course, I haven’t had time due to the current workload”.

An interviewee also mentioned that it was possible to undergo extra schooling if wanted:

“I believe it is possible to do extra schooling, and additional education, via work, but I have not done that yet”.

Additionally, the quality manager had recently taken a course and said the following about providing training to gain new external knowledge:

“Well it is a core value of case company”

Really stressing the importance of providing options when it comes to finding and gaining external generated knowledge. The combination of all these routines, the experience, and the personal motivation of the employees showed the importance of acquiring external knowledge through Identifying and recognizing value of this external knowledge. Another way to acquire knowledge was by learning from and with partners.

4.1.2 Learning from and with partners

According to Tether (2002), close collaboration between at least two entities occurs when learning. Two first order themes could be found to be relevant for learning from and with others based upon the interviews conducted at the case company. Firstly, working with external parties was mentioned in various forms multiple times. As described by Mention (2011) the external partners were less from academic sources like universities and research centers, and more from clients and consumers. Which as mentioned by Ottenbacher and Harrington (2009) is positive since it aids food service firms in developing new food concepts and processes. Secondly, experience on how to do work with external partners and when to do it was also often mentioned.

Almost every interviewee mentioned working together with an external partner to generate either new ideas, products, processes, or knowledge. These external partners had several different forms. During the interview's external partners such as consultants, clients, consumers, suppliers, sub-contractors, and various others were mentioned. The group mentioned most often was consumers, the case company actively set up meetings and panels with their consumers to receive feedback and new ideas from them. This was highlighted by the marketing director who stated that in each location ten brainstorm sessions are held per year with stakeholders, all to ensure that the company is continuously receiving new knowledge and information. This also ensured that the company received input about the local preferences and differences within the country. Furthermore, relevant issues could be identified and tackled faster. For instance, when a sustainability issue occurred it was a consumer that set the first steps towards the implemented solution. Additionally, suppliers actively share ideas with the case company. These suppliers give new knowledge or products that the case company can further evaluate:

“Suppliers always share new products, which is very important, especially given our healthy canteen plan”

Another element that was seen as being important for learning with others was experience. Experience had shown the importance of setting up these learning opportunities. It was through experience that the proper knowledge was extracted from the interactions with others. Furthermore, experience also taught the firm that it not only had to learn from their partners, they also needed to bring something to the table. By bringing new knowledge and information to their partners these partners were more willing to share their knowledge and information:

“You bring something, you are not coming to get something. Bringing is the new receiving”

4.2 Assimilation

After acquiring the external knowledge, the second step in the absorptive capacity process is the assimilation of the externally acquired knowledge. It is the step where this knowledge is analyzed, interpreted, understood, and processed. From the interviews it became clear that two second order themes were the drivers of this part in the process. Namely transferring back the externally generated knowledge into the company and sharing the externally acquired knowledge within the company. These two aspects are discussed in more detail below.

4.2.1 Transferring knowledge back to the organization

The first step in assimilating the externally acquired knowledge is to transfer back this knowledge into the firm. The interviews showed that there were several meta-routines that contributed to this step. More specifically the interaction between sharing, communication style, and firm structure were seen as being key to assimilating the knowledge.

The interviews showed that the main way in which knowledge was assimilated was by sending an email to the proper person up the chain. Due to the firms structure each person knew who they could and should report new ideas to. For instance, a location manager said the following:

“ I tell my cluster manager about it or I tell my district manager about it [...] I inform the quality department about it, [...] I provide new knowledge to marketing, [...] I have the feeling that now they listen much better than before.

This is tied into the previous, acquisition, phase and understanding the value of knowledge and the sharing of it as stated by the general manager:

“the point yeah, the point is always to share information, project, it is not eh, is a false idea that the knowledge skills and then the information is power.”

This leads nicely into the following meta-routines namely sharing knowledge and superior practices.

4.2.2 Sharing knowledge and superior practices

As stated above, the general manager, the highest function within the firm, has stated the importance of sharing knowledge and best practices within the service company. This is done in different ways within the case company. Following are a couple of different options described.

