Organizational Ambidexterity Building via Strategic Learning and Business Learning

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Abstract

Organizational ambidexterity, defined as the simultaneously pursuit of both exploitation and exploration activities, is essential for organizations' survival, thrive and mature. However, the building of this capability is still ambiguous in prior literatures. This paper draws on the organizational learning theories, presents how two types of learning (i.e. strategic learning and business learning) and their interaction contribute to the dynamic evolutionary of organizational ambidexterity. We conducted longitudinal single case study on an outstanding Chinese high-tech firm (Huawei) by revealing its evolutionary journey. Our study reveals that exploration and exploitation are distinctive but also closely associated, and that organizational ambidexterity is accumulative and should be constructed across multiple levels. Representative strategic and business learning activities and principles are also identified.

1. Introduction

A critical challenge faced by enterprises in a turbulent and dynamic environment is how to balance the need to exploit existing capabilities and search for new ones[1]. Exploitative activities results in incremental improvements inside the already established organizational routines, which contribute to the current operational efficiency and ensure stable short-term profitability[2, 3]. Explorative activities result in new approaches and ideas deviating from current operations, which provide future opportunities and are beneficial for long-term viability[2, 3]. Despite the strategic importance of exploitation and exploration, enterprises are frequently bothered by the trade-offs between the two due to the finite managerial attention and scarcity of resources. Separate and single concentration on either type would mean disaster to an ambitious organization[3, 4]. Most organizations tend to favor familiar activities with risk free outcomes, but this inclination to exploitation is potentially self-destructive, because they are likely to be trapped in obsolescence and loose the chance to lead the future market[3]. However, organizations that engage in endless exploration will also suffer from considerable uncertainties and finally exhaust their resources[4]. In view of this, scholars proposed the concept of "organizational ambidexterity" by emphasizing the possibility of simultaneously pursuit of both exploitative and explorative activities instead of treating the two as sequential and incompatible[5, 6]. Thus the capability of maintaining a well-balanced combination is considered as the source of competitive advantage[7], the central tension of strategic renewal[8] and the primary factor in organizational survival and prosperity[3].

Although prior research achieves the consensus on the need for the balance of exploitation and exploration [2] and a number of empirical tests have provided evidence for the positive relationship between organizational ambidexterity and company growth[6], technological innovation[9], financial performance[10], we know little about how this balance can be achieved[11].In particular, we identified three gaps in related literatures as follows:

Firstly, previous literatures tend to separate exploitation and exploration by emphasizing their distinguished features, but they paid little attention to the potential interactions and connections between the two. This interaction relationship is important because organizational ambidexterity not result from the mere existence of exploitation and exploration, but emerges from the matching and combination of the two sides[12]. Extant literatures reveal that exploitation and exploration are not always conflict for resources. They can add to each other's value under certain conditions[6, 12]. However, we are still at an early stage to understand what conditions facilitate this synergetic effects and what effective mechanisms can be relied on to deal with the potential challenges.

Secondly, earlier research pointed out three broad ways to establish organizational ambidexterity, but detailed activities and feasible practices across the micro levels (the individual level and group or team level) and macro levels (the intra-organizational level and inter-organizational level) are relatively scarcely discussed[11, 13]. The three approaches include (1) structural mechanisms that enable different organizational units to perform separate activities at the same time [14]; (2) context design that encourages members to divide their time between conflicting demands under particular systems, processes and beliefs [15]; and (3) leadership that stresses the responsibility of top management for the tension of explorative and exploitative activities [16]. Most of these studies have been either dedicated to the macro organizational level (the structural and contextual approach) or the micro individual level (leadership approach) separately, few of them spanning multiple levels of analysis[11], thus we have little knowledge of how the macro and the micro factors jointly but distinctly contribute to organizational ambidexterity.

Finally, there are compelling needs for a longitudinal perspective and a process view to investigate the construction of organizational ambidexterity [11, 13, 17]. Birkinshaw has

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pointed out existing empirical tests mostly rely on cross-sectional survey data, which have "frequently taken a static perspective of organizational behavior", while in fact organizations have to "continuously reconfigure their activities to meet changing demands" [13]. Therefore, a longitudinal perspective is valuable to capture the dynamic nature of capability building. Moreover, scholars adopted inconsistent interpretations regarding to whether exploitation and exploration should be considered as capability outcomes or implementation approaches. For example, He and Wong measured exploration as capability outcomes by number of patent or growth rate, while Kane and Alavi treated them as processes[6, 18]. The obscure boundary between processes and outcomes limits our observations on specific organizational practices and mechanisms, thus making the answers for "how to build organizational ambidexterity" rather ambiguous.

