

**INCREMENTAL INNOVATIONS BY THE OVEN: INFLUENCE OF HIGH  
ABSORPTIVE CAPACITY AND MODERATE ENTREPRENEURIAL ORIENTATION  
ON FIRM PROFITABILITY**

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**ABSTRACT**

To observe the interplay between absorptive capacity (ACAP) and entrepreneurial orientation (EO), the present study analyzes 6 cases selected based on a generalizable quantitative data and a cluster analysis method. Consequently, the comparative case study revealed five common processes and practices such as (1) appreciation of rich customer interaction, (2) agile external knowledge processing (3) informal daily dialogues (4) experimental product development (5) cost- and customer value driven opportunity capture. Contributing to the literature on ACAP and EO, the present study sheds light on firm profitability driving practices that underlie the interplay between EO and ACAP in the context of new product development. Managerially, the study provides guidelines to facilitate utilization of customer relationships of an industrial company to their full extent through the interplay between ACAP and EO.

**Keywords:** Entrepreneurial orientation, Absorptive capacities, Interplay, Profitability, Innovation, customer relationship

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## INTRODUCTION

In search of innovation and higher performance, firms have been argued to benefit from organizational characteristics, such as absorptive capacity (ACAP) and entrepreneurial orientation (EO). Despite these organizational phenomena have been found affecting on organizational performance separately, these processes and activities may impact performance in combination reflecting the engaged strategic posture (Wiklund & Shepherd, 2003). Creating a combination of activating, entrepreneurial posture and organizational knowledge utilization, EO and ACAP has been seen creating a potential combination for long-term prosperity (Wiklund & Shepherd, 2003). Thus, as EO and ACAP may interact for higher performance, organizations should manage the interplay between EO and ACAP.

Recently, studies have brought these two concepts together and found positive interaction effects on firm performance. Wales, Parida and Patel (2013: 630) found EO to moderate ACAP-growth relationship highlighting that “EO represents an important means through which firms can increase the financial benefits of their ACAP.” Moreover, studies have found ACAP to affect EO-performance relationship (Engelen, Kube, Schmidt, & Flatten, 2014; Li, Huang, & Tsai, 2009; Patel, Kohtamäki, Parida, & Wincent, 2014; Real, Roldán, & Leal, 2014; Sciascia, D’Oria, Bruni, & Larrañeta, 2014; Wang, 2008). Whereas prior research have presented numerous possible reasons for interaction between ACAP and EO, no in-depth knowledge on the actual mechanisms that underlie the interplay has not yet been presented. Thus, the missing in-depth evidence about the interplay between ACAP and EO calls for more empirical research by using a qualitative, comparative case approach that enables a closer look at the mechanisms and practices.

To fulfill the research gap this study utilizes a comparative case study approach, first identifying high performing cases based on a cluster analysis from a quantitative data from Finnish food manufacturing companies. The study aims to shed light on the mechanisms and practices in the context of new product development where the interplay between ACAP and EO is manifested in. In addition, this study provides an in-depth analysis about the interplay between the individual dimensions of both constructs, and provides further insight on the multidimensional nature of ACAP. Finally, the study offers implications for managers by introducing practices and routines utilizing customer relationships in organizations with above average profitability.

## THEORETICAL BACKGROUND

### ABSORPTIVE CAPACITY AND FIRM PERFORMANCE

Absorptive capacity, originating from organizational learning literature (Cohen & Levinthal, 1990), refers to processes and routines facilitating knowledge acquisition, assimilation, transformation and exploitation (Zahra & George, 2002). ACAP is commonly considered as a capability enabling a company to adapt the changing operational environment through utilization, reconfiguration and development of its resource base (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997; Winter, 2003). Such capability have been claimed to facilitate firm’s diversification, innovations, competitive advantage and performance (Cohen & Levinthal,

1990; Lane, Koka, & Pathak, 2006; Tsai, 2001; Zahra & George, 2002). Most importantly, capabilities that are dynamic in their nature, have been argued to enable the possibility to command above industry average economic rents that drive high profit performance (Barney, 1991).

The concept of ACAP contains outward-looking and inward-looking elements that have different roles in new product development, new technology implementation and new capability generation efforts (Engelen et al., 2014). The first two dimensions, knowledge acquisition and assimilation, may be seen to serve as outward-looking components. As a dimension of ACAP, knowledge acquisition is defined as organization's ability to identify and obtain external knowledge that may be valuable to the organization (Zahra & George, 2002). Knowledge acquisition activities have an important effect on how fast and effectively it is capable to acquire external knowledge from various sources (Todorova & Durisin, 2007). Knowledge acquisition does not by itself influence on organizational performance, if organization is unable to exploit knowledge ( Lane, Salk, & Lyles, 2001). Therefore, acquisition affects organization's performance indirectly through other dimensions, which on the other hand, would be unable to function properly without active acquisition of knowledge.

Knowledge assimilation as the second outward-looking element refers to ability to interpret, understand, and internalize the information acquired from various sources (Engelen et al., 2014). Assimilation occurs through collective learning activities where individuals and groups interact to discuss and exchange opinions, beliefs, and individual experiences, challenge each other's perspectives and present constructive criticism (Zollo & Winter 2002). Due to the lack of assimilation capabilities valuable knowledge may be overlooked, if acquired knowledge significantly differs from the existing knowledge base of the recipient and knowledge cannot be easily comprehended (Zahra & George, 2002). Deliberate collective learning efforts can also enhance the organization's awareness of performance implications of individuals' actions improving the quality of daily decision making (Zollo & Winter, 2002). Similarly to the knowledge acquisition activities, assimilation does not directly generate profits, but rather it generates costs. However, both dimensions are mandatory evil of ACAP processes and thereby by optimizing the costs of the acquisition and assimilation activities companies can enhance the cost-benefit relationship of ACAP (Wales, Parida, & Patel, 2013).

Transformation dimension of ACAP, which is tightly related to assimilation, refers to organization's ability to utilize assimilated knowledge to refine and develop its routines, processes, and practices that facilitate combining of the recently acquired and assimilated knowledge to prior existing knowledge base (Todorova & Durisin, 2007). Prior knowledge may be replaced or merged with recently acquired knowledge. By combining and transforming knowledge from various independent sources and changing the characteristics of knowledge, the organization may identify new business opportunities (Gebauer, Worch, & Truffer, 2012; Zahra & George, 2002). Organizations with higher transformation abilities are capable of recognizing compatibility and merge pieces of knowledge that initially seem incompatible (Todorova & Durisin, 2007).