Firstly, a monthly newsletter is sent to the employees keeping everybody up to date on the current developments within the company. The newsletter is not specifically set up to share information and knowledge regarding innovations, but it does contain this type of information. Thereby, providing the employees with fresh knowledge that can be used were needed. From the conducted interviews it was also clear that most people took the time to read the newsletters and liked them. The quality manager stated that:

“information that you provide there (in the newsletter) goes around the entire company”

Additionally, sharing interesting knowledge and information with colleagues was also done by email. This could be knowledge that was crucial to have for one person, but it could also be

knowledge that was not necessarily important to share but might result in innovations down the line. One person even mentioned that:

“I went to food inspirations and had a very interesting workshop. I took notes and summarized it. This I emailed to people that I thought might find the notes interesting.”

Another factor that played a role, at least at the headquarters was the fact that the office had an open floor plan. While only one person mentioned that this was positive for gaining knowledge from colleagues:

“if you need knowledge you just walk over there”.

It was clear from observation and from other interviewees at the head office mentioning the informal talks between employees that this open floor plan contributed to valuable information being shared. Furthermore, the importance of personal (informal) communication was highlighted by several people. This also contributed to knowledge and information being shared throughout the company. Managers travel between the various locations and talk to the people at these locations, maintaining close informal personal connections was seen as being key to the success of the company. By doing this they were spreading information and knowledge between the locations

4.3 Transformation

The third step in the absorptive capacity model is to transform the newly acquired and assimilated knowledge. As per the definition transformation is where knowledge can either be reinterpreted, deleted or added in a new manner (Zahra and George, 2002). This is also the part where dynamic capabilities come into play. By continuously transforming the new knowledge the case company is changing its resource base and achieving competitive advantage, exactly as mentioned by Teece et al. (1997). Only one meta-routine proposed by Lewin et al. (2010), was identified during the interviews for this stage in the process. Namely, the internal selection routines. These are the decision-making processes that a firm puts in place to select which projects and activities to invest in and how to allocate the required resources to these projects and activities.

4.3.1 Internal selection routines

Crucial to this meta-routine was the firm structure. Interviewees indicated that due to the firm structure it was clear whom was responsible to transform certain ideas into workable projects for the company. As one interviewee put it:

“I know very well what my decision-making power is regarding these subjects, and what I cannot decide I place in the hands of the proper person”.

Another person stated he had power to implement changes, yet he still shared these with upper management:

“it is a notification of what is going to happen, not a notification that they (upper management) need to make a decision”.

Thus, it is clear that the firm structure, and the knowledge of whom can make what decision is important for the selection process of what new knowledge to transform.

Pilots seemed to be the main routine used across the case company when it came down to deciding what knowledge to transform or utilize. Both process and product innovations were first tested in a small scale to look at the viability of the new idea. For instance, after a discussion with one of the contract givers, the company decided to test having local food entrepreneurs, called local heroes, stand in the counters. This was a new form of experience, and thus a new type of service, for the end-consumer. The company ran a pilot in one location and after success it provided this new type of experience at various other locations. Or as the food scout put it:

“a local hero does not do a pilot, a local hero is a pilot, we want to know if it works”.

Also, on the product innovation side the company ran a bunch of pilots prior to rolling out the product over all the locations. Running from new food products to new cleaning products, pilots were key to deciding what information, knowledge, and innovations to continue with. The results of the pilot would determine the fate of the projects.

“At the WUR there was a pilot with vegetarian shawarma, [...] and it will be coming back into the assortment.”

If after the pilot the product or process was deemed to be a success, then it would be exploited on a larger level.

4.4 Exploitation

To finish the absorptive capacity part of the proposed model is what Zahra and George (2002) call exploitation, to use routines that can extend, refine, or leverage existing competencies or the create novel ones by using the acquired and transformed external knowledge for the firm's own operations. The interviews conducted showed that one meta-routine was responsible for this, reflecting, updating, replicating (Lewin et al., 2010). This will now be analyzed in more detail.

