# Small but versatile: How SMEs perform ambidextrous behaviour

*A CROSS CASE ANALYSIS*

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## Acknowledgements

Finally, done. Where's the bow to tie around this thing and to get over with it?

These are probably not the most eloquent words ever used to open acknowledgements, but they are certainly true and I'd like to leave it to the reader to decide if these words are justified.

When I set out on this journey two years ago, it was to find out if I could 'go the distance'. As this, in this case, is a reference to describe the full twelve three minute rounds of modern boxing, I certainly didn't plan to need all twelve. But eventually think I went 'old school' at it and needed fifteen. Or at least it feels this way.

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I owe great gratitude to all people involved, invested their time and shared their experience with me and would like to express my gratitude to Ans, Sabrina, Arno, Conrad, Frits, Paul and Wouter.

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In most other instances, this is probably true and it kept us sane. It also inspired our battle cry we've used throughout the last two years: "Linksom!"

The result of this effort is placed before you and my only hope is that it does all these wonderful people justice. Obviously, mistakes were made, but I can honestly say all of them were mine.

# Executive summary

The business environment changes much faster than ever before and technologies are expected to have shorter lifespans than ever before. Organisations need to develop their businesses and business models at an increasingly faster pace, while still having to make the most of the business models they already have in place. This dual track mind set brings its own challenges and difficulties, with the fundamental difference between carrying out the current operations out as efficiently as possible and the creative ways of discovering new horizons and business models as most prominent challenge.

As large organisations cope with this challenge by forming separate teams or business units, smaller organisations are unable to follow suit due to financial or managerial constraints. The question how these SMEs can keep competing with larger firms on efficiency and effectivity, while finding a way of doing business differently or doing different business requires a carefully controlled balancing act. In order to find ways of how SMEs try to balance exploration and exploitation, five SMEs are examined on how they regard this ambidexterity in order to achieve long term survival. The relation between the size of an organization and its ability to perform ambidextrous behaviour is examined. Additionally this thesis raises questions about if SMEs consciously consider a need for ambidexterity and how they handle the inherent tension between both concepts. It also raises the question if SMEs explicitly manage tension between exploration and exploitation in the first place. Further questions are asked about how SMEs manages ambidexterity. Is this done implicitly, or even unknowingly?

Five cases that are selected to represent a variety of fields (Manufacturing in slow and quickly changing environments, financial and business services) and conclusions are drawn based on interviews with management and on financial data. This leads to the main conclusion SMEs need to perform ambidextrous behaviour in order to achieve long time survival and that they do just that. They only do it without realising they are balancing concepts that are, at times, almost mutually exclusive. Tis thesis therefore adds to current knowledge by highlighting ambidexterity is not necessarily planned behaviour.

## Key words

Ambidexterity, SME, Exploitation, Exploration, Innovation, Bootstrapping, Bricolage, Turbulence, Strategic renewal.

# Contents

# 1 Introduction

Much has been written about the ability some companies possess to both effectively exploit their current business as well as actively explore new ways of doing business. Both these abilities require a different set of skills and mind set, but are both important to survive (Gibson & Birkinshaw, 2004; Vera & Crossan, 2004, p. 63) or to gain a competitive advantage (Arthur, 1992; Porter, 1980, 1985, 1987, 2008; Tushman & O'Reilly, 1996). Increasingly, the notion of ambidexterity is used to describe organisations that are able to perform explorative and exploitative behaviour (Birkinshaw & Gibson, 2004; He & Wong, 2004; Raisch & Birkinshaw, 2008; Simsek, Heavey, Veiga, & Souder, 2009) Although most of the available knowledge focusses on lager companies (Gibson & Birkinshaw 2004, He & Wong, 2004), studies of small and medium enterprises (SMEs) touch on the challenges that occur when attempting to balance exploration and exploitation (Lubatkin, Simsek, Ling, & Veiga, 2006). These studies underline the importance of ambidexterity as a practice for performance improvement and survival of the organisation (Gibson & Birkinshaw, 2004; He & Wong, 2004; Raisch & Birkinshaw, 2008; Raisch, Birkinshaw, Probst, & Tushman, 2009).

Research done in large organizations has shown ambidexterity (i.e. the ability to combine both exploitation of current abilities and the exploration of new ones) helps achieve long term survival of companies as a whole (March, 1991; Siggelkow & Levinthal, 2003; Tushman & O'Reilly, 1996). Ambidexterity encompasses the incorporation of both these capabilities within the existing organisational structure, both formally and informally (Gilbert, 2006; Jansen, Tempelaar, van den Bosch, & Volberda, 2009; O'Reilly & Tushman, 2007; Westerman, McFarlan, & Iansiti, 2006). This multidimensional approach should prevent too much emphasis on either exploitation or exploration, as emphasis on exploitation could lead to competency (or success) traps, inertia, and ultimately obsolescence, leaving an organisation ‘trapped in suboptimal stable equilibria’ (March, 1991, p. 71). Too much emphasis on exploration creates a failure trap where organizations gain no returns from their knowledge, or ‘exhibit too many underdeveloped new ideas and too little distinctive competence’ (March, 1991, p. 71). Simsek et al. (2009) argues exploitation and exploration compete for management attention and resources, an optimal and sustainable mix between the two is challenging to achieve and involves some potential trade-offs.

However, this research is mostly done in large organisations and assumes the possibility of using multiple teams focusing either exploration or exploitation. Doing so, the inherent tension ambidexterity carries is solved by assigning the task to perform differing and often competing, strategic acts at the same time to different teams doing one of both (Simsek et al., 2009). Preferably, some kind of Top-Management-Team (TMT) acts as a referee in order to decide between two contestants is a bi-polar construct, treating March's (1991) distinction and trade-off argument between exploitation and exploration as lying on the opposite ends of a single continuum (Simsek et al., 2009).

The assumption an organisation can form different teams for these two tasks, disregards the existence of small companies without TMTs and a smaller (and often less formally organized) number of staff. If we assume SMEs to compete with large organizations on equal terms, we therefore should accept a need for ambidexterity within SMEs like within their large counterparts. SMEs are therefore expected to have the same need for ambidexterity larger organisations have, with the apparent bi-polar premise of ambidexterity and the conflicting demands on management that come with it (March, 1991; Simsek et al., 2009). However, SMEs possess a number of key characteristics that set them aside from large organizations. Scarcity of funding and an incomplete set of managerial skills are the most cited drawbacks. To counter these drawbacks, SMEs find more inventive ways of acquiring resources and applying innovation (Ang, 1991; Damanpour, 1992; Hudson, Smart, & Bourne, 2001). Large organisations are believed to make use of their size in order to adopt innovations faster and with less risk, while SMEs are considered more flexible (Damanpour & Gopalakrishnan, 2001; Kimberly & Evanisko, 1981). Size is therefore regarded as a fundamental variable on innovative orientation and capacity of firms, but difficult to isolate as well (Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, & Boronat-Navarro, 2004).

## 1.1 Research objective

Tension exists between exploration and exploitation due to both concepts competing over the same resources (Birkinshaw, Crilly, Bouquet, & Lee, 2016; Birkinshaw & Gibson, 2004; March, 1991; Raisch et al., 2009; Simsek et al., 2009). SMEs suffer as well form having access to less resources in the first place (Ang, 1991; Camisón-Zornoza et al., 2004; Damanpour, 1992; Hudson et al., 2001). Therefore the tension between exploration and exploitation should be at least as present in SMEs as it is in larger firms. This thesis will therefore investigate if ambidexterity is present in SMEs at all and how SMEs that perform ambidextrous behaviour under the constraints SMEs face.

Subsequently, this thesis investigates if SMEs consciously consider a need for ambidexterity, how they handle the inherent tension between both concepts and if SMEs explicitly manage tension between exploration and exploitation, if this is done implicitly, or even unknowingly.

## 1.2 Contribution to the field

### 1.2.1Theoretical contribution

There is little research on ambidexterity in SMEs. There is an extensive body of knowledge on ambidexterity (Birkinshaw & Gibson, 2004; He & Wong, 2004; Raisch & Birkinshaw, 2008; Simsek et al., 2009), and SMEs (Ang, 1991; Burns & Dewhurst, 1996; Carland, Hoy, Boulton, & Carland, 1984; Carson, Cromie, McGowan, & Hill, 1995; Yang, Zheng, & Zhao, 2014), but very little on a combination of both. Studies of SMEs that do touch on the challenges that occur when attempting to balance exploration and exploitation, have investigated SMEs and the behavioural integration of their TMTs (Lubatkin et al., 2006). These studies all assume deliberate action by a TMTs while performing ambidextrous behaviour. They assume there is some kind of higher management that can plan both types of tasks that together form ambidextrous behaviour and arrange resources to perform them. This thesis differs by investigating if this ambidextrous behaviour is deliberately displayed in the first place, or that it is done without (extensive) consideration.

### 1.2.2 Practical contribution

This thesis will help to point out if and how SMEs display ambidextrous behaviour in a practical way. It aims at helping SMEs to overcome the tension between explorative and exploitative behaviour without the means and standard solutions larger organisations can use. It also helps SMEs balance these two concepts under the specific constraints they experience.

## 1.3 Thesis outline

This thesis will first investigate the current knowledge of ambidexterity, the differences between SMEs and large organizations on a philosophical, managerial, financial, and innovative level and the perceived solutions to incurred problems. It is assumed SMEs will have difficulties in performing ambidextrous behaviour. As literature suggests, the most common way to address ambidexterity is to install different teams for both exploitative and explorative goals.

In its second part, this thesis will examine five SMEs differing in size, industry and stage of their development. It will do so in order to investigate the way these organisations handle ambidextrous behaviour. It will investigate how they have structured their organisations, their financial constraints, which philosophy drove their view of survival and innovation. The first two parts aim to define exploitation within SMEs and the third to bridge the gap between exploitation and exploration and the fourth to determine exploration. The third and last part will consider the findings of the second and the relation between size of a company and its ability and intent to perform ambidextrous capabilities

## 2 Literature review

This chapter explores literature on the two main aspects of this thesis. The first is the notion of ambidexterity. This is the ability to perform tasks that are focussed on using the current abilities to their full potential while exploring future possibilities that are not necessarily related to any current operations. This could lead to or ask for the destruction of carefully designed systems that have proven their worth in favour of new ideas that are untested and unproven. Balancing these demands is difficult to achieve, even for large organisations that can allocate indefinite means to these competing causes.

The second major aspect is the size of an organisation and focusses on how small organisations that do not possess indefinite means compete with their larger counterparts. It explores the need SMEs feel to copy of match behaviour by larger organisations or if SMEs could use other ways to ensure their survival and do not need ambidextrous behaviour at all. For SMEs that do require ambidextrous behaviour, section 2.2 will also investigate how the tension between both aspects of ambidexterity is managed.