To address the above literature gaps, this research aims to open the black box of organizational ambidexterity development by drawing on organizational learning theories, which emphasizes the continually changing nature of organizations and unifies various levels of analysis, including the individual, group , organizational and inter-organizational levels[19]. We argue that "Organizational ambidexterity" may indeed be viewed as a strategic objective, representing the desired "ends" to be achieved via the appropriate "means" (organizational learning)[20].Further, we followed March's [3] suggestion to associate exploration and exploitation with two types of leaning activities-business learning and strategic learning. The former focuses on gaining efficiency on established routines, whereas the latter focuses on the set up of new organizational rules. We conducted a longitudinal case study over an outstanding Chinese high-tech company, Huawei Technologies Co Ltd. (hereafter Huawei in short) to show how strategic learning and business learning processes contribute to the development of organizational ambidexterity and tease out the evolutionary path such a capability building in the past two decades.

2. Theoretical foundation

2.1 Organizational Ambidexterity

How organizations survive and success in the dynamic competitive environment? Scholars in the strategy filed proposed "dynamic capability" and scholars in the organizational design field suggested "organizational ambidexterity".

Dynamic capability is defined as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments[21]", while organizational ambidexterity is referred to as "the ability of a firm to simultaneously exploit and explore[22, 23]". Both two concepts are proposed to answer the question of "how do organizations survive in the face of change" and aimed to convert organization's deliberate effort into competitive advantage[24]. However, the two themes differ in a number of ways. Firstly, dynamic capability seems to be a broader concept in organization adaptation, which encompasses a set of capabilities, routines and competences but lacks of specific, concrete and repeated practices in current research[25, 26], while organizational ambidexterity aims to solve the paradoxes, dilemmas and conflicts in organizational development. Secondly, dynamic capability lays great emphasis on strategic leadership and senior team to deploy organizational resources and reconfigure organizational capabilities[27, 28], while organizational ambidexterity relies on structural, contextual and leadership design across all organizational levels, including individual, business units and organizations[29].

Therefore, organizational ambidexterity is not necessarily dynamic capability because it may result from external conditions without deliberate deployment of organizational resources[24]. In our investigation, we focus on how the target organization deals with conflicting demands to survive the changing environments, which is also the core emphasis of dynamic capability. But besides strategic leadership and senior team in dynamic capability, we also examine activities at lower levels, since ambidexterity results from interactions across multiple levels[30].

The conceptual disparity between exploration and exploitation had been extensively discussed in previous literatures. For example, exploitation and exploration are distinguished by types of learning rather than existence of learning [11, 29, 30]. They are different in dimensions including strategic intention, critical tasks, competences, structures, applicable cultures and leadership roles[23]. Exploitation is more associated with terms like "refinement, choice, production, efficiency, selection, implementation, execution" while exploration with "search, variation, risk taking, experimentation, play, flexibility, discovery, innovation"[3]. However, less is discussed about the interaction relationships between exploitation and exploration contribute to the building and enhancement of organizational ambidexterity.

Some scholars treat exploitation and exploration as "two ends of a single continuum" since they compete for resources and management attention, and to be ambidextrous means to match the magnitude of two activities in a trade-off pattern[3, 4]. Later, more scholars characterize exploration and exploitation as independent activities, thus firms can rely on wise structural design or contextual design to engage in high levels of both activities[11, 16].

Recently, Cao et al. unpacked the concept of organizational ambidexterity into two dimensions, the balanced dimension of ambidexterity (BD) and the combined dimension into ambidexterity (CD)[12]. BD emphasizes relative magnitude of exploitation and exploration, because excessive devotion to either side will cause performance risks. For example, if exploitation drives over exploration, a firm is likely to trap in "risk of obsolescence". If exploration drives over exploitation, a firm is likely to suffer from negative cash flow. CD emphasizes the absolute magnitude of two sides because high levels of either side will complement or be supportive to the other.

In light of these views, we believe that organizational ambidexterity not results from mere existence of exploitation and exploration, but emerges from the matching and combination relationships between the two. However, we are still not clear about how to cultivate this synergetic effect and it's our aim to reveal the evolutional footprints and uncover more specific causal mechanisms behind the flashy outcomes.

