The Evolution of Organizational Ambidexterity: The Role of Top and Middle Management in Organizational Renewal

Abstract

This study examines how structural and contextual ambidexterity affect an organization's ability to shape a hypercompetitive environment, and how different hierarchical levels influence this process. Even large, successful global companies tend to fall into the exploitation or exploration trap, and finding the right balance in a hypercompetitive, dynamic environment is even harder. Contemporary literature suggests managing a dynamic environment requires organizations to empower regional headquarters, middle and frontline managers. This, however, increases organizational complexity and inertia, and may therefore have adverse effects on the organization. This study describes the microfoundations of organizational ambidexterity, through a case study of a global IT company's journey towards cloud computing. The case suggests that contextual ambidexterity generates huge tension, and requires strong social support and performance management. A successful structural separation fosters contextual ambidexterity, and both are needed to enhance organizational resilience. Active top management helped the organization to shape the industry, and active support systems may substitute for active middle management during controlled renewal processes.

Keywords: cloud, on-premises, ambidexterity, renewal, Fourth Industrial Revolution, transformation

1. Introduction

Ambidextrous organizations pursue exploratory and exploitative activities simultaneously. They are able to recognize interdependencies and capture synergistic value between the two activities (Raisch and Birkinshaw, 2008). Despite the growing popularity of research on organizational ambidexterity, many scholars agree that its theoretical development is still in its infancy. For example, Birkinshaw and Gupta (2013) and Turner et al. (2013) pointed out that theory could be advanced by investigation of the multi-level interdependences between individuals, groups, and organizations, and how the interfaces between exploration and exploitation are managed at various levels. O'Reilly and Tushman (2013) argued that we need to better understand how managers make choices and appraise the tradeoffs between exploitation and exploration, and how organizations may assist or hinder managerial decision-making. Barney and Felin (2013) noted that the unit of analysis should be individuals, because organizational ambidexterity reflects their collective actions.

This study makes two main contributions. First, it focuses on high-technology industry, which forms the backbone of the new digital economy. Competition in this sector is knowledge-based and fast-paced, and speed of movement is essential to capitalize on opportunities (Kuckertz et al., 2010). Visionary leaders who understand that "the searing heat of today's globally competitive environment can quickly melt winners into losers" aim to build flexibility into their organizations to help them to cope with this pressure (Meyer, 1998). The study therefore provides insights into the challenge of balancing exploitation with exploration. Firms in high-technology industries tend to show high rates of innovation and frequent venturing activities, but not all high-technology ventures are equally ambidextrous. It is therefore important to understand factors that support corporate ambidexterity among these firms.

Second, there has been limited research into the role of middle management and its impact on organizational ambidexterity. Zimmerman et al. (2015) used an inductive multilevel case study to highlight that most studies implicitly assume that senior executives often identify the need to become ambidextrous and design structures and contexts to implement their choice, but an alternative, emergent (or bottom-up) process may also lead to ambidextrous behavior in which frontline managers take the initiative. Volberda et al. (2001) drew scholarly attention to the “middle management” perspective, designed to complement the upper echelon perspective.

This study therefore advances our understanding of strategic management theory by answering the question of the role of top and middle management in ambidextrous organizational behavior at the time of the Fourth Industrial Revolution.

2. Literature Review

2.1. Ambidexterity

The basic dilemma of organizations, according to Turner at al. (2013), is that they must find ways to balance exploitation with exploration. That is, they must ensure the viability of their current businesses but also devote enough energy to securing future viability. The ability of an organization to both explore and exploit is referred to as organizational ambidexterity (Liu and Leitner, 2012). March (1991) identified exploitation with refinement and efficiency, and exploration can be broadly defined as activities a firm undertakes to alter its path dependence, including experimentation, discovery, and innovation. March

(1991) also pointed out that over-estimating the short-term benefits of exploitation may lead to poorer long-term performance, but overinvestment in exploration may reduce organizational longevity by sacrificing operational excellence. Excessive focus on either option can therefore lead to failure (Levinthal and March 1993; O'Reilly and Tushman 2011).

The top management team has a primary role in resolving the tensions between exploration and exploitation (Mihalache et al., 2014). O'Reilly and Tushman (2008) highlighted that the extent to which a firm can pursue exploration and exploitation simultaneously depends to a large extent on the ability of senior executives to manage the complex tradeoffs required. Empirical investigations have shown that surprisingly few established companies manage to balance these activities over the longer term (Raisch, 2008). Beer and Nohria (2000) pointed out that few companies manage the process as well as they would like.

Benner and Tushman (2003) noted that exploration and exploitation require very different organizational support, which makes their simultaneous pursuit extremely challenging. For organizations to be ambidextrous, they must be both consistent and inconsistent in their actions. They must achieve a balance between small and large, centralized and decentralized, and short- and long-term focused (Benner & Tushman, 2003). The ability to make the connection between specific knowledge and commercial opportunities requires a set of skills, aptitudes, and insights that is not possessed by everyone to the same extent (Hortovanyi, 2010; Venkataraman, 1997).