4.4.1 Reflecting, updating, and replicating

As discussed during the transformation phase, pilots form a crucial role in deciding what new knowledge to use. If new ideas passed the pilot stage, then these would be implemented throughout the firm's operations.

However, even after rolling out new innovation's routines were in place to reflect upon them. Key is looking at the sales data generated by the new ideas, both service and product related innovations were evaluated mostly on this point. Sales data was mentioned as being crucial to understanding whether something was working as expected. As the general manager put it:

“they can give to you honestly the data, the feedback about, the lack of revenues, they have like monitoring activity. Yeah. if they work in correct way, they are like sensor”

or as the purchasing manager mentioned:

“introducing a new food product is fun, but you don't know if it will work, so we test it and look at the sales data”

So, this routine of testing and looking at the sales data is important to the food service firm.

Furthermore, feedback is actively sought after. The case company has various routines by which they seek for feedback so that they can reflect and update. One example of this was mentioned by the food scout:

“via a platform and a website, we can connect to the entire community and receive feedback”,

another example is that tablets with feedback software are installed in various locations so that the consumers can tell the company what they think about improvements. External parties are also hired to conduct surveys for the company:

“we conduct a satisfaction research, from which we receive much feedback”.

Furthermore, the case company also used this stage in the process to identify missing knowledge in the company. In certain cases, this even led to them going out and finding new personnel (hiring them) to fill the required knowledge gaps. This is how the current operational manager came to be at the company, his knowledge and experience was seen as a way to increase the firm’s knowledge and therefore he was added to the team. Showing clearly that indeed as Cohen and Levinthal (1990) mention absorptive capacity coming from prior knowledge of individuals can be found by investing, in this case hiring, in it. The reflecting and updating that was done by the case company is also what makes the entire absorptive capacity process iterative, it circles back to the acquisition phase, so that the company can keep improving itself.

4.5 Meta routines not mentioned

During the interviews conducted there were two meta-routines suggested by Lewin et al. (2010) that were not mentioned as being relevant for the case company. The first one was facilitating variation. According to Lewin et al. (2010) this internal meta-routine exists out of routines set up to encourage the exploration of new ideas within the firm. Despite actively seeking external knowledge and ideas and freely sharing these new insights within the company, there was no indication as to the case company actively setting up routines to explore internal ideas. Whether this is case company specific or if this is sector wide in the service industry could be an interesting starting point for future research.

Secondly, managing adaptive tension was also not observed as taking place within the case company. Not a single interviewee mentioned that the company looked at other companies to set up goals and expectations. In fact, the case company mistrusted information they would receive about competition, as the general manager put it:

“For the for the competitors is difficult to find correct information sometimes. No sometimes, always it's difficult because the false information”

The case company rather set their own goals and targets based on their competitive advantage without looking to much at what other companies in the field were doing. So, while the company did look at external parties for ideas and knowledge, the company did not use external

pressure to set targets. This clearly being different from what Lewin et al. (2010) and Chalmers & Balan-Vnuk (2012) found to be case at manufacturing firms. To clarify, competitors and other food service firms were looked at during the acquisition phase to gain new insights and knowledge. However, setting goals and targets based on information gained from competitors was not witnessed at the case company.

4.6 Overarching factors

As can be seen in the previous discussion there are several factors that are mentioned to be important during multiple stages of the model. Among these factors are personal motivation, experience, firm structure, and creating connectedness. All of these being mentioned by the interviewees as being important during different meta-routines. Personal motivation was mentioned as being a driving factor during the acquisition phase, aiding in finding relevant knowledge for the firm.

“I personally try to gain knowledge into the newest concepts”

Similarly, experience was mentioned as being crucial for the external routines: identifying and recognizing value of externally generated knowledge and learning from partners. While also being considered important in the exploitation phase, more specifically in the reflecting stage which would end up looping back to the acquisition phase.

“That what I take with me in this first year at the case company is just my backpack of experience. I am, for the record, 55 years old, so I have had multiple functions within operations.”

Whereas, interviewees alluded to the structure of the firm as being important during the internal routines. Due to the firm structure it was easier to share and transform new knowledge into workable innovations.