According to Rothaermel & Deeds, the precursor for exploration is simply curiosity while the precursor for exploitation is the "existence of an exploitable set of resources, assets, or capabilities under the control of the firm", thus exploration provides sources for exploitation[31].Based on this observation, we question closely on whether exploitation benefits exploration as well and how the interaction of the two evolves over time.

Since exploitation and exploration are concepts originated from the organizational learning literatures, a number of researchers also consider them as learning activities that contribute to ambidexterity (e.g.[18, 32]). However, it's more reasonable to consider the two concepts as outcomes rather than processes since they represent two conflicting and complementary sides of organizational ambidexterity, which is considered as a capability outcome. Mixing the process and outcome in the same concept can easily trap us in reciprocal causation and limit our discovery and understanding of the actual causal mechanisms. Therefore, a theory that emphasizes more on the process perspective is desirable to open the black box of capability building.

2.2 Organizational Learning

Organizational learning is defined as "the process of improving actions through better knowledge and understanding"[33]. The organizational learning theory emphasizes more on process rather than outcome and is more suitable to investigate the dynamic nature of capability development[19].Based on an thorough review on organizational learning literatures, Huber articulated four sub processes of organizational learning, including knowledge acquisition, information distribution, information interpretation, and organizational memory[34].

In general, researches consensus on the typology of organizational learning along learning outcomes. Although paired concepts like first-order and second-order learning[35], single-loop and double-loop learning[36], lower level and higher-level learning[33], strategic and business learning[37] are all used to distinguish learning under the existing rules and learning to creating new rules, we choose strategic learning and business learning because they emphasize on the strategic capability and are more suitable to apply at the enterprise level while previous concepts are more intended to individual learning. Strategic learning is "organizational learning that improves the strategic capability of the organization and changes the basic assumptions underlying the stable generation mechanism that structures the strategic behaviour design process."[37]. While business learning is the process organization gains specific operational knowledge within established rules[37].

There are two observations in the prior literatures contribute to our understanding. Firstly, they point out that these two learning activities are distinct but closely linked. According to Kuwada, new rules resulted from strategic learning guide business activities, and the business learning can reinforce these newly introduced rules into organizational routines. Besides, an unusual business learning activity can trigger strategic learning once the following conditions can be satisfied: (1)Access and commitment to raw data about incidents, (2) enough slack or unused resources, and (3)autonomy from other parts of the organization and short-run operation. Secondly, organizational learning is an ecological process that occurs at all levels, including individual, group, organizational and inter-organizational levels[8, 38].However, few studies delve into the four sub processes of strategic and business learning, and there is a lack of multiple level analysis in most literatures. Thus in the following section, we present our analysis framework by leveraging extant research findings and filling up the literature gaps mentioned above.

2.3 Analysis framework

Figure 1 shows our initial analysis framework that guides us to collect further information and conduct logical case analysis. The left box draws from the organizational learning theory. Organizational learning is divided into strategic learning and business learning, each has their corresponding activities along the four sub processes including knowledge acquisition, information distribution, information interpretation and organizational memory. Despite the disparities in strategic learning and business learning, there are extensive mutual connections between the two under appropriate contexts. The right box draws from the ambidexterity literatures, where organizational ambidexterity is manifested by the presence of both explorative capability and

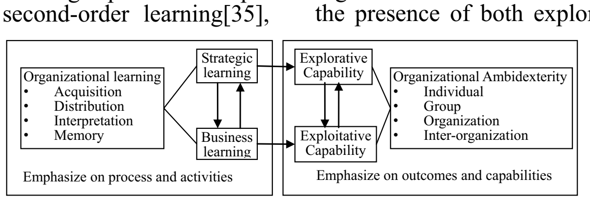

Figure 1 Relationships between organizational ambidexterity and organizational learning

exploitation capability across individual, group, organizational and inter-organizational levels. By definition, strategic learning contributes to explorative capability, while business learning contributes to exploitative capability[37]. In the light of existing studies [6, 12, 31], we suppose the interaction between strategic learning and business learning indicates similar relationships between explorative capability and exploitative capability.