According to Liu and Leitner (2012), organizations have a bias towards exploitation, because they tend to find comfort in routines, compared with the high risks and costs often associated with exploration (Andriopoulos & Lewis, 2009). It is also difficult for organizations to cycle between periods of exploration and exploitation. After long periods of exploitation, organizational members tend to have fewer of the skills required for exploration, and they will therefore use very narrow definitions of organization problems (Gupta et al., 2006).

Given the difficulty of shifting from an exploitative to an exploratory mindset (Gupta et al., 2006), it is important for senior managers to be aware of the pitfalls of temporal separation. Instead, they should work towards developing a project context that facilitates the transition and effective integration of exploration and exploitation.

2.2. The role of directing organizational attention

The attention-based view (ABV) has highlighted the role of organizational attention in strategic decision-making and adaptation. According to the ABV theory, organizational attention generates a firm's strategic agenda, and determines the set of alternative actions that guide the allocation and deployment of resources (Ocasio and Joseph, 2005). The ABV is often regarded as an information processing perspective, in which managerial attention is critical to the organization's information processing (Walsh, 1988).

Yu et al. (2005) found that organizations provide attention-directing stimuli that direct members' attention to selected aspects of the organizational environment, to the exclusion of other aspects. Thomas et al. (1993), in a piece of empirical research, also confirmed that top decision-makers scan the environment for information in line with their perceptions of need. Ocasio (2011) viewed attentional engagement as an intentional process, when managers allocate cognitive resources to guide sense-making activities.

Sense-making is about the interplay of action and interpretation, rather than the influence of evaluation on choice. When action is the central focus, interpretation, not choice, is the core phenomenon (Weick et al., 2005). Sense-making also starts with chaos (Weick et al., 2005). More generally, in the early stages of sense-making, phenomena have to be forcibly carved out of the undifferentiated flux of raw experience, and conceptually labeled, and given a meaning, so that they can be communicated to others. Power holders constitute and institutionalize meaning, so that assumptions, interpretations, and perspectives become the generalized interpretive frame and cognitive map of organizational members (Ranson et al., 1980).

Once sense-making occurs, the world becomes simpler, and the agreed meanings will inform and constrain organizational actions. The top managers' readings of the environment hold the key to organizational strategic actions and adaptation models (Thomas et al., 1993). This interpretation–action link is also reflected in the work of Ranson et al. (1980) and Tushman and Romanelli (1985), who noted the importance of the link between managers' understanding of their environment and organizational actions. This paper considers organizational actions as the result of top managers channeling the attention of organizational members.

In dynamic environments, key aspects of strategic renewal, transformation, radical innovations, and environmental disruptions require managers to reconsider their strategic agendas, and reconstitute the firm's attention structures. Strategy formulation is therefore a relatively fluid, guided evolution process (Ocasio and Joseph, 2005).

Entrepreneurial managers can handle dynamic environments better than administrative managers, and are also better able to direct organizational attention to renewal efforts

(Hortoványi, 2010, 2012). Dynamic capabilities (Teece et al., 1997) are essential to transform an organization when its existing products or markets are becoming obsolete, and competitive advantages in an industry are changing radically (Hortovanyi, 2016).

Organizational attention is often measured in terms of communication through official texts, like letters to shareholders, minutes of boards of directors, and through observations of meetings or informal events (Tuggle et al., 2010; Yu et al., 2005). Researchers have argued that rhetorical tactics and talk that focuses organizational attention towards a strategic change are powerful tools for the top management team. They are used to shape the ways organizational members think and act, mobilize them towards certain actions, increase their sense of urgency about change, and therefore minimize resistance to change.

Ocasio et al. (2017) noted that attentional engagement is shaped by communication, but researchers have tended to overlook the role of social interactions in shaping the attention of the top management team. They proposed that the ABV should be studied as a social phenomenon, in which the attention and orientation of organizational actors is shaped by communication. Communications and social interactions, both within and between communication channels, allow organizational participants to come together to attend to and orient themselves in line with changes in strategic direction, whether the change is planned or emergent.

An analysis of different forms of communications, including written and oral, can provide a retrospective map of the rhetorical tactics and also shape the strategic agenda of the firm. Studying organizational attention therefore helps us to both understand how strategic agendas are articulated and shared throughout the organization, and gain insight into transformation dynamics.

2.3. The role of middle management and regional headquarters

Liu and Leitner (2012) noted that most studies on ambidexterity have been conducted at the organizational level, though many organizations use organizational teams for knowledge-intensive work such as designing new products, developing novel technologies, and delivering customer value in new ways (Haas, 2010). These teams are also responsible for streamlining work practices and refining existing knowledge to satisfy existing customer needs (Gilson et al., 2005).

There is a growing recognition that middle managers often play a critical role in influencing exploitation, or renewal of firms (Volberda, 2017). Cegarra-Navarro et al. (2011) argued that individuals within an ambidextrous organization should be capable of ‘unlearning’ outdated information or processes and ‘relearning’ updated knowledge. An individual involved in exploration must relearn to adapt to the demands of existing routines and processes when moving between exploration and exploitation. The concept of contextual ambidexterity focuses on creating an environment that empowers individuals to make their own choices between exploration and exploitation activities, on a daily basis.