The fourth dimension of ACAP refers to organization's ability to apply transformed knowledge into commercial ends (Cohen & Levinthal, 1990). Ability to exploit knowledge consists of

routines and practices that allow organization to utilize knowledge for new competences, routines and product ideas (Zahra & George, 2002). If missing the exploitative capabilities, a firm may be incapable of translating their acquired knowledge into new products, services, processes and organizational forms (Todorova & Durisin, 2007). Therefore, capacity to exploit knowledge is central for capturing the benefits of prior ACAP activities.

In summary, even though ACAP is considered to improve firm performance, it is often argued that none of ACAP's four dimensions are individually able to secure the long-term profit performance (Jansen, Van Den Bosch, & Volberda, 2005; Zahra & George, 2002). If an organization has a strong capacity for knowledge acquisition and assimilation, but is missing routines and practices for transformation and exploitation, the firm will most likely lose the potential benefits that could have been derived for acquisition and assimilation. Similarly, if the organization invest heavily in transformation and exploitation routines but lack sufficient competencies for acquisition and assimilation, the firm may generate profits in a short term, but fall into competency or exploitation trap in the long run (Levitt & March (1988). Therefore, it is critical for the firm's success and survival to maintain and develop their absorptive capacities to reinforce and refocus their knowledge based resources (P. J. Lane et al., 2006).

### **EO AND FIRM PERFORMANCE**

Being defined as a strategic posture characterized by willingness to engage entrepreneurial behavior (Wales, Parida, et al., 2013), most commonly deployed conceptualization of EO consist of three dimensions: proactiveness, innovativeness and risk-taking (Miller, 1983; Rauch et al., 2009). Whereas, EO has demonstrated having positive effects on variety of performance measures (Johan Wiklund & Shepherd, 2011) including effects such as higher profit margins, faster growth rate, or enhanced non-financial performance metrics such as innovation performance or goal achievement (Kollmann & Stöckmann, 2014), studies have also questioned the universally advantageous role of EO, as it may increase experimentation (Johan Wiklund & Shepherd, 2011). Instead of universally enhancing performance, EO may increase variety in terms of innovation and performance outcomes. Studies have also argued for non-linear EO-performance relationship (Dai, Maksimov, Gilbert, & Fernhaber, 2014; Wales, Patel, Parida, & Kreiser, 2013) suggesting that until certain point EO is beneficial but at very high levels of EO the affect may become negative.

Prior research has found strong positive relationship between proactiveness and firm performance (G. T. Lumpkin & Dess, 2001; D Miller, 1983; Danny Miller & Friesen, 1983). Multiple studies have addressed the value of first mover advantage, to gain a head start before their competition when presenting new products or services, and thus generate brand recognition and skim notable profits before other actors join the market (Hughes & Morgan, 2007; Lee, Lee, & Pennings, 2001; G. Lumpkin & Dess, 1996; G. T. Lumpkin & Dess, 2001; Wiklund, 1999; Johan Wiklund & Shepherd, 2003; Shaker Zahra & Covin, 1995). In addition, proactive behavior enables an organization to achieve advantage through agile decision making as these organizations are able to foresee future market demands, or additionally take actions in order to shape the future demand or the operational environment to be more suiting for the organization itself (Lumpkin & Dess, 2001; Kollmann & Stöckmann, 2014; Miller & Friesen, 1978).

Entrepreneurial firms are recognized to be willing to adapt novel ideas and engage new ways of operating and EO has been found to have positive impact on new product development processes that drive product novelty and meaningfulness (Hong, Song, & Yoo, 2013). In addition EO has been found to facilitate exploitative capabilities, which further increase product development speed, product innovativeness and financial performance (Chen, Li, & Evans, 2012). With innovativeness organizations can stay ahead of competitors, gaining it a competitive advantage that can lead to improved financial performance (Wiklund, 1999). Innovativeness is important especially to new ventures that would have to compete head-to-head with more mature competitors (Lee et al., 2001). In mature companies innovativeness can still generate innovations that revolutionize an industry, yet such phenomenon is not as common (Jeffrey Covin & Slevin, 1990). However, it is notable that even though highly innovative offerings and ideas have been found to drive growth performance, they do not always guarantee profitability (Brüderl & Preisendörfer, 2000). Implementation of innovations tend to generate ex ante costs, which may lead to decreased short term financial performance or in case of failure negative long term performance as well.

Tendency to take risks is a characteristic central to entrepreneurial behavior (Jeffrey Covin & Slevin, 1990). Any large investments on innovations are risky due to uncertain outcomes. Yet, risky investments are central for implementation of company strategies, and to avoid competency traps. Risky resource commitments have been found facilitating high returns for their investments (Lee et al., 2001) even though the relationship between risk-taking and performance is equivocal (G. Lumpkin & Dess, 1996). Yet, it has been suggested and to certain extent evidenced that risk-taking increase the probability of higher success and bigger failures, that is variety with regards outcomes (Johan Wiklund & Shepherd, 2003). In addition, organizations with high tendency towards risk-taking may lead to ignorance towards in-depth analysis when such is needed, and thus preventing firms to identify and eliminate existing weaknesses in their products, services, technologies, and routines (Kollmann & Stöckmann, 2014). If risks are not efficiently recognized and appropriately managed, risk-taking may lead to negative performance outcomes.

#### **INTERPLAY BETWEEN ACAP AND EO AND THE IMPACT ON FIRM PROFITABILITY**

Prior research has provided evidence on positive effects of ACAP on EO-performance relationship (Engelen et al., 2014; Patel et al., 2014), but also on positive impact of EO on relationship between ACAP and performance (Wales, Parida, et al., 2013). It appears evident that to transform entrepreneurial disposition into actual entrepreneurial behavior firms must possess supportive resources and capabilities (Wales, Patel, et al., 2013), but similarly companies already possessing advanced learning and knowledge processing capabilities such as ACAP may benefit from increasing alertness for new market opportunities, willingness to innovate new products and services, and tendency to take risks on attractive opportunities, that is typical to entrepreneurial firms (Kollmann & Stöckmann, 2014; G. Lumpkin & Dess, 1996).