3. Method

A longitudinal single case study is suitable to investigate the proposed research questions due to the following three reasons. First of all, our study is exploratory rather than confirmatory. We aim to uncover how to establish organizational ambidexterity through organizational learning, and case studies are most suitable for answering "how" and "why" questions that are deeply embedded in complex organizational contexts[39, 40]. Secondly, time-series or longitudinal data is beneficial to depict the evolutionary footprints of capability building[41]. Finally, we choose a typical case to identify the challenges and feasible practices that are revelatory to other enterprises [40]. In a word, by implementing this qualitative method, researchers are able to delve into the complexity of problems and focus their efforts on richer interpretations and develop insightful conclusions[42].

We finally choose Huawei Technologies Co Ltd in the telecommunications industry as our target organization, because (1)it is one of the few Chinese private companies that have survived several strategy renewals and achieved outstanding performance in only 25 years and (2) the contrasts between strategic learning and business learning are sharp.

In order to form data triangulation [40], we collected data from various sources, including face-to-face interviews, e-mail communications, surveys and archival materials. First-hand materials include all 72 discourses from its CEO Ren, Zhengfei, interview transcripts and email responses from 15 targeted employees. To overcome the potential recall bias during interviews, we communicated with employees from both the case company and corresponding consulting companies. Second-hand materials include published books, official websites, information in the community club of Tiany and internal email communications among management teams, training materials and circulations like "Management Optimization" and "Huawei People".

We follow the 8-step SPS (Structural-Pragmatic-Situational) research method, which allows us to conduct data analysis with certain expectations based on prior theory, while also allowing some unexpected findings and explanations to emerge from the data[43]. Once we gained case access, we started the "Framing cycle" by iteratively conceptualizing the phenomenon, collecting and organizing initial data, constructing the theoretical lens. When our theoretical perceptions are both an accurate representation of the empirical data and make adequate contribution to extant theories, we move on to the "Augmenting cycle", which is consist of steps like confirming and validating data, selective coding and ensuring theory-data-model alignment. We conclude our case research by writing the case report.

4. Case Description

Huawei Technologies Co Ltd was founded in Shen Zhen in 1987 with registered capital of only 20,000 RMB (about $3000). After 25 years growth, Huawei expanded its ICT related products and solutions to customers in more than 140 countries and one third of the world's population, covering telecom operators, enterprises and end-users. By 2012, it ranks only after Ericsson in the international markets with annual sales reached RMB 220 billion ($35.4 billion).The company now employed 146,000 staff, with over 20% expats (see http://www.huawei.com/cn/). In 2008, the Business Week magazine lists Huawei in "The World's Most Influential Companies" 1 [44], exhibiting the significant role Huawei is playing in the telecom business landscape. In 2010, Huawei was ranked the 5th most innovative company in the world by Fast Company, only behind Facebook, Amazon, Apple, and Google[45].

Based on our case analysis, we identified two milestones that separate the company history into three parts. The first one is around 1997, Huawei shifted its focus on technology to management efficiency. The second milestone is around 2008, Huawei shifted its focus on internal management optimization to external customers and markets[46, 47].In the following sections, we'll present how strategic learning and business learning processes contribute the two dimensions of organizational ambidexterity in 3 distinctive development stages.

Stage 1: Wild wolf period (1987-1996)

Started as a commercial agency for a Hong Kong company in 1987, Huawei had only 14 employees. At that time, foreign players dominated the communications market and local companies didn't have access to core technologies, thousands of similar companies resold the switchboard machine to gain a profit. Without necessary financial, human resource, solid products as backup, Huawei could die at any time in the competitive market.

In the prime time, there is no explicit division of labor among employees. Everyone including CEO REN,Zhengfei had to assume multiple roles in marketing, delivery, collecting funds and after-sales service. Most employees worked from 8 a.m. to 10 p.m. without weekends to DIY the switchboard. Two years later, following his ambition and intuition, the

[1] Available at : http://finance.yahoo.com/news/pf_article_106294.html

CEO decided to end up the agency business and risked all the money on the research of own products[48]. To overcome difficulties in weak technology and limited resources, Huawei heavily relied on the spirits of hard working and plain living as well as the "principle of pressure intensity", which means to concentrate all resources on selected strategic area. When one employee found a potential customer, all other employees would spare no efforts to provide support. They stayed up all nights together to meet orders, promised timely service even when customers called in at midnight. Then "Wolf Culture" was used as a tag to refer to Huawei's sharp sense of competition, strong team spirits and self-sacrifice[49]. Besides, individual heroes and learning by doing were stressed at the time. Remuneration was based on individual contribution and responsibility.

