

The Co-evolution of Organizational Culture Transformation and Ambidextrous Capability: A Strategic Orientation Perspective

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Abstract—Organizational culture has an important role in enterprises' technology innovation, at the same time it also has evolved in different stages. However, research on what kind of organizational culture will be more conducive to technological innovation is now inconsistent. On the basis of previous studies, we construct the interactive evolution framework between organizational culture transformation and technological innovation ability. We find that there exists coupling relationship between the organizational culture and the mode of technological innovation, different organizational culture is applied to different innovation mode. Furthermore, from the dynamic point of view, in different periods there also exists the feature of synchrony evolving between the organizational culture and technological innovation mode under the strategic orientation. During this interactive circulating process, enterprises gain growth and competitive advantage.

Index Terms—organizational culture, exploratory innovation, exploitative innovation, ambidextrous capability, co-evolution

I. INTRODUCTION

As competition intensifies and the pace of change accelerates, technology innovation has become the main source of competitive advantage for the enterprises to obtain and improve competitiveness. Firms need to renew themselves by exploiting existing competencies and exploring new ones. The notion of exploration and exploitation has emerged as an underlying theme in research on innovation, organizational learning and strategy [1]. Various literatures have argued that organizations need to become ambidextrous and develop exploratory and exploitative innovation simultaneously in different organizational units [2]. However, the achievement of technological innovation appears as the market value of the products superficially, it deeply reflects the corporate values and good business image. Good organizational culture will help the promotion of enterprise's innovation ability. Exploratory innovation and exploitative innovation are different in mental, resources and organizational mode. In order to obtain exploratory and exploitative innovation ability at the

same time, firms must make a reasonable allocation of resources between them and conduct corresponding adjustment to change. Organizational culture has the function of guidance and adjustment to mediate the paradoxes in the process of enterprise development. Nevertheless, the existing literatures rarely discuss the balancing of exploratory and exploitative innovation from the perspective of organizational culture. Hsing-Er Lin and Edward have found that a stronger knowledge-sharing organizational culture will lead to higher levels of innovation ambidexterity [3]. The relationship between organizational culture and innovation, different types of organizational culture's influence on innovation has been confirmed by a number of studies. Different kind of organization culture adapts to different forms of innovation, but how organizational culture affects the development of ambidextrous ability? During the process of ambidextrous ability development, how the organizational culture adapts to ambidextrous innovation? All these problems need to be concerned by academic and practitioner. Based on an exploratory case study of a high-tech enterprise in China, the purpose of this study is to investigate the interactive relationship and co-evolution process between organizational culture and ambidextrous innovation ability.

II. LITERATURE REVIEW AND ANALYSIS FRAMEWORK

A. Organizational Culture Transformation

Organizational culture is 'the underlying values, beliefs, and principles that serve as a foundation for an organization's management system as well as the set of management practices and behaviors that exemplify and reinforce those basic principles' [4]. In different development period, the firms will show different types of dominant culture. Quinn and Cameron believe that the organizations' dominant culture is adhocracy culture in entrepreneurial stage, clan culture in consolidation phase, then market and hierarchy culture in formal phase [5]. While, Boisot and Child point out that organizational culture transformation path of Chinese enterprises should be different from the western countries. Culture transformation path is from adhocracy to feudal hierarchy, and then feudal hierarchy [6]. Thus, we can see theoretical divergence among the literatures of

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organizational culture transformation, there will be different results in different research situation.

B. Ambidextrous Innovation Capability

Exploration and exploitation are two basic organizational learning activities. Units that engage in exploratory innovation pursue new knowledge and develop new products and services for emerging customers or markets. Units pursuing exploitative innovation build on existing knowledge and extend existing products and services for existing customers [7]. However, exploratory and exploitative innovation compete on the scarce resources, they are a couple of innovation paradox. On the other hand, some scholars believe that they can complement each other [8] and [9]. The balance between exploratory and exploitative innovation has been confirmed a positive influence on corporate performance by a number of studies [10]. Thus, it is important for firms to obtain ambidextrous innovation ability.

C. The Co-evolution between Organizational Culture and Ambidextrous Capability

Different types of organizational culture have different effects on innovation. Adhocracy culture could enhance the development of new products or services, while hierarchy culture inhibits product innovation [11]. There is also different organizational culture for different technology innovation modes, such as open and closed innovation [12]. Thus it can be seen that technology innovation requires the organizational culture to adjust on one hand, the pattern and manner of technology innovation is driven by organizational culture transformation on the other hand.

This paper has established a theoretical analysis framework as shown in Fig. 1. We consider that there are compatibility, interactivity and co-evolution between organizational culture transformation and the development of technology ability in different periods. The enterprises' technology innovation capabilities have promoted in the interactive evolution process.