Drawing on both the upper echelon and middle management perspectives, Volberda (2017) suggested developing the theory through multi-level research that recognizes the importance of both the firm’s most senior executives and its middle managers in strategic renewal. O’Reilly and Tushman (2013) argued that we need to better understand how managers make choices between exploitation and exploration, how they assess and manage the tradeoffs, and how their organization assists or hinders them in making these choices.

Jansen et al. (2016) conceptualized team ambidexterity as the extent to which teams engage simultaneously in exploratory and exploitative learning. This means that their members search for, experiment with and develop new knowledge and skills while also refining and recombining existing ones. They argued that studying ambidextrous teams, and their ability to combine exploratory and exploitative learning could provide valuable new insights into how organizations may develop novel technologies and products while improving existing ones. Research has shown that ambidextrous teams often show self-reinforcing tendencies and inherent tensions, and there is still no thorough understanding of how and under what conditions organizational teams may be able to resolve tensions and achieve ambidexterity (O'Reilly and Tushman, 2004; Raisch et al., 2009).

Studies have shown that multinational enterprises (MNEs) are one of the world's most innovative organizational forms (e.g. Lessard et al., 2016) with sources of invention, innovation, and manufacturing capability spread around the world. The value-creating business units of MNEs are often connected at regional, rather than global, level and supported by a regional headquarters. Cuervo-Cazurra et al. (2017) argued that research on complex organizations fails to address the issue of subsidiaries located in particular countries and regions and that tend to compete and operate regionally, rather than globally. For example, business units located in the EU trade with other European businesses, while North American business units trade in North America. Operations within regions are relatively large, complex and sufficiently different from other regions that opportunities for specialization within the region are greater than along worldwide product lines.

The strategic importance of each region, combined with the different market characteristics faced by MNEs in each region, resulted in the development of regional headquarters. These oversee the operations of a large number of foreign subsidiaries with relatively large operations, and act as a management centre in the region. They therefore make decisions and coordinate their subsidiaries by controlling the flow of parts and products, and also transfer knowledge on local operations and markets to the MNE (Rugman, 2005).

This structure evolved for commercial reasons, but some scholars argue that it is supported by technological and social developments. Manufacturing and services, driven by new technologies, tend toward local production. They are slowing, and may even be reversing, globalization (Hammes, 2016). Recent trade flow statistics indicate that these factors have already slowed globalization, and this is expected to continue or accelerate, increasing the role of regional headquarters.

2.4. Dynamic environment: The Fourth Industrial Revolution and cloud solutions

The Fourth Industrial Revolution, or Industry 4.0, is distinct from the previous industrial revolutions in terms of speed, scope, and systems impact. The speed of current breakthroughs has no historical precedent. When compared with previous industrial revolutions, the Fourth is evolving exponentially rather than linearly (Schwab, 2015), and disrupting almost every industry (Hammes, 2016). Its effects are expected to be mainly positive on productivity, economic opportunities and the future of work (Caruso, 2017).

These changes are attributed to the new cycle of innovation stimulated by the development of information and communication technologies.

The traditional way of using information technology (IT) systems within companies was to 'buy and build your own'. The company purchased and installed hardware and software to run the applications required to support its business. The IT department was responsible for installing and maintaining the hardware and software stack, applying new patches and upgrades, though many companies partially or fully outsourced these tasks to external contractors. The hardware was usually installed within the premises of the company in server room(s), so this model is described as being on-premises.

The development of high speed networks and software solutions at the beginning of the 21st century allowed companies to start using IT differently. They no longer needed to have their own servers on the premises. Instead, they could obtain IT support from remote servers, in the form of Software as a Service (SaaS). This reduced the need to invest in physical infrastructure to store data or run business applications. Companies could contract with external providers and access their services through the internet, via 'cloud computing' (Furht and Escalante, 2010, Buyya et al., 2010). The advantage of cloud over on-premises solutions is that they can be rapidly supplied and released with minimal management effort or service provider interaction (Mell and Grance, 2011).

Cloud solutions also have other benefits. They decrease complexity on the customer side. The cloud provider builds and manages the data center(s), purchases and maintains the hardware and software, and ensures that the system is protected against hacking and intrusion. With the cloud, enterprises can flexibly scale-up their business operations, and the cloud provider will supply services to meet demand (Truong, 2010). Unlike on-premises IT solutions, which are usually purchased and operated by the IT department, cloud solutions are often purchased by functional areas apart from IT.

Khanagha et al. (2014) argued that as early as 2009, cloud computing was a potential source of disruption in the telecommunication sector, with new offerings likely to make existing alternatives obsolete. Retrospectively, we can see that some cloud models have become popular over the past few years (www.statista.com, 2016). The cloud market is growing significantly faster than the on-premises IT market. According to IDC (IDC, 2017), the global cloud services market grew 28.6% year on year in the first half of 2017, and was expected to grow six times faster than IT spending from 2015 to 2020 (Gantz and Miller, 2016). Another study predicted that 60% of the IT market growth between 2015 and 2020 would be cloud-oriented (Brinda and Heric, 2017).