Whereas prior studies have reported EO interact with external knowledge acquisition by adding interest in identifying new opportunities and tendency engage in entrepreneurial opportunities

(Zhao, Li, Lee, & Chen, 2011) and facilitate knowledge-creation routines (Kreiser, 2011), high ACAP facilitates the increased aspiration to recognize emerging market opportunities through efficient market knowledge acquisition processes and practices (Zahra & George, 2002). Equipped with ACAP, entrepreneurial firm may utilize external knowledge sources to find increasing number of opportunities. Lack of ACAP can cause failure in recognizing most potential opportunities (Covin, Green, & Slevin, 2006; Zahra & George, 2002) or most profitable customer segments (Engelen et al., 2014), and thus limit firm performance. Moreover, in search of first-mover advantages, proactive and innovative firms benefit from increased knowledge acquisition enabling firms to pursuit opportunities before the time frame of an opportunity closes or lose its attractiveness (G. Lumpkin & Dess, 1996; G. T. Lumpkin & Dess, 2001) (Engelen et al., 2014).

Increased level of EO also facilitates knowledge assimilation processes as proactive firms are open for innovative ideas (Alegre & Chiva, 2013; Wang, 2008) and more responsive to knowledge acquired from their external environment (Wales, Parida, et al., 2013) decreasing the “not-invented-here” resistance. Similarly, lack of ACAP routines such as strong communication and co-operation practices may lead to communication barriers and conflicts (Engelen et al., 2014). Vice versa, strong communication and co-operation routines enable firms to share acquired knowledge effectively throughout the organization. Together proactiveness, willingness to innovate, and assimilation practices improve ability to recognize the value of the acquired knowledge (Engelen et al., 2014; Patel et al., 2014). Dissemination of knowledge around a firm can also provide diverse perspectives on the opportunities and even add value to the opportunity (Engelen et al., 2014). Thus, through assimilation routines proactive firms are able to rapidly share and interpret market information to further develop routines and practices and innovate new product or service offerings.

Since organizations evaluate acquired knowledge and opportunities based on their existing knowledge-base, ACAP plays an important role in transforming acquired knowledge into meaningful applications (Cohen & Levinthal, 1990). Ability to utilize prior experiences and draw right conclusions from the acquired knowledge decrease possible risk of ignoring high value opportunities (Covin et al., 2006; Zahra & George, 2002) but also improve the ability to realistically evaluate and control the actual risks involved. Failure in assessing the risks, associated with entrepreneurial activities, may lead to overestimation of the risk (Engelen et al., 2014). Due to the over assessment of the risk, the organization may lose the motivation to pursue such entrepreneurial activities leading to lost high value opportunity. Similarly, interpreting information and knowledge on the risks correctly enable firms to minimize and manage them and enhance the perceived controllability (Kreiser, 2011; Patel et al., 2014).

Allowing firms to utilize their knowledge-based resources more thoroughly to exploit new market opportunities (Johan Wiklund & Shepherd, 2003), EO enhances efforts to transform their knowledge into new resource bundles to create novel customer value (Wales, Parida, et al., 2013). Risk-taking, associated with entrepreneurial firms, facilitates recombination and learning of non-routinized trial-and-error knowledge (Patel et al., 2014). ACAP may enhance the entrepreneurial firms’ ability to recognize quickly, when its innovative ways of operating or new offerings proactively delivered to the markets do not fit customer requirements (Engelen et al., 2014). Being able to identify flaws in their new offerings, the firms make required improvements

for the products to increase customer appeal. Innovative products are often not perfect with the first try, but they can be improved by further updates following the release. Since the new entrepreneurial product offerings are associated with imperfection, the entrepreneurial organizations can enhance their performance by adapting ACAP routines and increasing the degree of their fit to customer preferences (Zahra & George, 2002). Thus, implementing ACAP routines a firm with entrepreneurial posture may be able to improve its performance.

## DATA AND METHODOLOGY

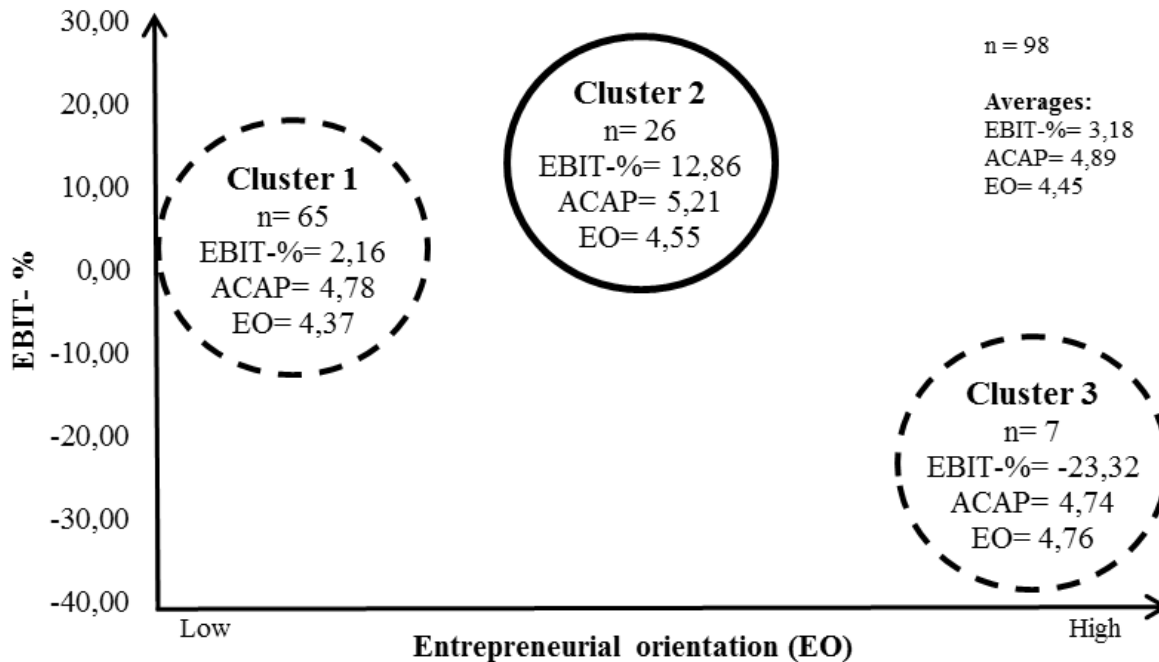
This study builds on multiple case study approach by investigating the practices and mechanisms that constitute high performing firms' absorptive capacity and reveals the involvement of the increased level of entrepreneurial orientation. The study introduces six systematically selected company cases through in-depth analysis based on unique data primarily collected through thematic interviews.