The third part will summarise the current body of relevant research, the need for ambidexterity in different organisations and the solutions that can be used to reach that state. It will also address the need for investigating ambidexterity in SMEs and what has an influence on how ambidexterity is managed.

### 2.1 Exploration and exploitation: the importance of ambidexterity

Tushman and O'Reily (1996) consider the ability to renew an existing business model or to adopt a new one while the current model is utilized as effective as possible. In order to cover both current operations and carve out the space for exploring new possibilities as a key ability for long term organizational survival. Atuahene-Gima (2005) has pointed out exploitation adds to existing knowledge through efficiency enhancement and incremental innovation. Exploration leads to new knowledge and radical innovation. Exploration and exploitation are therefore regarded as sides of the same coin and are described as organisational ambidexterity (Duncan, 1976) and organisations that possess this ability are expected to outperform other competitors in a dynamic environment. At first, ambidexterity inevitably leads to a decreased level of financial headroom, as exploration uses financial resources that diminishes the bottom line in the short term. It is however expected to return new innovation and add to the organisational performance in the long term (Jansen, Van Den Bosch, & Volberda, 2006).

In practice, this dual state is considered both hard to obtain and difficult to maintain (Smith & Tushman, 2005). Eventually, organisations seem prone to focus on either of the two for financial of managerial reasons, with either one seemingly actively crowding out the other (March, 1991; Tushman & O'Reilly, 1996). In this view, exploitation and exploration are exercised simultaneously, but not necessarily part of the same coin. Both exploitation and exploration are fundamentally different and are unable to mix. Therefore, they are organised in fundamentally different ways (Floyd & Lane, 2000; Gibson & Birkinshaw, 2004; He & Wong, 2004; Tushman & O'Reilly, 1996).

Exploration requires a process created with creativity in mind, finding new solutions to existing or new problems. It requires the ability to acquire new skills and to sell these skills and perceived opportunities to management and customers. Exploitation is more focussed on rigid workflows and the most effective way of processing with all available skills organised in such a way the output is maximised under current (and relevant) constraints (Wooldridge & Floyd, 1989), without disturbing the current status quo (Floyd & Lane, 2000). Ambidextrous managers are expected of being able to perform both kinds of tasks at the same time. Therefore managers are increasingly forced to face inconsistent expectations about their behaviour. They are expected to display an efficient deployment of existing skills and competencies, while acquiring (and experimenting with) new ones at the same time.

Much of the current body of knowledge seems to avoid the tension between exploration and exploitation by the formation of different teams doing different jobs. Both teams then report to higher levels of management which decide on prevalence. Although this solution is perfectly feasible for large organizations (of even larger SMEs), it does not solve the underlying issue of both being fundamentally different. Different teams for different tasks only separate the two concepts structurally (Floyd & Lane, 2000, p. 160). This leaves a significant part of the business in the dark if the only way to relieve the inner strain of ambidexterity is by adding layers to organisations. SMEs lack the resources to ‘just’ add teams for either activity at a heart’s desire (Lubatkin et al., 2006; Romano, Tanewski, & Smyrnios, 2001), rendering the solution larger organisations use to relieve the strain ambidexterity put on an organisation practically useless for SMEs. This makes ambidexterity difficult to achieve in SMEs, due to lack of resources and staff to perform both tasks at the same task.

It needs to be noted the capability of current staff to perform both tasks at the same time is present in the first place is not even concerned. This should lead to the inevitable conclusion ambidexterity is achieved with great effort by large organizations, and even greater difficulty by SMEs, if even achieved at all (Lubatkin et al., 2006). As SMEs lack a multitude of organisational layers anyway, exploration and exploitation is performed by TMTs (Lubatkin et al., 2006). Although this has a dampening effect on infighting and lowers the distance between TMT and the marketplace, it reintroduces the problem of exploitation and exploration being performed by the same team (or person). Moreover, it reintroduces the strategic role conflict that goes with strategic renewal in order to recognize that maintaining adaptiveness requires both exploiting existing competencies and exploring new ones (Floyd & Lane, 2000). It therefore effectively unpicks the structural solution larger organisations tend to choose.

Another factor is a contextual one, as it is impossible to manage all members' expectations, behaviours and choices. This only shapes collective tendencies by clarifying priorities and fundamental expectations of organisational effectiveness. These expectations are driven by the organisational strategy and, indirect, by the market dynamism. Aligning these drivers reduces the role conflict. (Floyd & Lane, 2000). Larger organisations have the option to diversify in order to spread the risk they face, but that will not necessarily guarantee success. This leaves ambidexterity as a way to gather a competitive advantage in less stable environments (Ang, 1991; Birkinshaw et al., 2016; Damanpour, 1992; Damanpour & Gopalakrishnan, 2001; Floyd & Lane, 2000; Gibson & Birkinshaw, 2004; Lubatkin et al., 2006; March, 1991; Porter, 1987; Raisch et al., 2009).

## 2.2 How large organizations and SMEs differ

The emphasis in the current body of knowledge is on ambidexterity in large organizations. Research has shown large organizations differ from SMEs (Addy, Pearce, & Bennett, 1994; Ang, 1991; Appiah-Adu & Singh, 1998; Berry, 1998; Burns & Dewhurst, 1996; Carland et al., 1984; Carson, 1985; Carson et al., 1995; Hoffmann & Schlosser, 2001; Hudson et al., 2001; Mashahadi, Ahmad, & Mohamad, 2016; Nooteboom, 1994; O'Regan, Ghobadian, & Liu, 1998; Yang et al., 2014). But before these concepts are visited in depth, it must be pointed out that the boundary between large SMEs and large organizations is still not very clear. In brief, this section will show a difference between large organizations and SMEs on aspects of structure and philosophy, finance and the way they conduct research and innovation. Most of these differences seem to originate from the fact large organizations, by definition, should be larger and less risky than SMEs. SMEs are believed to be more hands on and flexible.

### 2.2.1 Structural and philosophical differences

In short, SMEs are recognised as having a flat, informal structure with a personal, informal flexible and direct type of leadership and a reactive mentality that is geared towards solving problems that are 'right here, right now' (Ang, 1991). Other threats are limited resources, both financially as in manpower, a smaller set of markets and customers and. As a consequence, SMEs have a higher dependency on their markets and customers. SMEs tend to solve these problems by forging a strong bond between the organisation and its owners (Ang, 1991; Hudson et al., 2001; McConnell, 1984; McConnell & Pettit, 1980; Nooteboom, 1994). First generation entrepreneurs tend to run their businesses in person, search higher yields while accepting a higher level of uncertainty (and therefore risk) than subsequent generations or hired managers. They build their relationship with stakeholders on personal and informal relations (Ang, 1991). This leads to another general trait SMEs have, as the financial means of an SME and its owner(s) are much more intertwined than large organizations could, or would (like to), manage (e.g. by shifting rewards to another point in time for fiscal reasons) (Ang, 1991).

Apart from the differences that are observable, SMEs differ from large organizations by what they lack (Ang, 1991). First, SMEs are characterised as being dependent of (too) few key figures that address leadership and vision, technical capabilities and the ability to construct and service meaningful relations with stakeholders. Besides that, it is difficult to address this multitude of different things at once and it isn't said the SME management can address them in the first place. Third, SMEs suffer from continuity problems: succession is an issue most SMEs seem to have. Last, being an organisation built on a small amount of people, SMEs are believed to experience difficulties to react to changes in the environment by ignoring or failing to see them. SMEs also have trouble noticing the importance of changes they face, or are unable to change an existing business model fast enough to cope with the changed environment (Ang, 1991; Hudson et al., 2001).

This inability to change contrasts sharply with the perception of SMEs being flexible and innovative and seems to be originating from the small team doing all thing at once, leaving too little time to take a step back and plan for the future (Hudson et al., 2001). Although managers acknowledge the need for a plan and are capable to lay out and implement a strategic change, they lack the time to do it. This is the result of the need for constant firefighting and the day to day activities getting in the way. Managers in this study therefore agreed on the need to develop strategy but subsequently rushed out to fight more fires and forget everything that was agreed until the next strategy meeting (Hudson et al., 2001). Research has even shown that, when SMEs do try to rethink and restructure their organisation, this could lead to an unstable situation where managers are more focussed on the restructuring itself than on its purpose. The effort then slowly drifts from being helpful and necessary. It turns into a drain on means and people which will lose support in a very short amount of time without achieving anything (Hudson et al., 2001).

The structure and flexible philosophy of SMEs is regarded as one of their key assets compared with the more formal and slower pace decisions are made in large organizations. The largest drawback of the smaller scale SMEs operate at, is the lack of specialists in a variety of fields. Apart from hiring specific knowledge for a specific problem at occurrence, solutions could be found in sharing the cost of a specialist with other SMEs in a local network (Lichtenthaler, 2008; Sivadas & Dwyer, 2000). This could help circumvent the issues caused by lack of staff or knowledge. In this open model, cooperation is based on the innovation notion of Hurley and Hult (1998, p. 44). They describe innovation as "*the notion of openness to new ideas as an aspect of a firm's culture".* This shared effort seems to be driven by some of the issues mentioned above (Acs & Audretsch, 1988; Vossen, 1998). It seems to open up even more by SMEs that share an increasing part of the innovation done among each other (Van de Vrande, De Jong, Vanhaverbeke, & De Rochemont, 2009) or with large organizations.

This is consistent with the research by Lichtenthaler (2008) of organisations in an open environment that share the burden of exploration and exploitation of new technologies. Although this apparent ambidextrous view is usually found in medium sized enterprises (Van de Vrande et al., 2009) and there is a difference between innovation as described above and R&D in general. Most notably, this could have an effect on ambidextrous capabilities SMEs possess. As this open innovation model encourages organisations to tightly work together, it therefore focus on the parts an organisation master best (either at the exploring or exploiting end). This leaves little room to form other capabilities as well. In this more open model, it seems SMEs are to be subdivided in small and medium enterprises, rather than being in the same group. The medium sized enterprises seem to take the role of network nuclei, while the smaller partners are to stay small and lean to preserve the flexibility they have. As a consequence, distributing their knowledge and capabilities within networks that need them seems to force them to lose ambidextrous capabilities that are not required within the network.

### 2.2.2 Financial differences

One of the most notable differences between SMEs and large organizations is the allocation of ownership. SMEs are therefore harder to value than their larger counterparts, making it difficult for outside investors to properly account for its risk. Therefore, SMEs suffer from less sources of financing and these sources are quite often more critical to prevent bad investments. For example, venture capital providers have displayed a negative bias towards SMEs, with strict demands on loan capacity. SMEs have shown a lesser ability to return the initial investment and interest rates (Murray & Lott, 1995). This stance seems to originate from the expectation SMEs are more likely to fail in general and the amount of failure compared to successes (Storey, 2016; Storey, Watson, & Wynarczyk, 1989). In addition, SMEs are expected to have a shorter life span. They also have trouble transferring ownership and have many informal bonds and contracts investors are not aware of. This leads to the perception SMEs are, in general, less profitable and have a higher chance of default (Ang, 1991; McConnell, 1984).