"We have to give up the dream of quick success, chances prefer down-to-earth workers…we learned the rules of competition through competition…Every employee has to squeeze time to conduct self-training…We advocate learning by doing. If one is good at summarizing and reflection, one can make bigger progress." (Ren's speech in 1994, titled "A Letter to New Employees")

During this period, business learning mainly relied on hands-on experiences. Information was distributed through face-to-face communications and leaderless group discussion. Employees interpreted market in their own ways without unified guidance. Organizational memory remained scattered and tacit in individuals. In terms of strategic learning, the CEO plays a critical role in identify potential market opportunities. He spread and interpreted his ideas via passionate speeches. Due to the scattered and intuitive thoughts of individuals, organizational memory for strategic learning was hardly emerged. Both learning processes were driven by the competition pressure in an instinct way rather than intended plans and strategies. at this period, exploitative and explorative capability only satisfied the requirements of short-term survival. As CEO Ren, Zhengfei puts it, "the only goal of Huawei is to survive."

Stage 2: Regular army period(1997-2008)

In the past 10 years, Huawei has increased over 1000 times [50]. When old employees recalled the memory in the first period, they say "independent R&D was like gambling". But the stake for this gamble was the fortune of enterprise. With business expanding rapidly, the TMT of Huawei had soon realized that individual heroes and endless overtime working are never sustainable for long-term development and that It was essential to import international management systems to support rational decision making. During 1997-2008, Huawei mainly focused on management optimization, which transformed the organization from partisan troops to a regular army. In order to facilitate the implementation of new systems, IBM was invited as its consultant during the IPD (Integrated Product Development) project [51].

At first, many employees thought IPD as "American shoes" that couldn't work out in China, so they kept challenging IBM consultants and suggested to tailor the IPD system while implementation. However, CEO Ren emphasized the principle of "ossify, institutionalize and optimize", meaning that whole IPD system should be totally and uncritically accepted first, and once everyone reaches comprehensive understanding, real improvements can be made, or else, suggestions only means inertia and show off. Besides, he emphasized learning from only one system rather than constantly shift among various best management practices, because with only limited management experience, shallow efforts on each new experience will eventually in vain[52]. The IPD group agreed on a monthly turnover of core members, in order to promote information distribution among the whole organization. Ren also hold Q&A conferences to answer related questions. He clarified that IPD is not only a R&D program, but closely relates to all departments. Each experimental unit consists of 2 financial staff, 2 purchasing staff and 2 production staff. There will be one observer and one operator from the same functional department. When the experimental unit ends, the observer would be assigned to another experimental unit as an operator. To facilitate the emerge of organizational memory, Huawei speeded up its introduction of affiliated hardware and systems.

As the program finally integrated in the daily operations, business learning occurs to improve efficiency and correct mismatches. Huawei learned mainly from IBM, own experience, and keep an eye on international plays as well as its competitors. Periodic work reports across all organizational levels were put into force to encourage knowledge sharing. Internal journals like "Huawei People" and "Management Optimization" were published to distribute and share ideas. Huawei relied on "Self-criticism" to find out error and successful solutions in individual work, team work and organizational decisions, thus their understandings on failures and successes were reinforced during the reflection[53]. Organizational memory was stored in the matrix organizational structures that enable functional management and cross-functional projects, "Huawei Basic Law" that enables consistent goals and culture consensus and series of standard operation procedures in R&D. We summarize the typical strategic and business learning activities and principles in the table 1.

As a result, Huawei successfully shifted from individual diligence to organizational normality. Exploitative and explorative capability also expanded from the individual level to the group as well as the organizational level. Strategic learning provides exploitable resources for business learning to occur, and business learning triggers strategic learning in other programs. By leveraging the successful experience in IPD program, latter cooperation with world-class consulting companies like IBM, Hay Group, PwC and SAP had facilitated the great leap in

ISC (Integrated Supply Chain), IFS (Integrated Financial System) and upgrades in HR and quality control systems with more flexibility and efficiency (see http://www.huawei.com/cn/).