### CASE-SELECTION AND SAMPLE

The case companies were selected based on quantitative data set collected through survey questionnaire and linking the primary data with financial secondary data accessed through ORBIS database. Thereafter, cluster analysis was applied to the combined data. Performing cluster analysis on quantitative data and selecting cases based on the results has been a technique recently receiving increasingly interest among scholars (Huikkola, Ylimäki, & Kohtamäki, 2013; Piekkari, Plakoyiannaki, & Welch, 2010).

As a first step, we run a list of 343 Finnish food manufacturing companies employing five or more people from ORBIS database. After, we called to each of the company reaching 293 of them by phone and asking permission to send them questionnaire through email. 255 CEOs and managers agreed to give their email addresses and after the phone call and two email reminders, we managed to get 118 responses of which 98 had fulfilled the questionnaire completely, had left contact information enabling us to link the answer back to the financial data and had required financial performance data (EBIT-%) available.

Thereafter, we run two-step cluster analysis with two of our validated retrospective variables ACAP and EO and one objective financial performance variable, EBIT-% average of three years (2010, 2011 and 2012), suggesting three clusters. Then, we run K-Means cluster analysis to plot those three clusters indicating one of them clearly outperforming the others (see Figure 1). The first cluster on the left represents a group of companies demonstrating below average profitability, ACAP and EO. The high performing cluster (cluster 2) representing very high values in EBIT-% and ACAP and slightly above average levels in EO consisted of 26 companies, of which we selected six cases reporting above average values in all of the variables. Third cluster represents companies with highly negative EBIT-%, below average ACAP and the highest EO.



**Figure 1.** Three clusters identified through K-Means cluster analysis on quantitative survey data of 98 Finnish food manufacturing companies. Selected cases belong to cluster 2.

#### DATA COLLECTION PROCESS

Interviewees were selected based on their familiarity on the knowledge transfer activities and mechanisms related to the new product development processes. Taken into consideration the industry and the size of the companies (small and medium size) the respondents were selected among CEOs, development managers and production managers. The face-to-face interviews lasting one and a half hours on average were recorded with the permission of the interviewees and thoroughly transcribed by a professional agency specialized in such service. Two researchers conducted the interviews by using identical semi-structured interview templates to encourage open dialogue on topics closely related to the knowledge acquisition, assimilation, transformation and exploitation in the context of new product development. The interview data consists of 6 confirmatory phone interviews and 11 face-to-face interviews leading to 17 interviews in total.

We started the interview data collection process by calling the six selected companies and had a brief phone interview with the CEO to confirm that the companies are active in terms of new product development and consider their selves efficient in introducing new products to the markets. Then, we scheduled interviews with two representatives being aware of new product development activities in each company. Out of 12 scheduled interviews with CEOs and managers, finally 11 were executed.

The interview template was designed to reveal the actual practices, mechanisms and activities that contribute to the external knowledge acquisition, assimilation, transformation and

exploitation related to the new product development efforts. Interviewees shared their experiences openly and provided multiple real life examples of how information flows, ideas develop and different people contribute eventually leading successful new product introduction. The detailed descriptions of how the case companies operate also provided rich source of information on prerequisites and prevalent attitudes driving the financially successful new product development enabling us to interpret the influence of increased entrepreneurial posture. Obviously, as all the interviewees hold senior position, their answers may be partly influenced by prior work experience making the answers and descriptions interpretative. However, the practical and detailed examples confirmed that the shared insight mainly arise from experiences on knowledge processes in the case companies not from possible prior experiences in other companies or contexts. Further, possible respondent bias was controlled by comparing the answers and descriptions of both respondents in each company to enhance reliability of the study.

### **DATA ANALYSIS**

Data analysis was executed through simultaneous interpretation of the existing literature on ACAP and EO and the fully transcribed interview transcripts. Two researchers examined thoroughly all the transcripts organizing the data into matrices dividing observations of practices, activities and mechanisms related to new product development by the dimensions of ACAP and the evidence indicating the involvement of EO. As part of matrix development process, researchers got together repeatedly to discuss similarities and differences on their findings and read through the transcripts for several times and cross-checked each other's observations to ensure that the data was thoroughly and correctly interpreted (Eisenhardt, 1989). Along the process, the depth of analysis evolved from descriptive interviewee level to interpretative company and cross-company level analysis providing insight into the interplay of the main concepts.

In the beginning, each of the 11 interviews was organized into a separate observation matrix and then findings were matched and merged at into 6 company level matrices. All the observations were referenced with the interviewee name and transcript page number to facilitate cross-check process and to further analyze the possible existence of ACAP and EO interplay. Within-case analysis was built on these company level observations and complemented with interviewees' description of their business model and the information available on companies' websites and ORBIS database. Several within the research team discussion sessions were organized to create holistic overall understanding of the data and to evaluate similarities and differences in practices, activities and mechanisms and the existence and the nature of ACAP and EO interplay (Huberman & Miles, 1994). Further, all 6 company level matrices were brought together into a single matrix. Observations were organized into themes based on their similarity. Themes failing to indicate clear and substantial cross-case support of their importance in achieving excellence in new product development were dropped out.

The accuracy of the observation interpretation for both within-case and cross-case analysis was controlled through transcription cross-checks by other team members to ensure that all the relevant practices, activities and mechanisms were identified and the interviewee expressions revealing the involvement of entrepreneurial proactiveness, innovativeness and risk-taking were recognized. To confirm our results we deployed data triangulation by exploiting various data sources such as quantitative survey data, interviews, websites, secondary financial database

(ORBIS) and data auditing technique meaning that two researchers read all the transcripts thoroughly to ensure data interpretation accuracy (Eisenhardt, 1989; Huberman & Miles, 1994).