As a result SMEs tend to be unsuccessful while trying to attract venture capital (Storey et al., 1989) and are forced to tighten the financial bonds between the organization and its owners (Ang, 1991). SMEs also have a bias to compete in markets in which their ability to cater to specific customer needs and flexibility count more, and economies of scale matter less (Nooteboom, 1994).

In practice, the most obvious financial difference between large organizations and SMES is noticeable on the balance sheet. SMEs tend to shy away from third party investors whenever possible (either forced by lack of partners or on purpose). large organizations, in contrast, use debt as leverage for equity ever since the Modigliani-Miller models from the late fifties and early sixties where published (Modigliani & Miller, 1958, 1963). In brief, these capital structures use debt (and the added tax bonuses) as a less risky substitute for equity whenever possible. SMEs are less able to secure these types of (long term) financing constructions. Due to shorter SME lifespan, investors are unable to calculate their risk properly, and are more likely to focus on short term financing (Berger & Udell, 1998; Chittenden, Hall, & Hutchinson, 1996; Hutchinson, 1995; Ray & Hutchinson, 1983). Other reasons for SMEs to be cautious with these kind of financial structures is the personal effect a missed payment or default could have on the reputation of owners themselves and their families (Sonnenfeld & Spence, 1989), or the investors demanding collateral in exchange of financing (Berger & Udell, 1998; Mukherjee, 1992; Stiglitz & Weiss, 1981).

In essence, this (re-)introduces the agency problem by having a principal offering funding and an agent running the business, let it be in a slightly different way and on another level (Ang, 1991). Strictly spoken, agency problems are supposed to occur less often in SMEs due to their structure and nature. But by introducing third party funds, the need to inform backers re-enters (Ang, 1991). This has an effect on the amount of time SME owners have to spend with backers (and therefore adds to agency costs). SMEs tend to use the personal reputation of their owners when interacting with backers and will forge strong relationships with a select number of backers to minimise time spent away from the company while maximising its effect (Ang, 1991).

SMEs are therefore thought to differ substantially from their large counterparts to have their own ways of reaching financial decisions and funding while still trying to preserve their independence (Carson et al., 1995; Freel, 2000; Walsh, Niosi, & Mustar, 1995). However, this way of acquiring resources will drain valuable time management could use in other ways. This could add strain on the organisation when the funds generated by itself is unable to cover both exploitation and exploration. This ‘revenue trap' could lead to organisations that are left with great innovations, but are unable to use or develop them (ACOST, 1990).

Apart from the need for resources, SMEs will need funds to capture the resources they need. Those funds could be expressed in money. There are also situations imaginable where no money changes hands and where resources are used that were obtained in a creative fashion (Winborg & Landström, 2001). This 'financial bootstrapping' could pose a solution for a small company without a track record in need of cash to start their business. In the first place, bootstrapping could help by not being as much of a burden traditional finance carries (Harrison, Mason, & Girling, 2004; Winborg & Landström, 2001). The refusal of being constrained by them drove SMEs to innovative ways of founding and running their businesses (Ang, 1991; Di Domenico, Haugh, & Tracey, 2010; Levi-Strauss & Wolfram, 1967; Weick, 1993).

#### *2.2.2.1 Financial bootstrapping*

Besides the difficulty of structurally performing both explorative and exploitative behaviour, SMEs face stiff competition when looking for financial backing (Holtz-Eakin, Joulfaian, & Rosen, 1994; Rajan & Zingales, 1995; Romano et al., 2001). As their nature and expected shorter life span poses an increased risk for anyone willing to invest in the organisation. Therefore, a need arises to build a structure that minimises the amount of external finance. This "*collection of methods used to minimize the amount of outside debt and equity financing needed from banks and investors*" (Ebben & Johnson, 2006) seems to be generally accepted as the definition of financial bootstrapping. The usual reaction by SMEs to the challenges and constraints the lack of financial backing pose (Van Auken & Holman, 1995; Van Auken & Neeley, 1996; Winborg & Landström, 2001). Moreover, external finance pose added cost in money, time and effort that could be avoided (pro) actively as a whole in principle (Rajan & Zingales, 1995; Stiglitz & Weiss, 1981; Winborg & Landström, 2001). It could even be used by external investors as a signal to the outside world about the state of the company (Brennan & Kraus, 1987; Harris & Raviv, 1991; Myers, 1984).

The ability of acquiring means to use in daily activities has a direct influence on the health and growth of the organisation (Cooper, Gimeno-Gascon, & Woo, 1994; Davila, Foster, & Gupta, 2003) Bootstrapping is traditionally seen as the obvious reaction by any company when confronted with a scarcity of financial means (Van Auken & Holman, 1995; Van Auken & Neeley, 1996; Winborg & Landström, 2001). This idea is rooted in the 'Resource dependency theory' by Pfeffer and Salancik (1978), which explains the need to acquire the means necessary for growth or survival, regardless if they are found internally or externally.

#### *2.2.2.2 Bricolage*

During the last decades, the need to improvise, the use of all that is available and the refusal to be held back by (financial) constraints are assets attributed to SMEs (Ang, 1991; Di Domenico et al., 2010; Weick, 1993). Levi-Strauss and Wolfram (1967) have described this kind of interaction with the term ‘bricolage’. Bricolage is used to describe organisations that, bound by size and financial constraints, find innovative ways to use build their business models from what is available. These ‘bricoleurs’ basically use any resource known and available to them in the traditional and new ways, shapes and forms. This way of solving operational problems by improvising is known on an operational level, but find its way to solving strategic problems as well (Baker, Miner, & Eesley, 2003; Baker & Nelson, 2005; Senyard, Baker, Steffens, & Davidsson, 2014). The adaptation of existing technologies in order to provide a fitting solution for customer needs is regarded as an increasingly essential part of exploitation (Harry & Schroeder, 2005). The use of the implicit knowledge of characteristics of the solutions at hand and how they are put to use in a new context requires a more explorative mind set (Nonaka, 1994).

### 2.2.3 Differences in innovation behaviour

The need for innovation arises from the necessity to survive in a competitive and changing environment (Hamel & Prahalad, 1994). Cohen and Klepper (1992) add the difficulty for SMEs to capture the rewards of the innovation they have made of done. This difficulty should make for a different approach SMEs have to innovation and, implied, explorative behaviour that comes with it. If SMEs are expected to be less or unable to capture the rewards of innovation, it could lead for SMEs neglecting explorative behaviour.

Before exploring the differences between large organizations and SMEs and their innovative behaviour, a broad definition of the concept is required. Innovation is, for use in the report, defined as an “*idea, practise or material artefact perceived to be new by the relevant unit of adoption”* (Zaltman, Duncan, & Holbek, 1973). This broad definition does not address if (and how much) experience the organisation has with the innovation at hand and which adaptations have to be made. Therefore, a distinction between incremental and radical innovation is added, based on knowledge already available and the impact on the existing processes. This view is supported by existing research of the knowledge component of technology (Dutton & Thomas, 1985).

Radical innovation is to be understood as a clear departure from existing business models, with an increased level of risk due to adaptations in organisational structure and technologies in use (Daft & Becker, 1978; Duchesneau, Cohn, & Dutton, 1979; Ettlie, 1983; Hage, 1980). Incremental innovation is a more gradual process aimed at the adaptation of existing technologies that are tailored and improved as the need arises (Munson & Pelz, 1979; Pelz, Munson, & Jenstrom, 1978). The difference between both types is normally described as a graduate scale ranging from pure radical innovation to pure incremental innovation. The placement is normally driven by the amount of available knowledge within the organisation before or at the start of the innovation process (Hage, 1980).

Large organizations differ from SMEs in ways already described. Rothwell and Dodgson (1994, p. 310) mention differences based on structure, finance and behaviour: SMEs tend to be more responsive to change and flexible, while large organizations boast financial advantages, have the ability to use dedicated groups of technical specialists and are supposed to have better access to legal knowledge (Carson et al., 1995). Insufficient or a total lack of these resources will make it difficult to acquire and defend, trademarks, intellectual and property rights (Eden, Levitas, & Martinez, 1997, p. 63). An added effect is a missing, or ill-defined, a strategic horizon and a fundamental strategic planning process (Shrader, Mulford, & Blackburn, 1989). A common solution for SMEs seems to be to compete in niche markets that are too small for their large counterparts to enter. This offers a source of innovation as such, as there is a possibility to introduce ideas or practises known to other markets as a novelty (Carson, 1985; Christensen, 1997; Eden et al., 1997).

A clear distinction between innovation as a whole and the intensity of the innovation process in large organizations and SMEs is difficult to make (Hoffman, Parejo, Bessant, & Perren, 1998). There is however little doubt SMEs do innovate and that innovation is a key part of the success of SMEs in various sectors (Barber, Metcalfe, & Porteous, 1989; Cosh & Hughes, 1996; Herbert, 1988; Lawton-Smith, Dickson, & Smith, 1991; Rothwell, 1991). This leads to an overall conclusion SMEs are innovative as such, but acknowledges research done by Storey (2016) and Oakey (1993) that this does not necessarily holds for all SMEs in all fields of business. In addition, innovation is part of the success SMEs have, but innovation (or large expenditures on R&D) is not a guarantee for being successful (Cohen & Levinthal, 1990; Hall & Fulshaw, 1991; Henderson & Clark, 1990; Keeble, 1993a, 1993b; Moore, 1993; Oakey, Rothwell, & Cooper, 1988; Van de Vrande et al., 2009; Westhead, Storey, & Cowling, 1993). Hoffman et al. (1998) expect innovation by SMEs in small sectors or niches that are generally more industrious, nearer to the end customer and more incremental in nature. 'Innovation' does therefore not imply a radical new idea that pushes the envelope on every level or in every way. SMEs use existing technologies acquired by borrowing or (co)development in a new context due to lack of resources in order to develop a radical new idea or artefact themselves.

As the ported technology poses an innovation by itself, the ability to form these kind of networks and co-operations relieves strain on resources and close contact with suppliers and customers could form a competitive edge by itself. Bundling R&D effort (or procuring it from reliable partners), allows for strategic focus (Porter, 1985). Sivadas and Dwyer (2000) have found substantial benefits for innovation by bundled effort for both the collective as the individual participants. The individual participants tailor the standard idea or artefact to the specific need of their customers. Rothwell and Dodgson (1994, p. 310) point at the relative larger network and connections with external partners in R&S, production and marketing innovative SMEs possess. These connections are believed to directly influence the organisation in technological and strategic capabilities. They also need to be serviced on a regular basis by sharing technology or resources. However, there are contrasting views that state generalisation of an innovation is not always possible, and that strong integration within open networks is either unfeasible or impossible, rendering its importance diminished (Cannon, 1985; Devins & Kimbara, 1995; Jones & Beckinsale, 1994; Moore, 1989; Moore & Segaghat, 1992; Powell, Koput, & Smith-Doerr, 1996; Tang, Agnew, & Jones, 1996) .