Table 1 Learning processes for the IPD program (From 1997-2008)

Learning processes	Strategic learning activities	Business learning activities
Knowledge acquisition	• IBM consultants; • Introducing talents from other companies; • Experimental units;	• Best practices from IBM IPD program; • Hands-on experience; • International players and its competitors;
Information distribution	• Monthly core member turnover in the IPD group; • Cross functional team members; • Special promotion groups;	• Periodic work report across all organizational levels; • Internal publication of “Huawei People” and “Management Optimization”; • Top down information flow;
Information interpretation	• Focus on one management system. • Not advanced system, but useful system; • Q&A conferences; • “ossify, institutionalize and optimize” • Respect consultants and learn humbly;	• “Sufficient rewards on small improvements, limited encouragement on broad recommendation”; • Relates IPD implementation with individual performance evaluation. • Self-criticism;
Organizational memory	• Speed up the introduction of hardware and supportive systems and tools;	• Matrix organizational structures; • “Huawei Basic Law”; • Series of standard operation procedures;

Stage 3: Customer-oriented period (2009 till now)

By 2008, the Huawei’s sales exceeded 110 billion RMB, among which oversea sales contributed 72%. As Huawei plays a more and more significant role in the ICT industry, organizational rigidity became a major barrier to its new transformations and international expansions [54]. The management realized that solely downsizing structures and simplifying procedures in a top-down manner would cause pressure on the frontier employees, resulting in reduced operation efficiency and increased costs.

Strategic learning was triggered by its successful experience in North America. The project team rely on a special team structure, called “The iron triangle combat unit”, which consists of a customer manager, a solution provider expert and a delivery professional, to collect accurate customer needs and maintain loyal customer relationships[53]. This operating mode reverse the traditional hierarchical way of allocating resources, but empower the frontier employees to dispatch the best organizational resources to interpret customer needs, ensure timely delivery and refunding, of course, under well-designed empowerment mechanisms. To implement this combat unit in the whole organization, the CEO made several speeches to clarify the necessity. The project groups interpreted the idea in details and came up with action plans. They stressed that customer manager should be improve integrative competences including customer relationship, business solution explanation, negotiation skills and timely service, the solution provider expert should be more versatile or capable of finding help, the delivery professional should be able to communicate accurately and understand follow-up operations perfectly. Besides, the company stresses the “openness, compromise and grayness” principle, which means to overcome the over-confidence, remain open to beneficial advices, sacrifices details to remain harmony. By the end of 2009, Huawei established 36 training centers and 17 joint innovation labs (see 2010 annual report of Huawei on page 48. Website: http://www.huawei.com/cn/). Organizational memory was upgraded with new empowerment rules and new incentive systems.

Business learning occurs to reinforce the new rules and systems by duplicating and making appropriate adjustments to the “combat unit” in other countries. Besides, Huawei established broad cooperative relationships with other companies to leverage inter organizational expertise and resources[49]. Periodic work report across all organizational levels as well as internal publications and reflections are still used as information distribution channels, but information flows more in a bottom up direction. Huawei prefers continuous improvement but stays vigilant against blind innovation and perfectionism so as to avoid unnecessary burden[53]. Organizational memory is enriched by company-wide best practices and lessons from failure cases. As a result, Huawei advanced its explorative and exploitative capability by allocating attention on both internal operation and external markets. The information distribution process combine centralized management and decentralized empowerment. As for the interpretation process, division of labor among individuals, groups and organizations are clearer. Common employees have access to abundant organizational resources under well-designed empowerment. The organizational memory is mixed with old systems and new rules.

Table 2 Learning processes for the "Iron Combat unit" (From 2009 till now)

Learning processes	Strategic learning activities	Business learning activities
Knowledge acquisition	• Market and customer scanning; • Reflection on own experience; • Field visits on other companies and countries;	• Repetition of own success and avoidance of failure experience; • Tailor to other countries' practices; • Broad cooperative relationships;
Information distribution	• Mobilization meeting; • CEO speech; • Remove process control, budge plan from general office to local markets;	• Periodic work report across all organizational levels; • Internal publication of "Huawei People" and "Management Optimization" • Extensive reflection on individual work, team work and organizational decisions; • Bottom up information flow;
Information interpretatio n	• Frontier combat unit has to be even more all-around; • "openness, compromise and grayness"; • Practical rather than best solutions; • Success is not a reliable guidance for future;	• On-site decision under predefined rules; • Continuous self-improvement but against perfectionism and blind innovation;
Organizatio nal memory	• Empowerment rules; • New incentive systems;	• Company-wide best practices and failure cases;