“I know very well what my decision-making power is regarding these subjects, and what I cannot decide I place in the hands of the proper person”.

Closely linked to the firm structure is the effort put into creating connectedness between the various locations and the personnel. This was witnessed in several ways. By sending out a newsletter to keep everybody informed about events happening in the firm, to various managers and directors being on the road to meet with people at the different locations across the country.

4.7 The overall model

Combining all the findings based on the interviews held at the case company, the following model was constructed for service firms. Absorptive capacity being a stepwise process that is iterative with its underlying meta-routines and overarching factors with the result being open innovation.

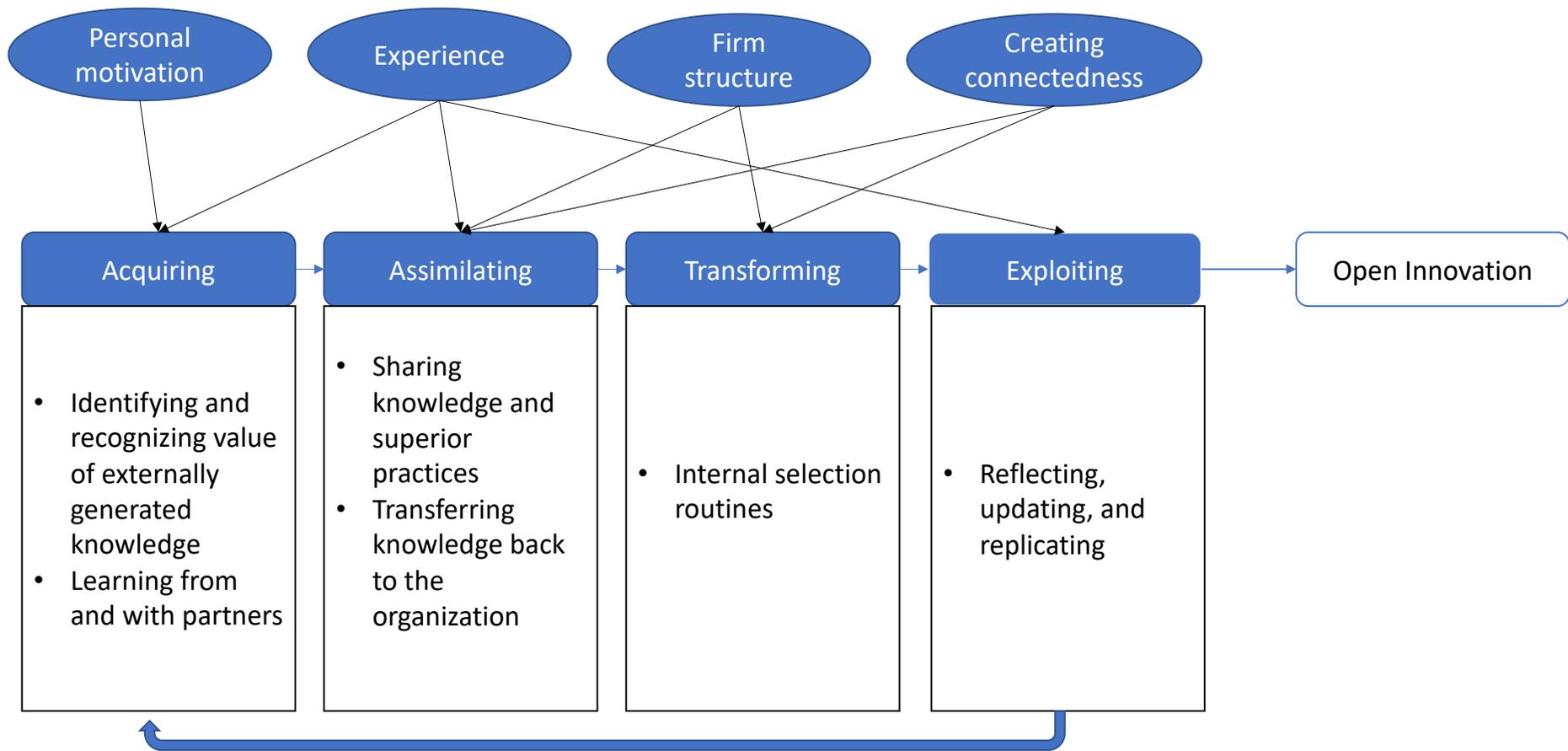


Figure 5. meta-routines of absorptive capacity in the service industry

5. Conclusion

Based on the literature review the aim of this study was to tackle the various research gaps that helped in forming the research question for this thesis, namely: *What are the micro-foundations of absorptive capacity in the food service industry?* This was done by conducting semi-structured interviews in a single food service company. Based on these interviews several things were discovered,

Firstly, given that innovation in service industry is regarded as more complex than innovation in manufacturing industry (Ottenbacher and Harrington, 2009), the value of absorptive capacity in the service industry needed to be understood. Based on the findings of the interviews the importance of absorptive capacity in the service industry became clear just as it had already been highlighted as being important for manufacturing and R&D intensive industries (Lewin et al, 2010; Spithoven et al.,2010). Especially the statement of the general manager, quoted in the findings section, proved the value of externally generated and implemented knowledge. Showing that it crucial to possess absorptive capacity to use open innovation.

Given this importance, the results from the interviews formed a model of the micro-foundations of absorptive capacity and the additional factors that lead into open innovation. The model created had multiple similarities to the model proposed for manufacturing firms by Lewin et al. (2010), yet some differences were witnessed. For instance, not all meta-routines proposed were found to be relevant for the service firm interviewed and important overarching factors were found.

Interestingly enough, two micro-foundations were not found to be relevant for food service firms. These were *facilitating variation and managing adaptive tension*. Not a single interviewee mentioned routines that could be linked to these micro-foundations.