The cloud industry started to grow as more start-ups entered. Besides new entrants like Amazon Web Services, the traditional on-premises software companies also realized the potential in cloud computing, and started to re-position themselves as cloud providers. Microsoft, SAP, IBM, and Oracle are a few examples of MNEs that have actively invested in cloud solutions. Khanagha at al. (2014) pointed out, however, that back in 2009, "figuring out whether it was wise to plan for harvesting the new Cloud opportunities or to consider burying the business model that the organization had used for more than 150 years took about 5 years of experimentation in different directions" (Khanagha et al., 2014) because of the high-level ambiguity and the threat of cannibalization of existing businesses. The process has therefore taken time to unfold, and to identify ambiguities.

2.5. Research question

We identified a gap in the research on the microfoundations of organizational ambidexterity: How does structural and contextual ambidexterity affect an organization's ability to shape a hypercompetitive environment, and how do different hierarchical levels influence this process?

To answer this question, we will examine the dynamic process through which an established organization transformed itself to tap into a new, emerging business opportunity, in this case, cloud computing. Few organizations understood that cloud might be disruptive, and proactively sought to experiment in the market. The structural changes are reflections of temporal intention during each stage of the process, and also enablers of learning that fed the subsequent formulation of strategy and design of the new business model.

3. Methodology

We chose to use case-based analysis because it allows us to address how and why some concrete activities are linked to strategic outcomes (Jarzabkowski et al. 2007; Johnson et al. 2003). We studied transformation efforts at a Fortune 500 company, to understand the organizational transitions used for renewal purposes. The study organization is a multinational company in the information technology sector. It was a major player in the global on-premises software market, with customers and subsidiaries around the world.

3.1. The study organization

The study company is a US-based global IT firm, with annual turnover of around USD 40 bn. The company has 140,000 employees worldwide, and is listed on the New York Stock

Exchange. Its traditional key target market is the enterprise market: large customers from banking, telecommunication, manufacturing, retail, education, healthcare and the public sector. Over the last 5 years, it has shifted toward small and medium-sized enterprises (SMEs), but most of its revenues are still generated by enterprise customers.

3.2. Data collection

A multi-level approach was used for data collection to get a better insight into different managerial layers of the company. The primary data source was in-depth interviews with 19 employees at various levels of the company. Each of them was interviewed once. The interviews lasted approximately 90 minutes' to explore the views, attitudes and feelings of those involved in the transformation process.

The interviews were recorded and analyzed using NVivo computer-aided text-analysis software. To keep the scale of the research manageable, we restricted the in-depth interviews to the East and Central Europe, Middle East, and Africa region. This is a large and very diverse region, and therefore provides considerable challenge for the management. The region also contains developing countries, whose demand for on-premises solutions was still growing, making this business area lucrative. The shift in strategy meant taking a risk of investing into an—at that time—unproven technology, but also abandoning a highly profitable business. The decision might have resulted in organizational resistance, increasing the need to involve middle-level management, which therefore makes this region very interesting to study.

Interviewees were chosen from several lines of businesses, including application sales, cloud digital, cloud customer success, finance, consulting, public sector business development and technology sales. Table 1 shows the distribution of interviewees by managerial level.

Table 1. Overview of interviewees and their organizational positions

Position	Number of interviews
Top management level	
CEO, Chairman of the Board	11 public speeches
Senior vice president (sales)	2
Middle management level	
Vice president (sales, customer success)	4
Director (sales, business development, consulting, finance)	8
Sales team (sales manager, sales representative)	5

We also collected data through observations, participation in key events (e.g. annual company meetings) and informal conversations. These allowed triangulation of the results and deeper insight into the process. Archival documents and industry analysis and reports were also available to cross-check information collected from other sources.

We analyzed 11 public speeches made by the CEO or Chairman of the Board at major events between 2009 and 2017. Data were also collected from the company's annual report between 2010 and 2017 and from company press releases.

4. Findings

4.1. Direction of organizational attention: ambidextrous leadership

Drawing on content analysis, text interpretation, and historical analysis, we carefully studied the evolution of organizational attention. The data collection confirmed that the corporate strategy in 2007 was about maintaining the company's leadership position in the traditional (on-premises) software industry. There was no indication that cloud computing was on the top management's radar.

The confidence in on-premises business was justified by the CEO in an interview in 2009:

"*Will cloud computing kill us? Will there be no databases, no applications, no middleware in the cloud? The answer is no… it is a rental system."*