5. Discussion and Findings

Based on our case analysis, we find that (1) keywords for the "Wild wolf period" are "individual" and "instinctive". Facing the competitive pressure, limited financial and human capital resources, and both learning processes occurred as instinct response to on-spot events and relied heavily on individual efforts. The resulted ambidexterity was stronger on exploitation but only holdout for short-term development; (2) keywords for the "Regular army period" are "organizational" and "purposive". With better financial condition and enlarged company scale, strategic and business learning served to achieve management optimization. However, due to limited prior experience, the company has to learn from outside consultants and arrange strategic learning and business learning in a sequential manner. By the end of this period, ambidexterity was achieved in individual, group and organizational levels. (3) Keywords for the "Customer oriented period" are "flexible" and "integration". As the company accumulated more experience, it become capable of scanning both internal and external opportunities since division of labor among individuals, groups and the organization become clearer and more standard. Old and new routines in the organizational memory were integrated under a common vision. The evolutionary map of organizational ambidexterity building through two types of learning is depicted in Figure 2.

We have the following discussion. Firstly, as ambidexterity extends from individual level to organizational and inter-organizational level, the targeted organization gains higher efficiency and more flexibility on resource allocation. During the "wild wolf period", individual ambidexterity alleviated conflicting demands but was highly uncontrollable. Meanwhile, exploitation matches exploration but the absolute magnitudes of two capabilities are low. While in the "customer-oriented period", ambidexterity was achieved through systematic integration of organizational resources and exploitation matches exploration at a higher magnitude. As is argued by O'Reilly and Tushman [24], when management can premeditate and repeat the reconfiguration of firm resources, ambidexterity becomes a dynamic capability, which goes beyond the paradoxical pursuits and further contributes to long-term competence[26]. Thus we can conclude that organizational ambidexterity is accumulative and results from interactions across multiple levels[30].

Secondly, from the evolutionary foot print of the case company, we notice that the knowledge acquisition and information interpretation processes initially relied on its CEO, then the management team and finally common front-line employees. The direction of information dissemination shifted from a top-down pattern to a bottom-up pattern. And the organizational memory increased from personal tacit knowledge to well-organized inter-organizational practices. We conclude that exploitation benefits exploration when there is adequate prior knowledge, slack organizational resource and reasonable empowerment for all organizational members [37, 55, 56]. Once an organization has gained competence in current operations (exploitation) , accumulated prior knowledge serves to make better predictions of future trends and enables better interpretation and assimilation of new knowledge[55]. Slack resources are emphasized in most innovation literatures because they determine the organization's risk attitude[37, 57]. An organization tends to have higher risk tolerance when there is more slack resource, thus has larger probability to encounter or try out new practices. Besides, certain amount of autonomy is essential to motivate multiple and creative ideas[37]. As a result, reasonable empowerment encourages employees to act more proactively.

Thirdly, from an overall perspective,

organizational ambidexterity is a dynamic process rather than one-shot configuration, but in specific development phase, the case company maintains a relative stable and consistent pursuit[58]. During the "regular army period", when the management systems were incomplete, exploitation was guided by exploration but rarely trigger new exploration. This is because short-term stability facilitates the dissemination and interpretation of information, which contribute to a clearer strategic intention and recognized vision and values and in turn provides the foundation for exploration[24].