The model created during this paper also showed that there was a path from absorptive capacity to open innovation implementations. Absorptive capacity starts with the external micro-foundations in the acquisition phase and moves on with the internal micro-foundations in the following three phases, the assimilation, transformation, and exploitation phase. After the exploitation phase open innovation has occurred and the model circles back to the acquisition phase using the knowledge gained in the previous phases to start the entire process over again. The company however is never only running in one phase, all phases are witnessed throughout the firm at different moments. While one person is acquiring new knowledge by learning with a partner for instance, another team is transforming knowledge setting up a pilot.

5.1 Managerial implications

Based on the findings of this study several managerial implications were found that can be used to strengthen a company's absorptive capacity from the micro-foundation perspective. These can be used by managers and firms to ensure that the full potential of absorptive capacity is used with the firm.

Firstly, the importance of creating a positive working and learning environment became clear. Among the additional factors witnessed in the case company were personal motivation and creating connectedness. Ensuring that these factors occur aids in absorptive capacity working properly in a firm.

Secondly, maintaining proper relationships with stakeholders also aids with absorptive capacity. Stakeholders, like consumers and suppliers, can become sources of knowledge or learning partners. Thus, creating opportunities to meet with stakeholders and to actively discuss topics with them can become a valuable resource to service firms trying to optimize their absorptive capacity.

5.2 Future research

As discussed not all meta-routines discussed by Lewin et al. (2010) were found to be relevant for the case company interviewed. This opens up the question if this was firm specific or if all service industry companies do not use the meta-routines. Thus, future research could look at the two missing meta-routines, facilitating variation and managing adaptive tension.

Secondly, while firm structure was seen to be an important factor for absorptive capacity, firm size was not looked at during this project. However, based on the fact that personnel communication and connection was so important for the case company, it might be interesting if this is the case for a variety of different sized firms.

Thirdly, the findings of this paper can be strengthened further by more research related to the service industry with regards to absorptive capacity and open innovation. As mentioned frequently throughout the paper research in this field is often focused on manufacturing and R&D intensive industries, whereas the service industry is often neglected. Hopefully, this paper has opened up the pathway towards more research.