## RESULTS

### CASE DESCRIPTION AND WITHIN-CASE ANALYSES

#### CASE INDUSTRIAL MEAT COMPANY

Operating in Finnish and Swedish markets this company provides consumers cold smoked products and salamis. Interacting with domestic and international distributors, and following the public discussions, the company utilizes the gathered knowledge to create additive free, low fat, and organic products to satisfy growing demand from nutrition aware consumers. The company has developed effective product development processes in contrast to their competitors, which seem to be capable of transforming new ideas into original products faster than majority of their competitors in the market.

#### CASE CITY BAKERY

This case company that is operating as bakery specializes in a niche of Mediterranean and French breads. The company's products are available for consumers from several grocery stores and company's regular marketplace booth. Furthermore, the products are actively sold for numerous hotel, restaurant and catering customers. The company cooperates with their customers to comprehend consumer consumption preferences in order to create new product offerings that are more appealing to the consumers. Combination of highly productive processes, and effective product development the company is capable of competing with other actors in the markets with better price to quality than their competitors.

#### CASE ADDITIVE FREE BAKERY

The company operates several bakeries producing among others gluten free products. The company's products are available on their three own locations and numerous grocery stores due to the operation with national grocery store chains. Additionally, the company offers its products to some hotel, restaurant and catering (Horeca) customers that request specific kind of bakery products for their menus. The company frequently creates new experimental products that are available in their own locations, assessed based on their popularity and further developed based on the received consumer feedback. Viable products are further marketed via grocery store chains.

#### CASE PIZZA COMPANY

The company operates in four different sectors: Restaurant business, Horeca sales, grocery store sales, and solution sales. The company produces bakery products for Horeca customers, offers convenience foods and sauces for consumers via grocery stores. Additionally, it has created easy to transport pizza concept solution for event organizers. Moreover, the company established an

interesting service solutions concept targeted for event organizers, sport arenas, and other similar customers, which enables customers effectively produce meals by utilizing the technology and convenience products delivered by the case company.

### **CASE TRADITIONAL MEAT COMPANY**

The company operates as a meat product wholesaler. It offers cooked- and raw meat products for Horeca customers and private consumers via grocery store meat counters and company's own shop. The company specializes in cured meat products and meat curing services provided for their customers, yet it also offers other meat products for the markets. The company actively gathers and utilizes the knowledge concerning the consumer consumption preferences via their store location in order to create new product offerings to satisfy the existing customer demands. The company works in close cooperation with Horeca customers to create new products for that sector.

### **CASE SAUCE MANUFACTURER**

The company produces larger selection of different marinades, dressings, sauces, and spices for their customers. Additionally, the company offers their customers product development services free of charge to find new ideas and establish new business with customers. The company's customers are mainly meat counters, meat-processing companies, and grocery stores. Working closely with customers to receive feedback on products, the feedback is utilized to introduce new and further develop the existing products. Highlighting the importance of partnerships, the company operates in close collaboration to improve their understanding about customers.

### **CROSS-CASE ANALYSIS**

The cross-case analysis intends to understand the central mechanisms across the studied cases. Particular focus has been on finding empirical evidence on the mechanisms between the dimensions of ACAP (knowledge acquisition, assimilation, transformation and exploitation), and the dimensions of EO (proactiveness, innovativeness and risk-taking).

### **KNOWLEDGE ACQUISITION AND ENTREPRENEURIAL ORIENTATION**

Knowledge acquisition often represents the starting point for the innovation process. Knowledge acquisition is not only a common initiating capacity for the development process of new products and services, but also tightly interrelated with other dimensions of ACAP. Facilitating search and capture of new product ideas, as well as feedback for improvement of the existing products, knowledge acquisition appears to provide essential information for assimilation, transformation and exploitation of knowledge.

Demonstrating the interplay between knowledge acquisition and EO, most of the product ideas emerge in customer interactions, and are assimilated in sales and product development. Whereas the case companies highlight the importance of friendly and trustful interaction with consumers,

resellers and other partners, EO is needed to facilitate listening, documentation and sharing of ideas. Without proactive engagement in interaction, documentation and sharing, customer interaction remains empty. Thus, the role of EO here is to support ACAP to enhance the willingness to listen, document and share ideas.

*Sauce Manufacturer: We have had huge strength, that... we have had good relations with shopkeepers, so that we have well in advance information on what are they going to require in the future... with this (information) we have gained new customers*

*Pizza Company: The interaction with the customers is really important. We constantly advice our waiters to listen to the customer. If a customer asks whether we sell a "simsalabim"-thing, don't just reply "no", but also make notes on it, so we get the information that customers have requested for such a thing, and maybe in some point we can take it on consideration and start thinking of it and making preparations for it.*

Secondly, the empirical data demonstrates the importance of bringing new ideas to the discussions inside the company without considerable time lag. Thus, here the EO, and in particular, the entrepreneurial proactiveness, facilitates rapid and effective sharing of new ideas within the manufacturer organization, increasing the speed of development. In such endeavor, companies appear to benefit from increased alertness for new product and service ideas and other market opportunities indicating the existence of increased level of entrepreneurial proactiveness.

*Sauce Manufacturer: I have a habit of taking matters forwards quickly and telling it onwards. Sometimes I run into others immediately, sometimes after a while, then I start taking the matter forwards, so that everyone else gets excited as well.*

*Additive Free Bakery: When we were at the exhibition for food manufacturers at Kauhajoki, people were asking for gluten free products. After that we established a gluten free bakery. And on the next year we were chosen to be the gluten free company of the year*

*Industrial Meat Company: We are a rather small company, but in this salami business we are a big player, but small and flexible in our way, so we can really fast turn an idea to a product. It does not require that much bureaucracy after all.*

Thirdly, knowledge acquisition serves the transformation and exploitation phases of the knowledge utilization. The companies collect feedback from customers in the very early stage of new product development to further coordinate the development process. Since the product development processes are based on the acquired feedback, the companies' perceived risk becomes lower than it would be without the feedback knowledge. The reduced requirements for risk-taking decrease the EO towards moderate level.