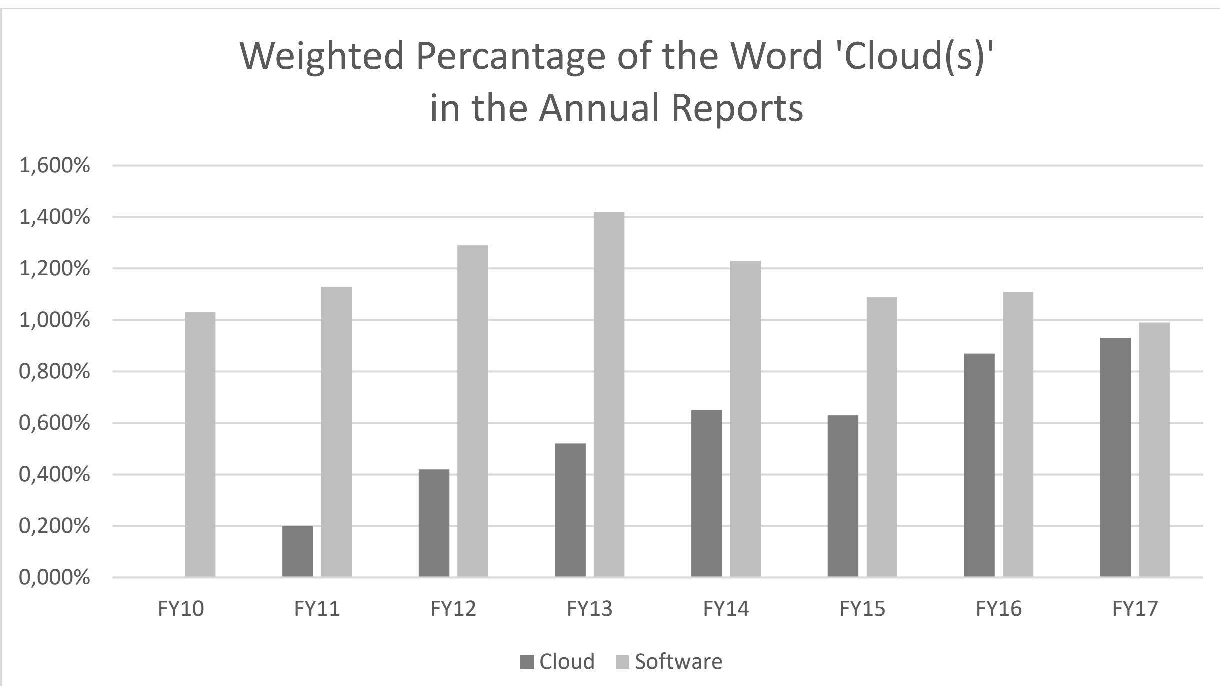
Two years later, in 2011, the company announced its first cloud services. In his communication at that time, the CEO started to build up the organization's sense of urgency, saying: "*Everyone has got a cloud, we need a cloud*". Looking at the company's communications, the management was not at that stage considering a change in the company strategy, but transition into cloud business gradually become the key message. A year later, the company announced the '*Industry's broadest cloud strategy'*.

In 2011, communication focused on getting organizational members ready to enter a new market. By 2013, the aim was to become the largest cloud provider worldwide. Since then, company communications have been built around accelerating change. For example, during the company's annual conference in 2017, the CEO forecast that "*by 2025, 80% of the business applications used by enterprises will be in the cloud. The movement to the cloud is inevitable and accelerating*".

The growing importance of cloud can also be tracked in official company communications (Tuggle et al., 2010; Yu et al. 2005). In the annual report, the weighted percentage of the word ‘cloud(s)’ grew from 0% (0 mentions) in FY10 to 0.2% (112 mentions) in FY11. After FY11, it grew continuously year-on-year, except in FY15, to 0.93% (505 mentions) in FY17, the latest available Annual Report (see Figure 1).

In FY17, the word ‘cloud(s)’ was mentioned nearly as many times in the annual report as ‘software’, which is the broader core business of the company (505 mentions of ‘cloud’ and 536 of ‘software’).

Figure 1. Weighted percentage of the word ‘Cloud(s)’ and software in the annual reports



The use of the word ‘cloud’ has therefore increased, and become institutionalized. Its meaning has also evolved, as other words that co-occur in the vocabulary have shifted in response to both subsequent environmental events and framing processes. The change in company strategy is reflected in its acquisition strategy. In 2010, the company concluded ten acquisitions, none of which was cloud-focused. In 2011, only one of the six acquisitions was explicitly cloud-related, and the rest had on-premises solutions. The situation had changed in 2012, when the company acquired nine companies, of which eight had cloud-only solutions, and one used both cloud and on-premises solutions. That trend has not changed. Between 2013 and 2016, the company acquired 30 companies, of which 23 were cloud-related, and seven were on-premises-related. In 2015, 2016 and 2017, all acquisitions were cloud-related (see Table 2).

Table 2. The company's acquisitions between 2010 and 2017

Acquired competence	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Cloud business	0	1	8	5	5	3	9	3
Cloud element	1	1	0	0	0	0	0	0
On premises	9	4	0	5	2	0	0	0

Analysis of both documentation and interviews confirms that the move to providing cloud solutions was a bold one. It was beyond a technical shift, and instead a deliberate transformation of the strategy. In line with the new strategy, a new business model was formed.

The company made heavy investments to achieve that, including re-developing all its on-premises software to cloud, acquiring cloud companies, and opening several data centers around the world. In its internal communications, the top management team started to clarify the “new” future for the organization, and define both how it would be different from the past, and how organizational members could contribute. The top managers emphasized the forces driving change, such as changing customer needs (lower total cost of ownership, increased security and agility) and organizational benefits such as more innovation, because the burden of development would be on the company, not the customer.

Analysis also showed that organizational attention was focused on the risks of the transition to cloud computing. It was inevitable that transformation to a cloud-based business model was the priority, but as cloud became the main goal, the risks associated with cloud business began to appear in the company's annual report. For example, the risk associated with the transition into cloud business was in 26th position of the 29 'risk' items in the company's FY11 annual report, as: "*Our Cloud Services offerings … may not be successful*."