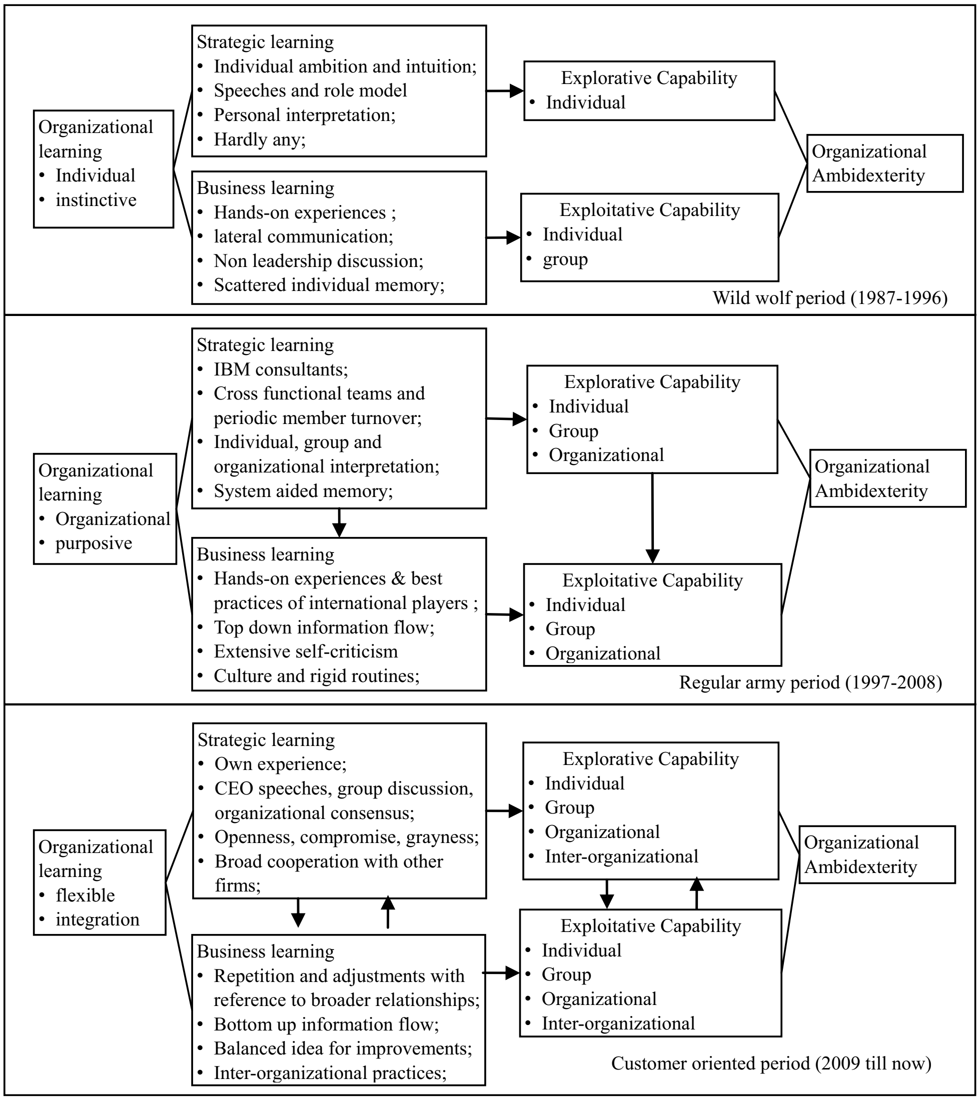

Figure 2 Evolutionary map of organizational capability building

6. Conclusion

In this paper, we aim to open the black box of organizational ambidexterity building through organizational learning processes. We conducted a longitudinal single case of Huawei and described its knowledge acquisition, information dissemination and interpretation as well as organizational memory across individual, group, organizational and inter-organizational levels. We found that ambidexterity is accumulative and dynamic. At initial stage, uncontrollable individual ambidexterity was "pushed" by competition and can only support short term survival, while later premeditated ambidexterity was "pulled" by a clear strategic intention and can be counted for long-term viability[24]. Besides, exploitation and exploration across four levels presents the richest interaction relationship. Exploitation benefits exploration when there is adequate prior knowledge, slack organizational resource and reasonable empowerment for all organizational members [37, 55, 56]. Finally, we present representative activities strategic and business leaning sub processes, which can provide valuable reference to companies operating in a similar context.

Several limitations have to be admitted in our research. One limitation roots in the single case methodology, whose generalizability is limited. We carefully followed established case study guidelines to reduce bias and in the future we plan to replicate the logic in this study to other representative Chinese companies (such as JingDong). In order to gain further insights, we also hope to conduct comparative case studies in developed and developing countries, for example, Huawei in China and Cisco in the United States. In fact, our research team has been working on the single case of Cisco for 3 years. We found that compared with their western counterparts, Chinese companies are different in resource endowment, learning approaches and management wisdom. Thus we expect a very different capability building path of Chinese companies. We believe this observation is both valuable for developing countries to refined their catch-up strategies and beneficial for developed countries to better understand their competitors. Secondly, although major transformations were facilitated or driven by IT systems, our analysis didn't highlight IT's role in achieving ambidexterity. An interesting and meaningful direction for future studies is to examine how IT contribute to ambidexterity building[59].

Acknowledgement

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