*Additive Free Bakery: We might ask directly from customer... or we hear a lot from counsels ... and bread department managers tell regards to our delivery drivers... and the customers say directly at the store that.... the reaction of the customers' is the utmost important*

*Traditional Meat Company: We have counsel days here. There we experiment that what works.*

*Sauce Manufacturer: I think that good indicator is that we test our products at a large supermarket's service counter, so that they set our products available there. In short period of time several thousand consumers visit the spot. All of them giving feedback.*

### **KNOWLEDGE ASSIMILATION AND ENTREPRENEURIAL ORIENTATION**

Knowledge assimilation often begins already alongside with knowledge acquisition in customer interaction. Open dialogue with consumers and resellers, but also with other actors such as logistics companies and promotion service providers, initiate the process of knowledge interpretation, which then continues inside the company. At the center of knowledge assimilation is interaction between internal and external parties, which through the shared interpretation of the acquired knowledge, increases collective understanding. Thus, here the EO, in particular, the entrepreneurial willingness to promote innovativeness, facilitates effective knowledge interpretation and sharing related to new idea generation and creative processes.

*Traditional Meat Company: pretty much it happens here, when we are having coffee. So if some customer from somewhere asks for some special kind of product, we start developing it, considering what could be the idea and someone might get an idea that "Yes, let's try that" and then we start developing from there. ...the thing usually starts from the coffee table conversations.*

*City Bakery: while working we have lots of time to discuss informally, about how we do things, and where are we saving (money)... Here at the oven. At the oven or at the dough making station... there we discuss these things, and what we could do, and where we could get raw material, or what kind of raw material suppliers there are.*

Reflecting the capacity to interpret, analyze, and understand the externally acquired knowledge (Zahra & George, 2002), assimilation represents a process where the new knowledge is interpreted against the existing knowledge. Facilitating ACAP and knowledge assimilation, EO emphasizes proactiveness, which provides motivation towards challenging processes of knowledge sharing and interpretation within the manufacturer organization. As assimilation requires willingness to question the existing way of thinking and motivation to utilize new ideas and experiment, proactiveness, innovativeness and risk-taking may provide valuable facilitators for knowledge assimilation.

*Additive Free Bakery: we have people, so from them some stand out as ones that want to try new things. And make them. We cannot always make them, but when we can we will give them chance to do experiment with things. If we would not have our own store the outcomes of these experiments would always be thrown into trash. But since we have our own store we can sell the experiments to customers. Then our sales clerks will give us*

*feedback on what things the customers like. The own store is really important and it is an opportunity that we should use.*

*Traditional Meat Company: otherwise it goes like, that inside our organization when we do experiments... for example our own grill sausages that are made here, came from employees idea to try it out.*

## KNOWLEDGE TRANSFORMATION AND ENTREPRENEURIAL ORIENTATION

Serving as a capacity to turn the acquired and assimilated knowledge into new products and product improvements that meet the requirements of established product strategy and customer needs, knowledge transformation is a critical capacity for a firm. At the center of this capacity are the practices applied to evaluate the profit potential of new product ideas against the core attributes within the firm and value system. As firms are not separate islands, but dependent on other companies within the value system, potential value to firms in different phases of the value system, is highlighted by the case companies. In knowledge transformation, ideas are brought to product concepts that simultaneously meet the expectations of the consumers, resellers and producers.

In the case companies, knowledge transformation is continuous and relatively dynamic in character. That is to say, knowledge is continuously transformed into new product potentials, which are then developed further or quickly abandoned. Constant customer feedback on new products at the development stage is used to feed information to guide the development of new products and modifications. EO influences within the process by increasing the speed and determination of acquired knowledge internalization. For instance, the case companies highlight that the process from knowledge acquisition to assimilation and transformation may sometimes take only days – firms interpret and react immediately when they encounter challenges in product sales.

*Pizza Company: just while ago we received feedback, that customer felt that our kids menu was obsolete... The customer felt that the servings were too simple, and immediately... on the next day we took actions. We brought it up and started developing it... this is our way to operate... we react to situation when it occurs.*

*Traditional Meat Company: For Labor day we made one version of it [sausage] and on this week we'll make new one. The customer tried it and wanted changes, which we will now make. The product will match the customer preferences.*

*Additive Free Bakery: it is easier to bake breads and put them up to our store for sale and see if they get sold. I ask from the sales clerks, that since it has been a good day, what do the customers buy and what do they like? And then they say that the customers have praised the Mämmi [traditional Finnish dessert], and said that is the best. Couple of hundred people has bought it and five have said that it is the best they have ever had. Then we will lock the recipe down, and we won't change it anymore.*

Aspiration to understand the end-customer by building customer profile is also one of the methods used in our case companies. Profiling customers and reviewing competitor products indicate proactiveness dimension of entrepreneurial orientation. Furthermore, the product development ideas that originate from the identified customer segments are not perceived as risky as bolder and more fortuitous product ideas decreasing the required level of risk-taking.

*City Bakery: he [the customer] showed a big plate, which had our competitor's products... then we [the company together with the customer] started... thinking what kind of people [consumers] go there... we stated from there, that this is the end-user... what do they want... it started working pretty well.*

Finding an optimal balance between customer value, attractive prices and high profit margins is at the center of the knowledge transformation. Successful products embed low development, raw material, manufacturing and delivery costs, high value for the end-customer and good margins for firms operating within the value system. Based on the knowledge about critical price points and stakeholder profit margins, the companies improve their capability to assess product ideas and create products that are financially appealing for the customers. Calculating the prices in product development phase decreases the risk of product failure. The decreased risk-taking reduces the needed EO towards a moderate level.

*City Bakery: the recipes of our most important products also contain the information on the prices of the needed raw-materials... we approximately know the gross profit margins of the wholesalers, so we have to think that if we sell it to them on certain price, and if they ask a certain price for the product. Would someone buy it?*

*Traditional Meat Company: Everything starts from considering the production time, price of the raw-materials, and possible the price per kilo that we could possibly get. It needs to be reasonably considered, so we won't start chopping tenderloins here. It needs to be reasonable, so we can get some profits from it.*

*Pizza Company: now the stores have started understanding this... it is not only how much they sell, but rather that they sell the right products, which have profit margins. From our products the store gets damn good profit margins. Then they also want to put it on display well in the good spots inside the stores.*

*Additive Free Bakery: for the producer there will be certain costs, but if it is so high, that the customer does not want to pay it then... Something has to be changed in the whole process or in the raw-materials, or in some other parts, or the product just cannot be released to the markets. That often comes clear, when the product is tested by the customers and some price is set for it.*

The case companies emphasize the development of new products based on their existing capabilities, and product and service offerings. The new offerings are developed in a manner that they can be produced with the existing resources without making heavy investments in new capabilities or equipment. Thus, great majority of the new product and service innovations are

rather incremental than radical. Further, product development utilizing the existing capabilities and resources lowers the required level of risk-taking.