In the FY12 Annual Report, this risk had moved up to 18th place (out of 29) and year-on-year became more important, requiring greater consideration. In the FY16 annual report, it was the number 1 threat, and remains so in FY17. The risk is now defined as "*our cloud strategy … may adversely affect our revenues and profitability"*.

In summary, this reveals that the change in strategy was deliberately initiated by the top management team, and was therefore a top–down approach. The role of middle management was limited to the execution.

As one of the Sales Vice Presidents said: *"There is a whole range of different strategic activities … that do go down all the levels. Nobody is telling me precisely how to go to the market in my territory. Nobody is telling us how to inspire our team and how to take the solutions the company put together and spin them to the market….. There is a lot of* *empowerment in the company, and at the same time it is very clear that some fundamental decisions are not taken democratically."*

Another implication is that at the very beginning of the process, the risk could not be anticipated fully, as there was too much ambiguity. As the opportunity unfolded and the transformation became clearer, the amount of ambiguity was reduced, and the risks became more explicit.

4.2. The transformation of the organization

When the transition started in 2011, the first step was to maintain exploitation of on-premises sales for traditional customers, while exploring the feasibility of cloud solutions. To support the company's cloud strategy, the internal salesforce was aligned to focus on selling cloud services. Intensive training, financial incentives, and management communication were used to shift sales from on-premises to cloud. As one of the Top Management level interviewee noted:

"It is a choice of a model of transformation. No consensus, top-down. And it can work. The difficulty is if you don't engage with the minds and hearts of the people, there is a risk that they become mercenaries."

This double focus created confusion, and the expected results did not materialize. The top management therefore decided to set up a new sales team with considerable autonomy, and a completely different profile. At this stage, the new unit was solely expected to explore whether there was an untapped opportunity.

Previously, many years of experience in selling IT systems had been required for individuals joining the sales team. Sales representative selling SaaS, however, did not require detailed IT knowledge, but functional knowledge such as HR, financials, and marketing. This is because the SaaS solutions were being acquired by functional departments of customer organizations, so sales representatives needed to discuss and understand their specific problems to advise them on suitable solutions. The sale of cloud solutions also requires more problem-solving and innovation because of its sales process. Previous studies (e.g. Andriopoulos and Lewis, 2009; Liu and Leitner, 2012) found that commercial success requires an effective balance between the paradoxical forces of exploration and exploitation. Projects with high levels of uncertainty, complexity, and constraint are more likely to need to shift into exploration mode than those with low uncertainty and complexity, and fewer constraints.

The strategy proved to be financially rewarding, and the transformation continued. The organization transformed its old sales organization through extensive training, which caused some tension for the sales team. With cloud, the number of opportunities is potentially greater, but the sales process is more challenging because there is more competition. Newcomers can enter the market with relatively low entry barriers. The cost of sales is therefore important, and margins are tighter. For on-premises solutions, the company received a single, large payment when each deal was closed, so the commission was high. On-going but relatively small payments were made in subsequent years from the sales of support. In contrast, when a cloud deal is closed, the revenue is approximately one third of an on-premises deal, which results in lower commission. However, SaaS revenues annually earned the same amount, so the organization was better off after the third year. That was a major drawback for the sales team, who had to unlearn old habits, as well as abandon high commission, which was very costly for the individuals.

The standard sales unit response was that they were still offering both cloud and on-premises products for large customers, as this was required. Strong financial incentives to sell cloud solutions, together with KPIs were introduced, as well as direct managerial encouragement to the field sales representatives, but on-premises products remained high in volume. There was no structural separation; the same sales representatives could sell both types of products.

The top management also applied administrative restrictions to the sale of certain on-premises products, to encourage sales of cloud solutions for the same business need of the customer. Sales representatives had to request special approval from top managers to sell some of the on-premises products and received only a fraction of the normal commission.

Despite the aggressive measures, the transformation took years, because both the organization and the market needed to be shaped. Aggressive market development efforts meant that the industry itself started to change radically, making it possible to re-focus organizational members' activities.

4.3. Focus on new customer segment - SMEs

The company's traditional target market was high end, large enterprises. The cloud strategy created an opportunity to target smaller customers, for several reasons (Marston et al., 2011):

- Cloud services are subscription-based, so buyers do not need large up-front investment. This means organizations with fewer financial resources can afford to use cloud services.

- If SMEs are ready to store data on the cloud, they do not need an IT department. The service allows self-service use for rapid and dynamic provision and de-provision of IT resources, instead of having to go through an IT department to gain access.
- Cloud services can be mass-produced.

The order process was streamlined and fully-automated to run largely without manual intervention. This increased efficiency and reduced costs, which in turn freed up resources and allowed the company to focus on other customer segments.

In the study region, the company created a new business unit in 2016, with 1400 new employees. This was designed to sell cloud solutions specifically to SMEs. The new unit used cost-effective, call-center-based modern sales methods (telephone, email, chat, video calls, social media), supported by the latest technology. As one interviewee (Sales VP) explained, there was a shift in sales communication with customers: '

"*In 2014, only 30% of communication with customers took place by phone, in 2016 it's 80% and in the future, it could be 100%!*"

The tele-sales unit therefore focused solely on cloud products, even though the 'traditional' field sales unit, which used to cover the high-end customer segment, was still offering both cloud and on-premises products.