5.3 limitations

Like the majority of the empirical research done on absorptive capacity, this research used a static approach. As mentioned by Volberda et al. (2010) longitudinal studies should be done, however in terms of feasibility for a master thesis this was deemed appropriate and feasible.

Secondly, as previously mentioned, only one company was looked at. Thus, making the generalizability of the findings impossible. However, hopefully the findings provided in this paper can trigger further research to be done in this field.

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Appendix

Interview protocol

Introduction

We are ... from Wageningen University and are currently working in conjunction with XXX. Both of us are writing our thesis and have an interest in how core strategic decisions are made, how new knowledge is gained, how information is spread within the company, and the underlying routines that concern these matters. To find an answer to all these questions we are interviewing various people. We would like to thank you for your time and the contribution to our research. The interview will last around one hour, we will begin with general questions and from there on move into the subjects of interest. Do we have your permission to record the interview? All results will be highly confidential, and anonymous results will only be shared with Wageningen University and XXXt.

General questions

- What is your function within the company?
- What activities do you conduct for your function?
- How long have you worked in this function?
- How long have you worked in this company?
- Where did you work before XXXt? What was your function there?

Structure XXX

- How many people are involved in your department?
- Who is involved in your department?
- Who does what? (function)
- Experience // years of functioning
- What are your governance mechanisms (e.g. meetings, mailings, conferences)
- How often do you have such governance activities?
- With whom do you have these activities?
- Why these people?
- How to prepare for such activities? (e.g. meeting → read minutes?)
- Opinion about governance mechanisms/activities
- Suggestions for improvement for governance mechanisms/activities

Routines

Given that absorptive capacity results in superior innovations it is of great interest to understand the building blocks (i.e. meta-routines) that make up absorptive capacity (Wuyts & Dutta,

2012). All questions are constructed in such a way that the 4 main elements (acquire, assimilate, transform, and exploit) of absorptive capacity are asked after (Zahra & George, 2002). Furthermore, the underlying routines (meta-routines) that make up these main elements are looked for (Lewin et al., 2010; Chalmers & balan-Vnuk, 2012). In this section I would like to focus on routines that are in place to find and use new information and knowledge.

(Acquire) Information and knowledge

- How do you find new knowledge and information for the ?
 - o Market
 - o Customer
 - o New operation
 - o New product
 - o New technology
 - o New process
 - o How do you update competencies
- Personally do you have any specific routines to do this
 - o Environment
 - o How often
- What routines/processes does the organisation use are used when trying to find new ideas/knowledge for accomplishing the goals of innovation?
- Do you focus on internal or external knowledge?
- Are routines set up to learn from external sources? (suppliers, students,...)
- who provides new information?
- does everybody have an equal say?
- Are all these methods enough to gain and maintain relevant knowledge?
 - o Do you miss anything?
 - o Who should be providing this information?
- And what is your opinion about the current way of working?
- What can be done better

Assimilate

Once new knowledge and information is acquired how does it get shared with various people within the company?

Who do you report to

Who do you share with

How do you do this?

what type of meetings

Formal ways? (meetings, trainings, ...)

Informal ways?(e.g. Water cooler, lunch,...)

Are specific routines set up to share superior practices?

What routines are in place to decide what ideas to invest time and money in?

Do you believe this is the proper way of working?

Any suggestions for improvements?

Transforming

How does the company go about utilizing new ideas? (transforming it?)

How does the company test new ideas? (e.g. pilots)

How does the company include feedback? (e.g. self, customer, supplier,...)

Who provides this feedback

How does the company combine new ideas with existing products/processes?

Exploit and reflect

Finally the new idea has resulted in a new/improved process/product how do you (exploit) make sure that it becomes a success?

How do you measure success of innovation/ new implementations

Are there moments or routines which are used to reflect so that you can learn from past experiences? (want to find if there is the meta-routine reflecting, updating, replicating; Lewin et al., 2010)

Is there a central point to reflect, is there a place or person that in charge of this.

What does the company then look back on?

Do you ever look at the competition when reflecting on the implemented innovations? If so, what aspects are looked at?