*Sauce Manufacturer: Since we mostly make same kind of products that we have until now, we don't have to make investments at all... Let's say that we'll rather stick to the markets that we have gained access to, so we don't try anything more extraordinary than anyone else, instead we stay rational and since we have some markets, we will look after them.*

*City Bakery: at the moment investments have been minor... the customer orientation is the most important thing, we cannot lose that... All the other technical things and the rest can be solved in time.*

What also appears to be common to our case companies, direct copies from competitors' products, even though successful, are not favored. The originality of ideas is more appreciated indicating the existence of increased emphasis on uniqueness. The original product ideas and refusing to copy from the competitors indicates strengthened proactiveness. Additionally, capability to create successful original products requires innovativeness which together with proactiveness indicate enhanced EO.

*City Bakery: I have tried to differentiate our portfolio from what the big bakeries do... for an example the abandoning of the rye bread. And the making of Artisan breads and Mediterranean breads... After that we get lot of products that our competitors do not have.*

*Sauce Manufacturer: We don't think that we need to start copying our competitors, even if see that they have some novel product.*

*Additive Free Bakery: Nine out of our ten new products fail, but one will succeed. And well, our products are significantly different than what others have. Now since we are not market leaders, instead our market share is small maybe five, or maximum of ten percent in some areas, so our bread is nonetheless different than others'.*

#### **KNOWLEDGE EXPLOITATION AND ENTREPRENEURIAL ORIENTATION**

Capacity to exploit new knowledge builds on leveraging the acquired, assimilated and transformed knowledge to enter the markets with new products. These companies familiar with effective prototype development and launching practices have capacity of entering to smaller local markets to see if the new products are capable of succeeding. If the products succeed on these local markets with smaller scale, the new products are introduced to larger audience by using the early success as a reference to empower future sales negotiations with other customers.

Hence, the case companies seem to exploit knowledge for creating prototypes and developing the prototypes further. Creating on early prototypes increases the speed of product development process, but also involves personnel and local customers to provide perspectives about product

taste and appearance qualities. Thus, here the entrepreneurial orientation, in particularly proactiveness, facilitates cooperative operation and proactive feedback gathering in the product development. Additionally, the prototype testing reduces the risk related to final published product thus decreasing the requirements for risk-taking.

*Traditional Meat Company: It goes like, if we develop new product, we make a prototype of it and take it the customer... Personal visit... and then he tastes it... he accepts the product as it is or gives us improvement ideas... in the end if the product is good it starts to roll on by its own. In the end the consumers will make the final decision.*

*Sauce Manufacturer: we take samples to retail meat cutters and meat companies... in there the cooperation works well... they happily offer new things for the customers... from them we get rapidly... immediately in few days feedback, that it was good or alternatively a request to make small improvements.*

According to the interviewees, the case companies demonstrate rapid processes of new product development in comparison to the industry standards. Capacity to exploit new product ideas effectively appears to result from customer and personnel involvement to the development process. The rapid product development processes and capacity to act as first mover on the markets indicate strong proactiveness, thus further demonstrating increased entrepreneurial orientation in the companies.

*Sauce Manufacturer: we can get some feedback when our representatives visit the retail meat cutters... if we get critique that customers don't like something, then we immediately think if some changes should be made.*

*Traditional Meat Company: when we can make decisions ... in a day here, when some big meat refinery... starts making decisions it will take them months... This is like fast turning ship... I know how slow those big unwieldy ships [large corporations] are to turn. It might take them a year, before anything actually happens.*

*Additive Free Bakery: if we take a competitor [large corporation] for example... they cannot just take their products to the store and say "Sell these". Instead they have to consider the new product and start making it in all of their bakeries or just in part of them. And it requires nationwide marketing. And they have to deal with it from Helsinki, wait for stuff and develop things. It will take them a year or two. During that two years' time we have brought 6 new products to the markets, and have already shut down majority of them. For us the business lives fast like that.*

The case companies tend to capture the value of the prototypes by selling the products already in the development phase. By creating cash flows from the early development phase, firms are able to increase the customer- and consumer knowledge by reduced risk. Thus, moderate level of entrepreneurial orientation may be sufficient.

*Additive Free Bakery: Today we plan and make. Tomorrow it is already for sale. And we get the money already on the same day. We get a constant flow of cash without any half year waiting periods.*

Prototype testing with end-customers, in addition to enabling direct consumer interaction and continuous feedback loop, it serves also as a promotional activity. Thus, the companies do not rely on expensive marketing campaigns but rather believe that their high quality products speak for themselves and are capable of attracting consumers to purchase products after sample testing. Therefore, companies rely on product counsel days in supermarkets, which provide customer feedback and increase sales. The entrepreneurial proactiveness is related to aggressive competitive behavior, such as heavy marketing campaigns, and thus companies' reluctance to engage in expensive marketing campaigns decreases their entrepreneurial orientation towards moderate level.

*Sauce Manufacturer: Sometimes we have a chef giving samples in our behalf... He goes next to a meat counter and gives samples of either fish or meat products, which are seasoned with our products. Then he gives us feedback what the customers have liked, and at the same time we can boost the sales of our new products such as meats seasoning oils or chili pepper oils*

*Traditional Meat Company: in [larger supermarket chains] we are present in stores. We deliver our products there and we have our counsels, who demonstrates the products, and gives samples, from that we gain customer awareness and enhance our sales.*

Despite the constant feedback loop reduces the risks related to final product launch, since the product qualities have been tested on customers, the results also suggest companies are willing to take minor risks to continuously create and re-create new products. This indicates willingness to engage in market-driven opportunities, suggest positive attitude towards innovations and hence the importance of the interplay between knowledge exploitation and entrepreneurial orientation.