Apart from hiring specific knowledge for a specific problem as a solution for the structural problem of not all expertise being available all the time, a structure that welcomes open innovation SMEs could benefit in other ways (Lichtenthaler, 2008; Sivadas & Dwyer, 2000). This open model proposed by Hurley and Hult (1998, p. 44) is aligned with the definition by Zaltman et al. (1973), but this notion assumes a model where the cost of innovation is shared by multiple organisations with the same or comparable aim. It differs on the subject of individual development, marketing, distribution and support by introducing a notion of shared effort and a willingness to cooperate on an internal and external level. In order to prevent issues caused by lack of funds or missing expertise and the opportunity to benefit from (slight adaptations of) innovations by the network (Acs & Audretsch, 1988; Chesbrough, 2006; Lichtenthaler, 2008; Van de Vrande et al., 2009; Vossen, 1998).

As a whole, these networks could help SMEs develop new competencies (Verhees & Meulenberg, 2004). This fact underlines the importance of these networks for SMEs (Carson et al., 1995). However, a drawback a network of SMEs sharing resources and capabilities has, is that it won't necessarily equips for a fundamental long-term planning process like large organizations do. These networks help SMEs develop strategic management capabilities in order to conceive and to develop future new core competencies (Shrader et al., 1989), rather than switching to another network.

Finally, it is important to notice that various small firms operate in niche markets that are not served by large firms (Carson, 1985; Christensen, 1997; Eden et al., 1997). This could mask the lack of a full understanding of leadership, technical capabilities, customer relations and enterprise resource management due to the SME being small enough to have this done by an incomplete management team. It is also fuelled by (lower tiers of) management being preoccupied with focussing on the next big innovation, or simply fighting everyday fires (Ang, 1991; Hudson et al., 2001).

## 2.3 Conclusion

Literature suggests exploitation and exploration are complementary activities in order to attain a competitive advantage, but difficult to be exercised simultaneously. Scholars seem to agree on the importance of ambidexterity and its contribution on long term performance, but differ on its achievability. In addition, the need for ambidexterity seems to hinge upon the type of environment in which organisations operate. Organisations in a more stable and traditional environments are expected to allocate fewer resources to exploration, as it returns little extra benefits for the investments made.

There is research that shows ambidextrous behaviour by the same person at the same time, as long as there are structures in place that allow managers to learn and operate in an continuous 'dual state' (Atuahene-Gima, 2005; Duncan, 1976; O'Reilly & Tushman, 2007; Smith & Tushman, 2005). Other research shows this dual state is almost only feasible in theory. In practise, organisations will revert to either state that fits them best and remain in one of the two states (He & Wong, 2004; Smith & Tushman, 2005; Tushman & O'Reilly, 1996). This research shows organisations seem to solve the inner tension in ambidexterity by nog being ambidextrous on a personal, but on an organisational level. In these instances, organisations solve the paradox by forming dedicated teams to address one of the aspects. Departing from everyone being ambidextrous all the time, these organisations develop a different structure in which they try to manage the contradictory challenges of combining exploitation and exploration.

Continuing down this path, research on SMEs and exploration, exploitation and ambidexterity has mostly been limited to large organisations that have the resources to raise a team for a job. Furthermore, organisations seem to have a bias to tend to daily operations over exploring new horizons due to management being rewarded on short term results. This behaviour seems to get amplified in SMEs, where the need for short term success is perhaps not as apparent, but the limited access to resources is expected to lead to a focus on exploitation as well. SMEs should therefore form an interesting object of study as the inner strain ambidexterity carries is expected to be amplified by the natural constraints of SMEs. As the main SMEs characteristics are informality and flexibility, SMEs should provide a stable foundation for innovation. On the other hand, the reactive mentality and lack of funds could severely hamper exploration and drive SMEs to a focus on exploitation.

The research question of SMEs being able to display ambidextrous behaviour in the first place, is therefore operationalised in three parts. First, all cases will be examined about the actual need for ambidexterity based on industry dynamics, context and managerial capacity. As the size of the organisation is thought to have effect on how it is managed. Moreover, is has an effect on how the organisation makes sense of its surroundings. Second, questions will be asked about the way management handles the strategic role conflict between exploration and exploitation. These questions will address (the history of) ways of funding the current capabilities and the funding of current and new activities. Third, questions will be asked about the nature of the displayed behaviour. Questions will be asked about how new possibilities are explored and the reasons the SMEs have to innovate.

These questions try to bridge the gap between SMEs thought to have a need for ambidextrous behaviour on one hand and, presumably, lacking the resources and capabilities to do so on the other. Answering these questions is will add to current knowledge as they consider ambidexterity under constraints that are relevant, but not necessarily present, or decisive, in large organisations.

It is expected that SMEs suffer from being small in such a way they will either focus on exploration and pioneering new markets or finding a niche and claiming it as their own. In more stable environments, SMEs are expected to form networks that allow them to jointly execute exploration, exploitation or both combined. Combining capabilities with other organisations is expected as a way of circumventing both the constraints of being a SME and the inner tension ambidexterity has. Size, finance and innovation are therefore deemed appropriate proxies for successful SME ambidexterity.

# 3 Research design

In order to answer the question if ambidexterity is present in SMEs and how they manage the inherent tension between exploration and exploitation under the constraints they face, this thesis will study five individual SMEs. These five organisations are taken from different industries with different dynamics on purpose to minimise the effect industry dynamics have on the outcome. The following sections will address the way data was collected and the effects the way of collection has on the outcome. After this, the way answers were coded, how they relate to existing literature and their use in the case analysis are discussed.

## 3.1 Data collection and sample

As the accumulated literature leaves room for further interpretation, this thesis will address the research question through a multi case study. This type of study normally results in a more robust answer than single case studies. Literature suggests SMEs are expected to perform less ambidextrous behaviour and less ambidextrous behaviour is found in environments that are stable.

This report relies on the application of a multiple case study, based on a snowball sample. The emphasis in this report is on empirical audit. By the addition of the notion of ambidexterity in the SME context, this report tries to shed light on the way SMEs try to both exploit and explore. As this report tries to add to width and context and deals with a complex subject, the choice for a multi case study was made (Dul & Hak, 2008). Cases are reviewed cross sectional at a comparable moment in time based on common and unique characteristics (Bryman & Bell, 2015).

In order to review a multitude of fields, SMEs were selected based on availability, willingness to participate, industry and background. To obtain a balanced view, SMEs were chosen from established firms in stable industrial environments (food and construction), a turbulent industrial environment (electronics) and financial and business services environments. Five organisations are investigated. All organisations were chosen on accessibility, industry and the environment they are in, ranging from perceived stable environments like the food or insurance industries to a highly competitive, high tech and fast pace industry the (LED) lighting industry has changed into nowadays, with construction and business services in between these extremes. Selection was made based on size, industry and accessibility to relevant people and figures. Three manufacturing organisations were selected, two of which are still operational in relatively stable environments, while one has folded her operations in the European area due to the very turbulent nature of the environment. The other two organisations are from a servicing background. One in business and one in financial services. Organisations larger than 500 FTE equivalents were regarded as large and organisations with less than 10 were considered micro enterprises. Both types were subsequently deemed out-of-scope.

Literature and the investigation of financial and strategic documentation within the selected SMEs form the primary source of data. A secondary source is formed by open ended, semi-structured interviews (Yin, 2013). Sampling of the SMEs and participants was done according to the typical-case sampling (Easterby-Smith, Thorpe, & Jackson, 2015), meaning interviewees were selected as 'most typical instances'. The following interviews were conducted in an informal setting and interpreted successively by comparing different views (Erlandson, 1993) in order to exclude the polite and (perceived) desirable answers (Easterby-Smith et al., 2015).

## 3.2 Sampling and method bias

Noted strengths of interviews are that they lead to targeted and insightful information. Major drawbacks are a bias due to poor questions, a response bias, incomplete recollection by interviewees and reflexivity (i.e. interviewees expressing what they think the interviewer wants or needs to hear) (Yin, 1994, p. 80)

### 3.2.1 Unit of analysis

As SMEs are 'small' by definition, subdividing them is deemed not very useful, although in medium sized enterprises, various business units could be identified. Therefore, in this report SMEs are regarded and studied as a single entity.

## 3.3 Interview analysis

All interviews were conducted in an informal setting. Of course, the interviewee was informed about the aim of the interview and its final goals. Transcription was done with the help of express scribe and coded using atlas.ti software following the Gioia methodology (Gioia, Corley, & Hamilton, 2013). This method was used as it aims to capture the way the interviewees make sense of their environment, rather than the interviewer. Therefore, all interviews were started with the emphasis on the interviewees telling their stories and the interviewer asking questions only to have interviewees elaborate on their answers or to get to another subject. Interviewees were selected on having either some financial or strategic role within the organisation.

It was made very clear although all interviews were recorded, all information was to be treated confidentially, anonymously and no links were to be made between an individual respondent and the final thesis. This, as well as the established relation between interviewer and interviewee added to a relaxed atmosphere in which ideas, critiques and recommendations flowed freely.

### 3.3.1 First order codes

The basic interview guidelines are included in the appendices. The interviews were subsequently transcribed and assigned to preliminary categories. Next, all answers were carefully studied again and classified. New categories could be proposed whenever other categories were insufficient or should be refined. In addition, all codes are marked with a 'qualifier' to express if an interviewee regarded the quote positive, neutral or negative. Positive and negative qualifiers were added when an opinion was expressed. Neutral qualifiers are used in all other cases. A list of codes and qualifiers are part of the appendices, and the list of first order codes is displayed below as table 1.