4.4. The evolution of ambidexterity within the organization

When the firm announced its cloud strategy in 2011, cloud was in the 'early adoption' phase. Key customers were not yet moving to the cloud. The top management, however, anticipated that cloud adoption would be a major market trend, and used significant resources to build cloud-based products and acquire cloud companies. The top management was also willing to cannibalize on-premises products by introducing next-generation cloud products to meet the same customer need.

At first, there was contextual ambidexterity in the company. The sales team was asked to maintain exploitation by selling on-premises solutions while exploring the feasibility of cloud solutions. Existing large customers were targeted to explore demand. However, when this strategy did not give the expected results, a second phase was put in place, and the new sales organization was established. At this stage, the new unit was solely expected to test whether there was an untapped opportunity. The focus was on developing a new market amongst medium-sized organizations via cold calls. This was a radical move, given that the organization's traditional business model neglected this customer segment. Thanks to aggressive market development efforts, the industry itself started to change radically.

Once the strategy proved to be financially rewarding, the organization moved to transform its "old" sales organization to demand-side exploration. Gibson and Birkinshaw (2004) noted that contextual ambidexterity is achieved by empowering individuals to decide how much time to spend on exploration or exploitation activities. Disrupting the operation of the "old" sales unit created sufficient tension for its members to achieve this. Combining cloud and on-premises solutions required high-level problem-solving and innovation skills from the sales team (see Table 3).

Table 3: The evolution of ambidexterity within the organization

	1st Phase **Exploring cloud solutions**	**2nd Phase** **Exploring and exploiting cloud solutions**	
	Contextual ambidexterity	**Structural ambidexterity**	**Contextual ambidexterity**
Exploitation	Traditional sales organization: • Sales of on-premises solutions; • Existing large customers (demand-side exploitation).	Traditional sales organization: • (Limited) sales of on-premises solutions; • Existing large customers (demand-side exploitation).	Traditional sales organization: • Re-focus: sales of cloud solutions (supply-side exploitation)
Exploration	Traditional sales organization: • Sales of cloud solution (supply-side exploration)	New sales organization: • 1,400 new salespeople; • New target market: medium-sized organizations not yet customers	Traditional sales organization: • Combination of cloud and on-premises solutions for large customers (demand-side exploration)
Motivation for exploitation	Higher commission for cloud solutions sales and KPIs for sales team	New sales organization: restricted to cloud solutions sold via telephone	Only cloud solutions to be sold, top management approval and significantly lower commission for on-premises solutions
Outcomes	Slow, not adequate for existing markets	Changing industry rules, leading the evolution of the new industry	

5. Discussion: Shaping dynamic environment by directed renewal

A novel result emerged from the empirical data in this study. Based on the model developed by Volberda et al. (2001), both the top management and the middle management should assume an active role in a hypercompetitive environment with changing industry rules and competitive positioning. The interviews conducted with executives at various levels of the firm, however, confirmed that the transition was a top-down approach, cascaded to the business units. The top management deliberately sought to alter itself as well as the environment by bringing in new competencies while simultaneously using well-developed, existing competences.

According to one of the Sales VPs: *“The strategy is defined at headquarters, and rolled out and needs to be executed. This is clear…There are certain decisions that are really made only at the CEO level and maybe one level down. I don’t believe at the company there is a lot of debate below that level. We may or may not like it, but that’s the way it is. And on balance, it works pretty well. I can see that the head of the region has quite a lot of latitude to do things, but below him? I’m not so sure.”*

The top management was therefore orchestrating local rejuvenation and pushed units toward particular goals. This model (Volberda et al., 2001) suggests that the company followed a ‘directed renewal’ journey, where top management sets goals, scans the environment, searches for alternatives, chooses one, and monitors progress. The senior management assumes the role of a rational actor with a very strong influence, so that middle or line managers start to make decisions based on their opinions of the top management team’s views, rather than their own judgement.

“Different lines of business have their own management structure. The company is clear what everybody’s job is. It’s not a company that rewards sharing responsibility or very broad scope of contribution. Each of us has very clear targets, very clear assignments, and a very clear measurement system and governance. There is a lot of internal competition and friction with other teams. The good thing is it is very clear. This is a fundamental posture of the company, different from other companies, which has made the company very successful by itself and in times of change.”

In the directed renewal process, there is little opportunity for middle management to learn, as they have to conform to new rules rather than create them. Volberda (2017) therefore concluded that directed renewal is particularly suited to firms experiencing steady growth or decline, where the benefits of hierarchy on formal planning and control can be fully realized.

The directed renewal journey, according to Volberda et al. (2001), is therefore less suitable for organizations facing permanent turbulence, where boundaries between markets and units are being broken down. In markets where top management is not in control, because of hypercompetition, Volberda et al. (2001) suggested transformational renewal. Here, high levels of uncertainty mean that transformation is associated with significant unlearning, new ways of thinking and mindsets, different paths of technology, and plenty of trial-and-error learning. The involvement of frontline managers is seen as essential to the renewal process. Renewal is driven by the development of shared strategic schemas or collective frames of reference (Volberda et al., 2001). The process is led from the top, but involves considerable engagement from all levels in shaping the direction of the transformation. Wilden et al. (2013) also argued renewal in highly competitive and turbulent markets is possible with an organic organizational structure that provides a basis for the use of processes to sense and seize external opportunities via decentralized decision-making, reinforced by organizational policies and formal reward systems that actively empower middle-managers for strategic management activities.