*Sauce Manufacturer: And our flexibility of course comes from that. It does not matter to us even if we make a small amount of products and they don't get sold. After that we just make them anymore. It is not a problem for us. We can make small quantities and we can make large quantities.*

*Additive Free Bakery: We don't really investigate the possible customer demand, rather we just try them out at our store, we give customers samples, or take the product directly to some store, where to we can directly take products to. We put the new product into shelves and see if it starts to move.*

*Pizza Company: Have to be brave and open-minded... Sometimes we have taken products that don't really have demand for, but we are just a small organization, and we can quickly change it, so you can never know.*

Finally, the cross case data demonstrates how these companies emphasize the early market testing to introduced them to larger markets and other first-tier-customers. These companies highlight the importance of effective market entry with potentially successful products.

*City Bakery: We do offer these conversions to our current customers and purchasing managers... and we can see... if there is demand for that kind of products. If there is, then it is easy to bring similar product, yet a bit different, to other customers... We can try out with small quantities, and see how well they sell. Usually it can be seen pretty quickly.*

*Additive Free Bakery: when the product has been finished and sample tested, maybe experimentally sold at our store, then after that we can pretty quickly see, if people are interested in it, and we should take it to nearby supermarkets or not... we first try with a small volume in one location, before we expand to all the stores...*

## DISCUSSION AND IMPLICATIONS

### THEORETICAL CONTRIBUTION

Contributing to the literature on ACAP and EO, the present study sheds light on firm profitability driving practices utilizing customer relationships that underlie the interplay between EO and ACAP in the context of new product development of industrial companies. Thus, the study has two main contributions. Firstly results provide indepth insight on practices reflecting the interplay between ACAP and EO extending the understanding on effects of the interplay of these two phenomena on firm performance, more precisely profitability. The results of the comparative case study revealed five common processes and practices such as (1) appreciation of rich customer interaction, (2) agile external knowledge processing, (3) informal daily dialogues, (4) experimental product development and (5) cost- and customer value driven opportunity capture. Second main contribution is to demonstrate interrelationship among the dimensions of ACAP by providing evidence on the overlapping nature of practices contributing to several dimensions of ACAP.

*(1) appreciation of rich customer interaction.* The case companies demonstrate that firms with moderate EO and high ACAP thrive from customer-oriented entrepreneurial orientation. The results shows, that these companies appreciate a rich customer interaction. The customer opinions and preferences are in the root of their operations and guide their innovation processes. By sourcing their innovation from customer interactions, the companies are able to produce proactively and innovative new offerings, with a reduced perceived risk due to the knowledge of existing customer demand. These findings are aligned with prior studies claiming that in low and medium technology industries customers as a primary external knowledge source drive high firm performance (Grimpe & Sofka, 2009).

*(2) agile external knowledge processing.* With an agile external knowledge processing capabilities, the case companies are able to effectively transform and exploit the acquired

information into new offerings. By being able to quickly and cheaply turn information into tangible offerings, the companies are capable of taking advantage of emerging opportunities before the competition and generating significant profits. The companies utilize agile ACAP routines to enable the testing of ideas of various potentials, without exposing themselves to considerable financial risk. This reduces the level of risk that the companies are taking.

(3) *informal daily dialogues*. The results show that case companies mostly utilize informal daily dialogues to fuel their innovations. According to results, the informal conversations during the day-to-day operations are the base of innovative processes. The companies make use of the time spent in production processes and on the coffee breaks to brainstorm around the acquired information in order to refine valuable new ideas from it. This combines proactiveness, innovativeness, assimilation, and transformation routines of the organizations.

(4) *experimental product development*. The case companies regularly utilize experimental product development routines combining ACAP- and EO routines. The companies quickly develop minimum viable products for the markets, which they use to collect customer and end-user feedback to improve product. The process is repeated with the improved products as many times as required to reach level of quality that satisfies customers and end-users. This manner of operations secures generation of revenues all along the development process, and ensures meeting of the customers' and end-users' quality requirements for the final product.

(5) *cost- and customer value driven opportunity capture*. Profitability and cost awareness are both deeply embedded to companies' routines and practices throughout the development process. The results show, that the case companies put significant emphasis on product profitability, product pricing, customer profits, and end-user pricing. Awareness of competitive environment and price sensitive end-users dominates the product development processes, if the products are seen as too expensive for any of the stake holders, it is discarded as unviable. This signals of reduced risk-taking in the companies' product development routines.

Unlike presented by prior literature (Zahra & George, 2002), ACAP routines may not serve only a specific dimension, but are rather overlapping by nature. Each ACAP dimension plays an important role in organizations learning and exploitation routines, however the process is not linear, but continuous cycle instead. In many scenarios, the organizations actual ACAP routines and processes include more than one dimension of the construct. For an example, assimilation routines can be mixed with transformation practices, and exploitation often begins a new loop of acquisition. Instead of being linear stage-by-stage progress from one routine to another, the results suggest, that in reality the dimensions work intertwined with each other in a continuous cycle.

### MANAGERIAL CONTRIBUTION

Managerially, the study provides guidelines to facilitate utilization of customer relationships to their full extent through the interplay between ACAP and EO. Profitable organizations create their products based on customer and consumer feedback. The basis for ideas derives from external sources, rather than inside the company. This ensures that organizations' new offering have demand from customer side, and innovations are answering to a demand. By sourcing their

new ideas from customers and end-users the organizations can reduce their entrepreneurial risk and achieve increased profits.

Innovations are created with a constant strong focus on profitability and gross margins throughout the process. Since the profitability of a product or a service is well planned from the beginning of the innovation process, it is likely that the product will end up with viable profit margins for majority stakeholders involved with the value chain. By operating in this manner, the companies are able to discard unviable ideas early, if they are seen as financially impossible to realize.

Encouraging the informal dialogues within the organization can facilitate innovation and information acquisition, assimilation, and transformation routines. By creating a culture enabling informal communication the organizations enhance their knowledge based resources and innovativeness.

The sample companies illustrate, that a firm can achieve high profitability by creating practices that enable failure and trial-by-error learning. Instead of aiming to introduce ready or perfect products to the markets, the sample companies introduce viable products with limited development. The companies use these prototypes to reduce spendings on product development and to achieve products corresponding to the customer demand.

#### LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study uses single industry sample collected from mature low-tech industry. This may cause limitations in generalization of the results of the study. Additionally, the sample consists of Finnish companies, which may affect the results of the study and limit their generalization to other cultures.

Researchers should pay attention to ACAP measures in low technology industry. Study reveals that in such industry ACAP externalize in ways that may not be captured accurately through Jansen et al.'s (2005) measures.

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