*Table 1: First order codes derived from the interviews*

| First order codes | Occurence |
|---|---|
| Action | 33 |
| Action taken | 24 |
| Board | 47 |
| Bootstrapping | 3 |
| Borrowing | 8 |
| Bottleneck | 3 |
| Bricolage | 1 |
| Chaos | 8 |
| Commercial | 46 |
| Competition | 39 |
| Competitive advantage | 22 |
| Compliance | 16 |
| Conflicting | 10 |
| Contradictory | 9 |
| Copying | 6 |
| Culture | 18 |
| Daily operations | 43 |
| Damage control | 13 |
| Delegation | 24 |
| Demand | 42 |
| Efficiency | 49 |
| Employees | 25 |
| Enterpeneurial | 18 |
| Entrepeneurs | 15 |
| Exploitation | 22 |
| Exposure | 15 |
| External Funding | 9 |
| Failure | 5 |
| Financial | 51 |
| Financial difficulties | 8 |
| Fire fighting | 10 |
| Flexibility | 20 |
| Following | 7 |
| Franchise | 2 |
| Funding | 17 |
| Goals | 22 |
| Growth | 27 |
| History | 14 |
| Improvisation | 21 |
| Influence | 8 |
| Innovation | 41 |
| Innovation management | 18 |
| Innovative behaviour | 22 |
| Input | 18 |
| Insufficient | 13 |
| Investment | 26 |

| First order codes | Occurence |
|---|---|
| Knowledge | 38 |
| Knowledge charactaristics | 6 |
| Lacking | 18 |
| Large volumes | 9 |
| Law | 5 |
| Long term | 19 |
| Loss | 8 |
| Lower management | 26 |
| Market | 35 |
| Market follower | 4 |
| Misfit | 11 |
| Necessity | 18 |
| Network | 23 |
| New context | 18 |
| New Markets | 21 |
| Operational flexibility | 15 |
| Operational level | 40 |
| Opportunity | 29 |
| Ownership | 20 |
| Partner | 39 |
| Process | 14 |
| Process innovation | 13 |
| Process optimalisation | 16 |
| Product innovation | 11 |
| Profit | 13 |
| Proposition | 36 |
| Quality | 31 |
| Quality control | 14 |
| Reliable | 6 |
| Reorganisation | 6 |
| Resources | 15 |
| Return on investment | 10 |
| Risk | 16 |
| Service | 23 |
| Signal | 14 |
| Size | 14 |
| Stability | 33 |
| Strain | 13 |
| Strategy | 37 |
| Structure | 45 |
| Support | 31 |
| Trial and error | 11 |
| **Total** | **1742** |

### 3.3.2 Second order codes

First order codes are grouped in second order codes meant to represent a fair view of relations between the first order codes and show the way first order codes appeared in conjunction during the interviews. First order codes are grouped together as the second order codes displayed in table 2.

*Table 2: Second order codes derived from the first order codes*

| Second order codes | Occurence |
|---|---|
| Capturing funds | 74 |
| Funding operations thoughout the organisation's existence | 120 |
| How activities are funded | 100 |
| How the organisation is managed | 114 |
| How the organisation makes sense of its surroundings | 133 |
| How to explore new possibilities | 121 |
| Making the most of currents skills and capabilities | 125 |
| Why innovate and how | 115 |
| **Total** | **902** |

Second order codes are used to bridge the gap between the answer interviewees gave and the concepts based on the literature study. For example: the ways the organisations have funded their operations in the past should touch on the problems SMEs are expected to face based on literature. Bonds between owners and organisations are expected to be tighter for smaller companies, as they pose more risk for investors. Based on literature, interviewee answers in smaller organisations should tend to either funding from founders themselves or by the organisation capturing enough funds in order to grow organically

The need for innovation is expected in industries that are less stable, setting organisations apart by taking on the image of being a partner that is able to find a solution for a customer’s problem. The polar opposite can be true as well: An organisation has innovated its operations to such an extent, it can provide the cheapest product that meets a customer’s standards.

A third group of second order codes is related to how the organisations are managed and how they make sense of their surroundings. Most of the answers given, were related to the size of the organisation the interviewee was in. Size seemed to have an effect on how people in it make sense of their surroundings.

### 3.3.3 Concepts

When the second order codes are grouped together, they form concepts. Beforehand, it is anticipated the concepts derived from the interviews will be similar to the three mentioned in section three: Size, finance and innovation. The links between first and second order codes and the links between second order codes and concepts are displayed in figures 1, 2 and 3.

For brevity, first order codes are chosen from the five most occurring first order codes that had a relation with the second order code and were considered meaningful. For example: the first order code “Operational level” was omitted from figure 1 in favour of “Knowledge” and “Financial” was omitted in figure 2 in favour of “commercial”. These alterations were made as the omitted first order code normally follows from the one that replaced it and their replacements are thought to give more insight in what the interviewees meant.

An interviewee explaining why and how knowledge is thought to have an effect on how the organisation makes sense of its surroundings, is deemed more useful than showing the effect of daily operations. “*We are investing in brand new knowledge and technologies because in five years, this is the way we are required to do our business like this*” is thought to give more insight than “*We run operation a bit on a seat-of-the-pants-basis*”

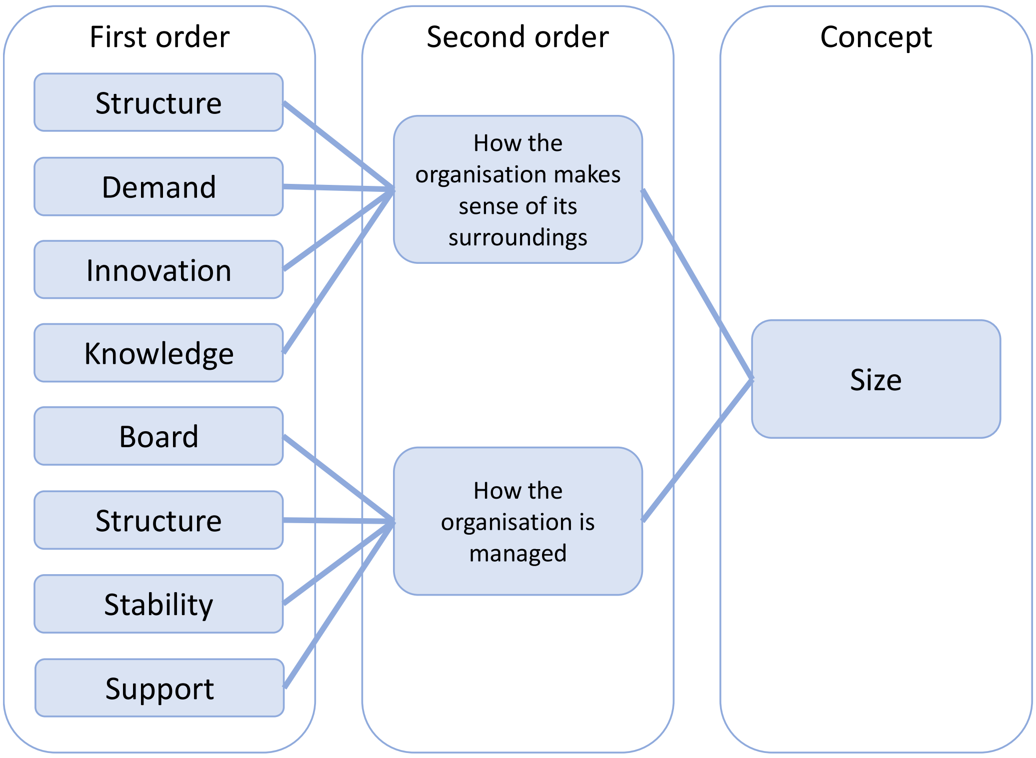


*Figure 1: First and second order codes contributing to the concept of size*

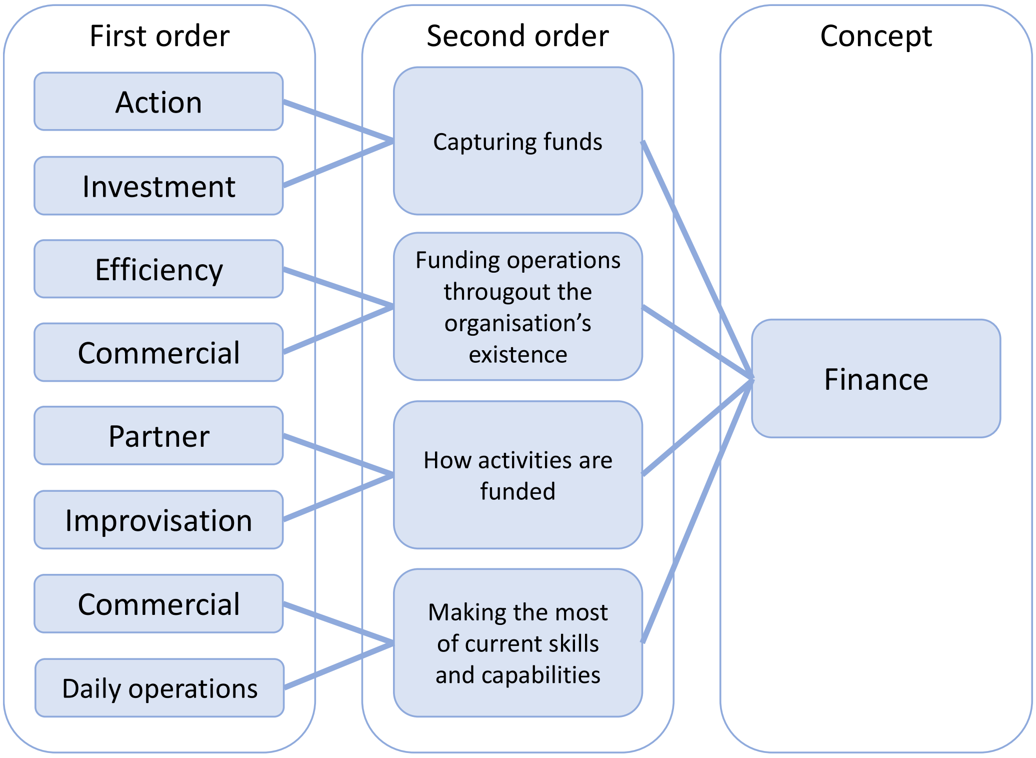


*Figure 2: First and second order codes contributing to the concept of finance*

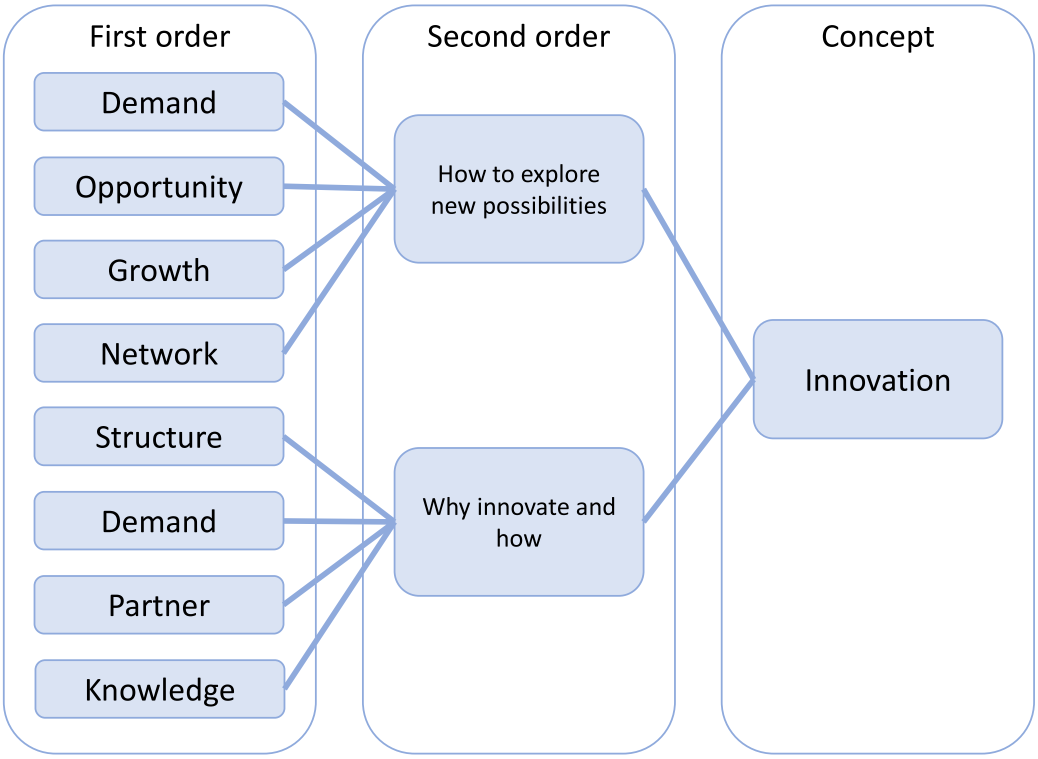


*Figure 3: First and second order codes contributing to the concept of innovation*