However, the organization in this study does not fit these suggestions. The top management did not work toward shared sense-making. Unit managers remained largely concerned with today rather than tomorrow. The performance evaluation of the units remained revenue-driven. However, the front-line managers were encouraged to innovate within the boundaries of their business. They were required to work closely with their clientele to better understand their needs. There was limited team-working across levels and functions when the new cloud strategy was developed, just as collective sense-making was not deliberately promoted.

As one VP said about the change: *"…it started as a violent mandate. People didn't have a choice at the top (of the region). We were told 'this is your number for the cloud, just do it'. All the rules of saying 'let me talk to my customer, let me see what is in my pipeline'…it was completely ignored, and people were told 'just do it'. That was harsh, because it removed any discussion on whether it is correct thing to do." …*

"It is a choice of a model of transformation. No consensus, top-down. And it can work. The difficulty is if you don't engage with the minds and the hearts of the people, there is a risk that they become mercenaries."

The organization studied followed the transformational renewal strategy 10 to 15 years ago, when they had a country-based model, and later a regional model, with active frontline and middle-managers. These managers were the key to local responsiveness and maintaining high performance. As technology and internal support systems evolved however, the role of frontline and middle managers changed. They are still essential in giving social support, but performance management and organizational renewal is managed centrally. This change started nine years ago, and has now fully matured. The deviation from transformational renewal, as described by Volberda et al. (2001), is also reinforced because the participating organization is highly active in acquisitions. It frequently buys new elements for the corporate portfolio in anticipation of market trends.

Changing industry rules ultimately induced changes in the perception and behavior of the traditional sales unit. Considerable learning eventually happened, but there were cycles when the organization shifted between the extremes: from systemic exploration to exploitation. The balance, in the form of contextual ambidexterity, was achieved when the old unit learned to behave differently and explore new competencies.

Another important deviation from the model of Volberda et al. (2001) was that the organization did not face crises because of maturing markets or declines in revenues. The restriction of the sales of on-premises solutions when the market was still unfolding was not only a radical change, but a bold and risky move.

The organization is therefore characterized by:

- Source of variation: hierarchy;
- Locus of unit selection: top management;
- Exploitation/exploration balance: balanced in structural separation (traditional sales unit and new sales team), and unbalanced in contextual ambidexterity (within the traditional sales unit);

- Knowledge design: top management knows best (thanks to the support systems) and orchestrates organizational knowledge integration;
- Competitive positioning: changing industry rules.

The organization does not fit into the any of the idealized renewal journeys suggested by previous studies, so we suggest that it is necessary to rethink the role of middle management in the face of a dynamic environment and technology change. Support systems that can give more accurate and real-time information to decision-makers play an active role in organizational renewal. They can therefore be a substitute for active frontline and middle-managers in a hypercompetitive environment. This renewal is therefore a hybrid of directed, transformative, and controlled renewal (Table 4.). The main advantage of this is that the organization is more resilient and less complex, which could provide a new competitive advantage.

In this case, strategic renewal is not slowed by organizational inertia. Exploring and exploiting a new opportunity or shifting the organization from one direction to another can be driven by a small strategic apex even in a firm with many thousand employees. Controlled renewal is data-driven, automated and capable of fast organizational learning. Learning on-the-job is required to renew the company's competitiveness, and finding the right ICT support systems is vital in the 21st century (Hortoványi and Ferincz, 2015).

Table 4: Idealized renewal journeys of multi-unit firms

	Top management is passive with respect to the environment	Top management is active with respect to the environment
Frontline and middle managers are passive (stable competition)	**Emergent Renewal**	**Directed Renewal**
Frontline and middle managers are passive, but support systems are active (hypercompetition)	**-**	***Controlled Renewal***
Frontline and middle managers are active (hypercompetition)	**Facilitated Renewal**	**Transformational Renewal**

Source: adapted from Volberda et al. (2001:163) (new from this study is italic)

Another new possible idealized journey also emerged, but it does not make sense to have an active support system for a passive top management team. Strong support systems could help active frontline and middle line managers, too, but this does not require a new category.

6. Summary and future research directions

Multinational enterprises are innovative organizational forms, designed to lead one or more industrial segments over a long period of time. This needs constant renewal, which in turn leads to new management practices and inspiring management thinking.

Contextual and structural ambidexterity enables organizations to shape a hypercompetitive environment. However, it also generates a huge organizational tension, especially at regional headquarters, at the front line and at middle management levels. Successful structural separation fosters contextual ambidexterity, and both are needed to enhance organizational resilience.

Directing organizational attention towards exploration by creating a contextually ambidextrous situation is not enough to turn around the organization. Either middle management should be active in the renewal journey (transformational renewal) or the top management needs active support systems to manage the renewal journey (controlled renewal). Controlled renewal is data-driven, automated and capable of fast organizational learning.

Our study was limited to a single case study, so its results may not be widely generalizable. However, it could be a role model for successful large-scale transformations in the Fourth Industrial Revolution.

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