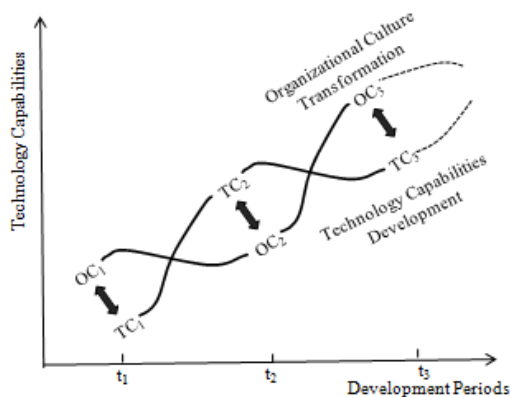


Figure 1. Analysis framework

III. RESEARCH METHODOLOGY

We chose a case study as the research methodology for two reasons. First, the research concerns a “how”

question and is thus better answered through inductive methods [13]. Second, since the study aims to break new grounds on sustainability research, a case study is more effective because of its strength in exploring new conceptual arguments. Anhui iFLYTEK Information Technology Co., Ltd. was selected as the case organization for several reasons. First, iFLYTEK is the largest intelligent speech technology provider in China and the core technology of its intelligent voice represents the highest level of the world. Second, as a listed company, we can acquire more available public data and help us to carry out the data collection and analysis. At the same time, iFLYTEK is located in the same area with our research team. It allows us to obtain the relevant data from the enterprise more easily.

In order to enhance the conclusions validity, the research utilizes multiple sources of information [14]. First, the literature study, it refers to gather relevant research literature from the journal net, newspapers and the official website of iFLYTEK at the beginning of the study. Second, interview with the business managers to seek for their assistance on providing and confirming some related information and several views on the study. Third, internal materials from the sample firm, annual reports and senior leader's speech and so forth.

IV. CASE DESCRIPTION

A. Organizational Background

iFLYTEK was founded in 1999 by Liu Qingfeng, a doctoral student of USTC and is now a national backbone software company which is engaged in researching intelligent voice/language technology and developing software/chip products as well as voice information service. iFLYTEK has a solid research foundation and long-term accumulation in the area of intelligent voice technology, and is equipped with a series of international leading achievement in voice synthesis, voice recognition, oral evaluation etc. Based on its core technologies with independent intellectual property rights, iFLYTEK has launched kinds of products to meet different application environments. Listed on Shenzhen stock exchanges in 2008, iFLYTEK currently accounts for higher than 70% of Chinese voice technology market share, more than 1500 partners. Within a short span of 13 years, iFLYTEK has become the Asia-Pacific region's largest voice listed company as well as China's most valuable software company.

B. Co-evolution between Organizational Culture Transformation and Ambidextrous Capability

According to the survey results and the key or turning events during the development history of iFLYTEK, the process of organizational culture transformation and ambidextrous innovation capability evolution will be divided into three different stages, as follows:

1) Stage I: Entrepreneurial stage (1999-2002)

In the first phase from 1999 to 2002, it was the time that almost all the Chinese voice applications were monopolized by foreign companies like Microsoft, IBM,

and Motorola etc. It was also the time when the founders determined to build a Chinese "Bell Labs" and set up the company's core culture. Technology is the foundation of iFLYTEK, meanwhile, exploratory innovation is considered to be the driven source for the foundation as well as development of iFLYTEK. At this stage, to attain substantial breakthroughs in core technology is the main target, by integrating the voice core technology resources in China, cooperating with universities and research institutions, the core technology of iFLYTEK has been improved rapidly. Table I presents the characteristics of organizational culture and ambidextrous innovation capability for this period of iFLYTEK.

TABLE I. CHARACTERISTICS OF ORGANIZATIONAL CULTURE(OC) AND AMBIDEXTRIOUS CAPABILITY (AC) IN STAGE I

Dimension	Features	Typical proofs
OC	Adhocracy culture	(1) "Chinese voice technology must to be done towards the best in the world by the Chinese." (2) Dynamic and creative work environment, the leader lay emphasis on innovation
AC	Exploratory innovation mainly	(1) iFLYTEK devotes itself to integrate the core technology resources of the domestic research institutes and establish joint labs to conduct the technology research (2)To compete with the international IT giants, we must always stand in the high ground of the Chinese speech technology and make substantive breakthrough of the core technology.