# 4. Description and results

Before going into depth and explore the concepts mentioned above in their context of the five selected organisations. A brief introduction of these five is given in section 4.1. Three of them are set in an industrial context, while the other two are set in servicing. One in financial and one in business services. After being introduced, an overview of how these five organisation handle ambidexterity is given in section 4.2. A cross cases analysis is done in section 4.3, with a description of what the organisations have in common and where they differ.

## 4.1 introduction to the five case companies

### 4.1.1 Organisation A

Organisation A operates the food industry. Starting in the early 1960s, this family organisation has reinvented itself multiple times, ranging from small retailing to industrial production of intermediate food products for both human and animal consumption. Facing stiff competition from all over the world, this Western European organisation has succeeded in capturing value based on quality and the creation of durable partnerships with its customers. This has rendered price competition from other continents all but useless on its domestic market and less decisive for international markets. Internationally, close partnerships with both suppliers and customers give the organisation an edge on quality and fulfilment of customer needs. This has paved the way for sustainable product innovation and effectively, allowing the organisation to carve out their position in what is regarded as the higher end of the market. The second generation has joined the organisation, with two members of the second generation being part of the four-person board, one being still active on another level in the organisation and three having cut their direct ties with the organisation, although some of their businesses still are (infrequent) customers, over the past few years. The third generation has taken its first steps in the organisation as well, by taking charge of part of the production process.

### 4.1.2 Organisation B

The second organisation is active in the construction industry. Producing wooden door frames and stair cases in a variety of finishes, this organisation is slowly recovering from its near bankruptcy only a few years ago. Switching from small orders to bulk contracts with larger housing associations, this organisation tries to develop sustainable channels for bulk production to fund its exploration of wood preservation. This preservation allows for soft woods being used instead of harder varieties and, in turn, for a competitive edge. Having been family owned for many years, the organisation has suffered heavily under the financial crisis and the subsequent slowdown in larger building projects. This forces the family to attract venture capital in order to keep the company in business, forcing them to accept non-family members to the board.

### 4.1.3 Organisation C

Organisation C is the last industrial organisation and has the ambition to be the driving force behind the LED revolution, producing incandescent and CFL replacements. Operating in a volatile environment, competing with established and large organisations, many of whom are household names across the globe, this small organisation relies on fast innovation in order to retain its significance in a turbulent market. This organisation has been founded on ideas and venture capital and has first relocated and off shoring its production plants to partners the Far East. At first, this organisation has retained R&D in Europe, but has eventually relocated it to the Far East as well. Nowadays, it only has a small legal and marketing force operating in Europe and Africa.

### 4.1.3 Organisation D

The other two organisations are rooted in services. The first is the largest of the investigated organisations. It provides insurance and services in the funeral industry. This organisation tries to balance the interests of an insurance company on one side with a service organisation geared to provide personal and thoughtful service to people in their hours of sorrow and mourning on the other. No original founders are present in the organisation nowadays and the entire company is run by professional managers. Established in the first part of the 21$^{st}$ century after a merger between a specialised insurance company and a small service association, this organisation is by far the largest in this study and near the upper boundary of what SMEs are thought to be.

### 4.1.5 Organisation E

The last organisation has been providing business services for many years including advice analysis and services to the food, make-up and other industries in need of assurance in food safety, helping their clients achieve consumer trust in their product. The organisation provides standard and tailor-made research for a multitude of bacteriological challenges and the CCP verification for their clients. This organisation is still headed by its founder, with other qualified members of the family providing advice and incidental instructions to regular staff.

## 4.2 Ambidexterity: Exploration and exploitation in five cases

### 4.2.1 Organisation A

As seen in chapter two, both sides of the ambidextrous coin are regarded as complementary activities competing on managerial attention and (financial) means. Organisation A has tried to divide management attention equally ever since the second generation joined the organisation. Managerial attention for both exploration and exploitation is split between the two brothers that have joined the board. They have effectively divided attention between exploration and exploitation based on their characters. This leaves the self-proclaimed "lenient" brother in charge of exploration and collaboration with existing customers to assess their current and future needs and the "structured" brother in charge of the factory operations. Historically, this was done by the founder himself, while tending to a much more volatile day trading business to acquire supplies. Being an innovator himself, this left the exploitation side of ambidexterity with less attention until the younger generation joined the organisation.

No explicit agreements have been made about which brother is supposed to do exploration and exploitation, they "*just focus on what suits their character*" and happen to complement each other in the process. When asked, none of the interviewees could say if ambidexterity was actively considered, although all could identify both types of behaviour within the organisation. After consideration, ambidexterity was deemed useful, but just never formally established. No indication was given that this will be done in the future, as the aspects of ambidexterity are part of the natural behaviour of different members of the board and therefore considered natural and complementary. "*We just do what we think suits us and is financially viable*"

Like most of the reviewed organisations and meeting the expectations raised in chapter two, Organisation A has only one level between board and operation with short and direct lines of command from boardroom level to the working floor. Both brothers are prone to test operational changes themselves before final implementation remaining hands on until (production) staff has shown their capability. As soon as both are confident the new product or way of operating suits their needs, the brother in charge of sales will trust his sibling to run a smooth operation and taking care of daily activities.

Resources are captured through development of strong formal and informal ties with suppliers and customers. This organisation has, for instance, fenced of a larger part of their domestic market by persuading customers to switch from supplies in a frozen state to fresh made product. This way of supplying is impossible to replicate by competition that is based more than a truck drive away from the customer's plant and effectively eradicates intercontinental competition in this part of the market.

Ownership of organisation A is one of the easiest to distinguish, being only surpassed by organisation E. It is still in the hands of the founding family and, although not directly owned by the founder anymore, there still are tight bonds between the organisations and the founding families.

Being the most hands on managed one, this organisation suffers the least from agency problems, with one brother either running operations or exploring new ventures. Strain caused by not knowing why these new ventures are so expensive is mitigated dividing managerial attention between both types of behaviour leaving each brother to tend to either exploration or exploitation on a daily basis.

Organisation A is one of the few organisations that have used bootstrapping in the past. It has founded its business on recovering a stream its suppliers formerly deemed 'waste', with little financial means changing hands as suppliers thought their waste was either worthless or even a financial burden due to the need to dispose it. Capturing these resources for very limited amounts of funds, organisation A created a win-win situation for its suppliers by paying them for goods they had to pay for themselves to get it of their premises.

Like bootstrapping, bricolage was mainly used when organisation A was established, making more from products that were considered waste, reusing them in an innovative way that was still profitable. The organisation has never abandoned these practises and actively encourage staff to find new use for existing machines and procedures.

Organisation A has a history of radical innovation based on Daft and Becker (1978), Duchesneau et al. (1979), Ettlie (1983) and Hage (1980) . When assessed with the findings of these authors kept in mind, the organisation still innovates radically at an irregular basis, but the interviewees in these organisations refer to their ways of innovation as "*not having altered the way we do business, we've just started supplying our customers with a products that are new to us.*", while *"just doing the same: tailoring to the customer's needs*". This stance seems to fit closer to the findings by Munson and Pelz (1979) and Pelz et al. (1978). When asked directly, nearly all interviewees agreed radical innovation was applicable earlier in the organisations history, but still chose incremental innovation as the way they innovate nowadays.

Interviewees agreed on the notion by Cohen and Klepper (1992) that rewards of their innovation are difficult to capture beyond the own niches, though organisation A feels quite comfortable in its own niche, having seen large suppliers first trying to enter and then all but abandoning the market.

### 4.2.2 Organisation B

Organisation B has seen a way of operating that is similar to what company A used to do, with a founder that leaves his mark on every aspect of the organisation. Exploring new ways of product innovation to improve wood preservation and enhancing the production line while running a company on the side.

Unfortunately, management feels this has led to an imbalance between exploitatory and exploratory behaviour in favour of exploratory behaviour and too much strain on the organisation, leaving it on the brink of bankruptcy. The new owner has shifted the balance between the two, focussing on return on his investment. While allowing the founder to keep working on the innovative solutions as before, the new owner expects lower management to keep an eye on the efficiency. Roles are more defined that in organisation A, paving the way between a clear distinction between innovation and efficiency, with the founder sometimes acting as a bridge between both. When compared with organisation A, ambidexterity is more formalised in organisation B, but there is still little need to develop this further. First of all, organisation B has to return the investments made before additional exploration is approved.

This organisation has effectively no levels between board and operation, with board members preforming operational tasks that are still assigned to them of because the feel like doing so.

Organisation B has sought strong bonds with their suppliers and customers in order to capture as much value as possible, for instance by investing in ways of spraying frames as efficiently as possible. This offers their customers speedy deliveries. It should also minimise both work in progress as the amount of finished product that has not been delivered (or called for) yet.

Organisation B is backed by venture capital, who left the original founder in place. Daily management is performed by hired management that is under close supervision by (private) people that have invested into these organisations. Demand for result are strict and either directly overseen by VC staff on the boards to guard VC interests or have strict guidelines for management to follow.

Like organisations A and E, organisation B does not suffer as much from agency problems. Here too the organisation uses the division of management attention to mitigate agency problems.

No mentions of current or past bootstrapping were made. Bricolage is still widely used within organisation B. It is mainly used to solve small operational problems caused by bad planning or tools and materials breaking or gone missing. Bricolage is used in organisation B by making use of softer woods that are joined with harder varieties to save weight and cost, while keeping structural integrity and quality unaffected. Organisation B is confident in its position in its niche and do not seek to spread innovations to other markets. This is mostly due to lack of funds.

### 4.2.3 Organisation C

As it operates in a very turbulent environment, organisation C has used a mix of venture capital, professional managers and a close-knit network of partners to help relieve the inner strain ambidexterity brings with it. It has started a joint-venture with one of their major suppliers to solve some of the demands made by one of its largest customers, switching their actual production from partners in China to India. Production is left to the Indian partner, while the organisation retained R&D itself to keep pace with the ever expanding and acceleration industry. After a while, taste and demand in the Far East got out of step with (Western) Europe, leaving the it a too costly market to compete with the A brands and the organisation withdrew from the European market, leaving further R&D and production to its partners and focussed solely on legal affairs (i.e. protecting patents) and marketing.

In essence, organisation C went through four different phases. First, it was a highly innovative exploratory organisation. Second, it used an ambidextrous model that focussed on innovation while producing as efficiently as possible. Third, the organisation used a model that with a partner network for production while retaining R&D and focussing on the explorative activities. Fourth, after offshoring both production and R&D the organisation focussed on the exploitation of its patent portfolio.

This organisation has, along with organisation D the most levels between the board and operational level. This is because it is based on multiple continents, making direct supervision very difficult to achieve and doing so on a daily basis is deemed totally impossible. Organisation C therefore differs from the other four by being removed a large distance from the operational side of the organisation, having first relocated the operation to the Far East and then having R&D following suit. This makes direct capturing of value created by efficiency difficult to achieve and the organisation reliant on the producing partner.

Organisation C is backed by venture capital as well. Like organisation B, the original founders were at first left in place, but were later replaced by VC staff on the boards to guard VC interests. In addition, strict guidelines were issued for management to follow. Special teams are raised in order to mitigate the agency issues caused by being far away from where production is.

Bootstrapping in organisation C was only used a partnership to establish their business, selling a large order to a partner (with payment up front) before sourcing for a plant that could produce it. No record of bootstrapping activities exists in organisation B and organisations D is founded in part by people associating and bundling financial means, therefore eliminating the need for bootstrapping.

Organisation C still uses bricolage on occasion to find new ways of making their products easier to produce, more energy efficient or aesthetically appealing for the consumer. Examples are (not limited to) the use of different materials that are part of the waste generated by different production lines the partner in charge of producing uses, cutting the cost to get materials delivered and creating the opportunity to recuperate cost incurred by other products and using parts that are meant for CFLs in LED products.

The innovation that is done in organisation C could be described as radical innovation. While still providing lighting products, this organisation has departed traditional ways of illumination favour of LED and has unlearnt formally useful skills in favour of new ones and found solutions for problems that are typical for LED lighting products, like adding a crown like element in their LED retrofit bulbs to solve a problem rooted in the nature of fitting the LED sources at the base of the bulb. The LED light sources need to be fitted at the bottom to disperse their warmth, but doing this will create dark spots on and below the 'bottom half' of the bulb as the LED light source is pointed away from its fitting and will shed its light only in that direction. Conventional bulb do not have this problem, as the filament is placed in the middle of the bulb and spreads light in all directions. This problem is solved by introducing a special element in the middle of the bulb and using that element to disperse light in all directions and fits the definition of radical by Zaltman et al. (1973) or Dutton and Thomas (1985), as it is a new item for the unit of adoption.

Along with organisation D, Organisation C is the only one to have resources allocated for defence of its intellectual property and to establish trademarks. It has also faced the drawbacks of the inability to defend its innovations.

Interviewees agreed on the notion by Cohen and Klepper (1992) that rewards of their innovation are difficult to capture beyond their own niche, although they aware that their niche is probably the mainstream market of the future. Large A-brands are already moving in (after having recovered their investments in CFL lighting and the traditional incandescent market falling out of favour fast) and organisation C is actively considering partnerships with some of the A-brands to help establish a critical mass. Organisation C pointed out the bulk of the innovation the organisation used to do by itself is now outsourced and off shored to the partners in the Far East. There is still research done, but on a much smaller scale that what the organisation used to do. The former R&D operation in Western Europe is either sent to the Far East, disbanded or performed by former employees that have started their own consulting organisations.

### 4.2.4 Organisation D

Business is stable for organisation D. Operating in an industry that has a statistically predictable size, the main challenges this organisation faces are formed by small local businesses that can provide *“more or less comparable services without dragging a massive bureaucracy around”*. Product innovation in this traditional industry is done in very small increments, leaving process optimisation as *“the only way of innovating anything*”. The organisation endorsed innovation and reported on the progress, but *“basically didn’t do anything with it”* rendering it a “*paper tiger*”. Exploitation is actively considered, although not satisfactory executed, with many individual projects earning enough to cover their own cost and for running the local operations, but too little to cover the expenses made for headquarters as well forcing headquarters to redirect cash flows from other activities. This, combined with the stable and traditional environment and the lack of managerial consequences, leads to the negligence of exploration on an operational level and window dressing higher in the organisation.

Like organisations C, this organisation has adopted a multiple layers between the board and daily operations. Organisation D is the largest in the sample and services two thirds of the Netherlands directly, barring management to supervise operations on a strict and daily basis.

While maintaining itself by organising similar tasks in groups of staff, Organisation D faces the inevitable consequence of a more layered and bureaucratic organisation. This is something the organisation is willing to accept as it is believed the more layered structure pools the talents of staff together and has a reducing influence on overall risk, with talented staff in places they can make the most of their talents. Reducing risk is something the board, which consists solely of hired managers, is expected to actively seek by both the stakeholders and the findings in chapter two. It is also regarded as the way organisation D could capture the most value.

Organisation D has the most stakeholders and its ownership is most difficult to distinguish. There are multiple financial backers as well as an association that forms the basis of part of the organisation, leaving its members with a say in how the organisation is run and demanding attention by the board in order to get informed. Funds in general (and cash flow in particular) are provided by banks (through mortgages) and results by the insurance company. This organisation comes closest to the financial models as proposed by Modigliani and Miller (1958, 1963).

Agency issues are widespread within organisation D and mitigated through special teams. Most of this effort is directed at providing financial information about efficiency, as organisation D seems to neglect exploratory behaviour. They organisation thinks this won't cause too many problems as environment doesn't require much innovation.

No mentions of bootstrapping within this organisation were made.

Organisation D differs from the other ones, as bricolage is not actively encouraged but still occasionally used at operational level. Most of the time these instances of bricolage are used as a way to divert attention in order to prevent families getting upset. In consequence, bricolage is merely tolerated and not encouraged: staff is supposed to have all projects managed in such a way all required elements are in place and in time, eliminating the need for bricolage.

Along with organisation C, organisation D Has resources assigned for the defence of its intellectual property. Having a franchise formula in place, organisation D has protected its intellectual property in the past and has acted on infringement.

Like organisation B, organisation D has no desire to leave its niche as it realises their departure from the niche will pit them with every large insurance company around. This is something organisation D is willing to avoid at all cost, as they have spent nearly a decade to buy the portfolios the large insurers had in the niche organisation D operates in and some of these acquisitions had a larger financial impact that was, in retrospect, inviable.

### 4.2.5 Organisation E

Finally, organisation E has indicated the environment they are in used to be stable, with standing government policies dating as far back as the 1950s, but has become increasingly volatile in the last few years due to advancement in technology to deliver the same results by other ways and in shorter amounts of time. This has triggered the need for expansion into new technologies, exploring the ways these new methods could be used and the acquirement of staff, tools and machines to provide these services. These new technologies are explored by the founder and owner of the organisation, with help of staff and external consultants. The founder mainly divides time between the exploration of new technologies and the acquirement of new customers. On an operational level, the founder is still involved in quality assessment (e.g. machines that are about to re-enter circulation after being repaired need to be thoroughly checked before being allowed to use) and has a seat at the weekly operational meetings, although he does not preside these meetings anymore and has delegated this task to operational management.

When explained, the founder has deemed the concept of ambidexterity as a useful tool to run the organisation and has effectively (but unknowingly) delegated most of the exploitational behaviour to operational management based on the capabilities of other staff and the founder’s interests. Exploration is mostly done by the founder himself, although has agreed new technologies are changing on a fast pace and that input from staff is highly appreciated and explicitly encouraged, paving the way for other staff to explore current and new technologies as well.

Organisation E has no levels between board and operation. Here too, board members preform operational tasks that are still assigned to them of just because they find those tasks interesting or enjoyable.

Like organisations A and B, organisation E has forged strong bonds with its suppliers and customers, many going back for decades. These bonds will provide new opportunities, help develop existing business. It has lead the organisation into venturing into new business area’s that weren’t considered worth entering or even known to exist before.

Ownership of the organisation is the easiest to distinguish, being still in the hands of the founder. This makes organisation E the one with the least amount of agency problems, as most is still overseen by the founder/owner, although daily operations are delegated to operational staff.

Organisation E is, alongside A the only organisation that has used a structural form of bootstrapping in the past. It has started operations in a bootstrapped setting and using facilities provided by a customer that were ‘rented’ by performing analysis at for this customer.

Like organisation A, organisation E mainly used bricolage at its establishment established, using the founder’s attic as an improvised laboratory. Here too, these practises were never abandoned and are still actively encourage staff to find new use for existing machines and procedures.

Here too, there is a history of radical innovation based on Daft and Becker (1978), Duchesneau et al. (1979), Ettlie (1983) and Hage (1980). The interviewees agreed the organisation still innovates radically at an irregular basis, but here is referred to innovation as “*doing the same things, just with new techniques*”. Like in organisation A, this stance seems in line by Munson and Pelz (1979) and Pelz et al. (1978) and all interviewees agreed radical innovation being applicable.

Although there are little means available to defend intellectual property, organisation E has faced problems without being able to defend itself properly: one interviewee stated his organisation has co-produced a product that is well known in the market nowadays, but packaged slightly different then what his organisation and its partners came up with. Reason being the intellectual property was not properly protected and one of the suppliers ran off with the idea, formed a competing team that got to the market as well and persuaded the largest supplier in the market to join its team, effectively crowding out the other (and earlier) idea.

Organisation E may operate in something that is called a niche market, but faces stiff competition from companies that are orders of magnitude larger then it is. This threat is somewhat mitigated by orders from organisations that are in totally different markets (like machine construction, NGO's and other non-profit organisations) and organisation E considers all these opportunities when they arise, unknowingly consistent with Carson (1985; 1995), Christensen (1997) and Eden et al. (1997).

## 4.3 Cross case analysis

### 4.3.1 Structural and philosophical aspects

All organisations are proud of their informal and swift communication lines, with all boards making themselves accessible for (parts of) the entire organisation on a regular basis. They also addressed their small size and tighter financial situation as a burden on their innovative capacity.

All interviewees agreed on the need for a kind of strategic planning process, but most dismissed regular strategic sessions as they were deemed "*forced*", "*unwieldy*", "*undirected*" and "*in the way of running operations*". Or, as a combination of most of these, "*Strategy does not come when you want it to come, so there is no need to lock yourself in a room and tell each other that* 'we are going to do strategy, right now.' *That just doesn't get you anywhere and only wastes time*". Organisation D differed from the other four by having regular strategy meetings with the board and operational management to formally make room for exploration and creating a small team dedicated to exploration, with the others either focussing on either exploration or exploitation and leaving the other to other members of the board or operational staff.

With the exception of interviewees in organisation D, all interviewees agreed on the structural differences when compared to large organisations: They mentioned the lack of funding available in order to make innovation happen quicker (although organisations A and B thought the effect innovation has on efficient production could at times be a reason to slow the innovative effort down). All interviewees deemed the simpler structure of their organisations more flexible and resilient for innovation to happen and the advantage larger organisations have when it comes to expert staff easily mitigated by sourcing experts within their networks or sharing these experts with their partners (which seems to be consistent with Van de Vrande et al. (2009).

### 4.3.2 Financial aspects

Funding is one of the prominent differences between the organisations in this study, with some reliant on external funding, some financing themselves through organic growth, some diverting costs to partners in their network and some funnelling funds from one part of the organisation to the other.

### 4.3.3 Innovation

All organisations in this study have indicated they innovate in some shape or form. When distinguishing between incremental and radical innovation, organisations B and D only perform (limited) incremental innovation based on their production processes and pushing the envelope only small distances. Their innovation is either hampered by lack of funds or focus (organisation B) or by a traditional environment and lack of managerial interest (organisation D).

All interviewees agreed on innovation being a fundamental part of their success (though organisation D did not point out what they thought these innovations were or by whom these innovations were done). Organisations A and E pointed out innovation in their current context mostly means implementing existing practises that are new to their organisations of transporting their expertise to a new context and organisation B thought current innovation consisted mostly of product and production refinements and little radical innovation.

When confronted, most interviewees agreed with Hoffman et al. (1998) that innovation by SMEs is expected in small sectors or niches that are generally more industrious, nearer to the end customer and more incremental in nature, with interviewees from organisations A, B and E pointing out this their way of (current) innovative practise: No radical new idea that pushes the envelope on every level or in every way, but a way of addressing the needs of the customer in a way that is as efficient and fitting as possible, while borrowing from partners of other industries.

Borrowing technology from partners or other industries is accepted practise for all interviewees, as long as it solves a problem or helps a customer, supplier or other partner out. As one interviewee thought:

> "*You do what you need to do to help solve the customer's problem, even if you think they are being unreasonable, because you want do business with them during next month and next year. What you need to understand is, that in a long-term relationship, sometime you win and sometimes you lose. That's no problem, as long as you losses are less than your winnings and their losses are less than their winnings. There's no zero-sum game here.*"

When confronted with Sivadas and Dwyer (2000) and Rothwell and Dodgson (1994) this interviewee simply nodded and thought it was elegantly put.

Interviewees form organisations C, D and E welcomed the sharing of experts between partners while organisations A and B did not reject the idea, but were a little more cautious. These organisations work in niches where competitors that are located close by could (and often do) use the services of the same experts and are therefore in the position to easily copy innovation that is not protected accurately and, as the interviewees have indicated, adequate protection of intellectual property is very difficult to achieve.

Most interviewees concluded at the end of the interview there was a need for ambidexterity. Interviewees from the smaller are however not prone to actively implement it. The current way of performing ambidextrous tasks is deemed adequate. As expected, most SMEs suffer from being small and will either focus on exploration or exploitation. In stable environments like the one organisation D is in, a focus on exploitation is often mentioned. Here, SMEs compete stronger on the available customers and try to force competitors out of the market. At first, this seemed to contradict the expectation based on literature of stronger networks in more stable environments. Interviewees clarified this by adding they would consider networks with small (local) organisations, effectively acting as an innovation nucleus as described in literature.

All SMES thought industry dynamics could have an effect on their ambidextrous capabilities, mainly but influencing their exploratory behaviours. Most also agree on efficiency being a major part of successful exploitation and that failing exploitation will hamper further exploration. A full visual overview of the results is presented in table 3.

*Table 3: Overview of the organisations examined*

| | | A | B | C | D | E |
|---|---|---|---|---|---|---|
| General | Age (years) | 50 | 35 | 10 | 15* | 25 |
| | Industry | Industrial (Food) | Industrial (Construction) | Industrial (Electronics) | Services (Financial) | Services (Business) |
| | Turbulence | Low - Moderate | Low | High | Low | Moderate |
| | International sales | Yes | No | Yes | No | No |
| | Foreign offices / plants | No | No | Yes | No | No |
| | Number of People | <250 | <100 | <350 | <500 | <50 |
| | Ownership | 2nd generation entrepreneurs | VC + 2nd generation entrepreneurs | VC | Various, including non-profit | 1st generation entrepreneur |
| | Structure | Flat | Flat | Network | Divisions | Flat |
| | Number of departments | 10 | 5 | 15 | 20 | 5 |
| | Number of levels between operation and board | 1 | 2 | 4 | 4 | 1 |
| Management attention | Direct supervision | Yes | Moderate | No | No | Moderate, only when deemed appropriate |
| | Direct influence staff has on improvements | Moderate | Low | Low | Low | High |
| Innovation | Why innovate | To serve customers and defend our niche | Because we want to | Critical for survival | Because it looks good | Critical for survival |
| | Innovation is done by | All board members | Founder | Dedicated team | Dedicated team | Founder and (external) experts |
| | Has this organisation reinvented itself before | Yes | No | Yes | No | Yes |
| | How to explore new posibilities | Customer driven, copying and trial and error | Process driven, copying and trial and eroor | Product driven, technological improvements, new solutions for new problems and adoption and adaption of solutions from other industries | Image driven as the industry is very conservative. New products and services are rarely introduced, but advertised all the time | Customer driven. New possibilities are explored though partnerships or by partner refferral |
| | How to exploit current capabilities | Focus on solid customer relations and efficiency | Focus on efficiency and obtaining long term contracts | Licencing | Focus on efficiency while giving the impression of tailormade solutions | Focus on solid customer relations and efficiency |
| | How to balance exploration and expoitation | Activities divided between board members | Activities devided between board members | Production delegated to partners. First focus on exploration and later on exploitation | Exploration delegated to special teams | Exploitation delegated to other management levels |
| Financial | Capturing funds | Organic growth | VC and organic growth | VC, partnerchips and organic growth | Banks and capital gain | Banks and organic growth |
| | Funding of operations | Organic growth | VC and organic growth | VC and partnerships | Banks, capital gain and operational results | Organic growth |
| | Current way of funding activities | Organic growth | VC and organic growth | VC | Banks and operational results | Organic growth |
| | Making the most of current skils and capabilities | Organic growth | Organic growth | Partnerships | Operational results | Organic growth |

* Organisation D was formed by a merger of two older organisations early 21st century.

# 5 Discussion and conclusion

This thesis examines the actual need for ambidexterity within SMEs, based on their context and managerial capacity. Literature regards exploitation and exploration are regarded as two side s of the same organisational coin and therefore complementary activities in order to attain a competitive advantage. Being two competing concepts on managerial attention and means, the ambidextrous state is considered very hard to establish, let alone maintain, for larger companies.

Being small by definition, SMEs are thought to face the same difficult road to ambidexterity, while being constrained by hard to obtain financial means and an increased burden for, presumably understaffed and under equipped, management, all adding to a task that was challenging from the start. This forces organisations to face inconsistent expectations about behaviour and an expected efficient display of existing skills and competencies, while acquiring (and experimenting with) new ones at the same time, creating a strategic role conflict in the process.

Based on the five cases that were examined, the way SME management handles the strategic role conflict between exploration and exploitation is by the same solutions a larger company uses, with the main difference the allocation of exploratory and exploitatory tasks is based on very different and illusive criteria, like personal preference of personality. Larger organisations tend to balance this role conflict by establishing separate teams, the SMEs in this study have either divided the tasks between board members, or tend to delegate exploitative tasks and behaviour to lower management or partners outside the organisation while focussing on innovation themselves. The nature of the displayed behaviour are connected to the skills and preferences of individual board members, with a notable preference towards innovation.

This thesis therefore concludes that ambidextrous behaviour is present within the investigated SMEs. It also concludes that there is a need for ambidexterity in SMEs like in large organisations. Third, the perceived difficulties experienced by larger companies are amplified by the constraints SMEs have by definition, but none of the interviewees felt that they were being too constrained in such a way. Fourth, not all SMEs consciously consider a need for ambidexterity, they just handle the inherent tension between both concepts as need occurs. The SMEs that explicitly manage tension between exploration and exploitation, do not do so because of the inherent tension of the concept. It either 'feels good' or is driven by other circumstances.

## 5.1 Managerial implications

The findings of this study could strengthen the SMEs that were examined by providing solid theoretical ground for actions that ‘felt right to do’. Using the findings in this study, the organisations that were examined could either strengthen their exploitatory behaviour of try to pool their exploratory efforts with other trusted partners. For the SMEs involved, this thesis could provide a touch stone for future strategy by explicitly designating the tasks for individual people or teams that are tailored to their specific capabilities.

## 5.2 Limitations and further research

It must be noted that intimate knowledge of either the SME themselves, the people working there or a combination of both existed. While this paved the way to acquire detailed information on company strategy and financial performance, the ability to judge the answers given by the interviewees on their merit and adds to more open and honest answers (as the author had previous knowledge of a significant part the subjects and their performance, there was less need to cover statements or opinions), there is a distinct possibility of bias both with the author and the interviewees.

Also, the interviews were conducted at about the same point in time and although the organisations interviewed are not of the same age, there is a possibility of the organisations being too incomparable to draw general conclusions. Therefore, the lack of a longitudinal component that could help determine the evolvement of each individual case over time is also regarded as a limitation to this report.

A third issue was the unexpected effect organisational size seemed to have on the people in it. During the interviews, size and scale (or lack thereof) of an organisation seemed to have a profound effect on how interviewees view and make sense of their surroundings. Stating interviewees commonly reverted to something along the line of what is in Dutch called a ‘Calimerocomplex’ (which basically is a light version of the ‘short man syndrome’), is a little harsh. However, more than one interviewee referred to competition with larger competitors as “them being large and us being small is not fair”.

Further research should be conducted to broaden the amount of SMEs studied in this way and, if possible, for a longer amount of time in order to mitigate both limitations mentioned above.

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