2) Stage II: Restructuring and development stage (2003-2007)

TABLE II. CHARACTERISTICS OF ORGANIZATIONAL CULTURE (OC) AND AMBIDEXTRIOUS CAPABILITY (AC) IN STAGE II

Dimension	Features	Typical proofs
OC	Clan culture	(1) "A friendly working environment, mutual cooperation and communication between employees, it likes a big family." (2) The company establishes the E-mail and internal network platform which makes the communication more fluently and benefits more for all departments working together to complete a new product development.
AC	Exploitation based on exploration	(1) "We must understand more about the consumers' potential demand, and create new products and services to meet consumers' demand better based on new technology." (2) iFLYTEK has built a voice development platform, so all of the cooperative partners can develop products and systems on the basis of iFLYTEK's voice technology.

In 2004, iFLYTEK's sale revenue has exceeded billion for the first time, the technology has been applied to many industries. However an important problem that iFLYTEK faced with is how to make its technology as fast as possible to approach into all aspects of social life? For dealing this, iFLYTEK carried out the so called "Voice Platform Strategy" to attract developers from different industries. The content of its corporate culture

was getting enriched to be a big ruling family during the same time. Table II presents the characteristics of organizational culture and ambidextrous innovation capability for stage II.

3) Stage III: Fast-Growing stage (2008-now)

With the fast expansion of the company since listed on Shenzhen stock exchanges in 2008, iFLYTEK changed its strategy into attaching equal importance to both technology and market in order to become a large innovative IT business group. Meanwhile, its corporate culture and value were becoming systematic and mature, turned into a four-dimension culture system namely as human-oriented culture, executive culture, innovative culture and brand culture. Table III presents the characteristics of organizational culture and ambidextrous innovation capability for stage III.

TABLE III. CHARACTERISTICS OF ORGANIZATIONAL CULTURE (OC) AND AMBIDEXTRIOUS CAPABILITY (AC) IN STAGE III

Dimension	Features	Typical proofs
OC	Market culture	(1) "First-class enterprises meet the market, superior enterprises create the market. So we need to be more industriously to grab market and explore blue ocean market." (2) iFLYTEK is now goal oriented and emphasis on the competition between employees
AC	Mutual development of exploitation and exploration	(1) "On the one hand, we must keep advanced technology. On the other hand, it also should be paid close attention to market demand. Both of them cannot relax for a while." (2) iFLYTEK continues to strengthen technical research and development with joint lab, the iFLYTEK open voice cloud platform makes it more innovative for developing product and application in the era of mobile Internet.

V. DISCUSSION AND CONCLUSION

The purpose of this study is to investigate the interactive evolution relationship between organizational culture transformation and technological innovation capability using the case of iFLYTEK. As described above, it can be found that the dominant culture in each stage of development is quite different as well as ambidextrous innovation ability. In entrepreneurial stage, technology-oriented strategy makes the working environment and culture more innovative to get core technology breakthrough. Meanwhile, the demand of exploratory innovation makes the organizational culture more creative and adventurous. In restructuring and development stage, the strategy turns to market orientation. Friendly working environment likes a big family which accelerates the development of new products and services. Exploitative innovation and new product development also require the intercommunication and teamwork between the staffs in various departments. In fast-growing stage, the strategy switches to goal orientation and the enterprise seeks for high market share and position. There are concurrence and mutual

development between exploratory and exploitative innovation in iFLYTEK. The firm stresses on competition and achievement of organizational vision, and has formed a market-oriented culture of innovation.

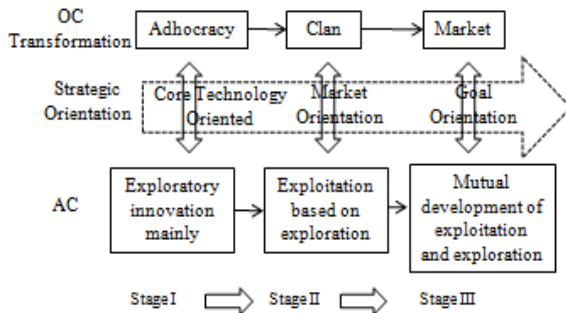


Figure 2. The co-evolution of organizational culture transformation and ambidextrous capability of iFLYTEK

Thus, at different stages in the development process of iFLYTEK, the organizational culture and the ambidextrous capability constantly co-evolution and adapt to each other under the guidance of strategic orientation (see Fig. 2). Based on a 13 years longitudinal case study of a listed high-tech enterprise in China, we draw the following conclusions. There exists coupling relationship between the organizational culture and the mode of technological innovation, adhocracy culture is beneficial for exploratory innovation, clan culture is beneficial for exploitative innovation, market culture is beneficial for coexist development between exploratory and exploitative innovation. Furthermore, from the dynamic point of view, in different periods there also exists the feature of synchrony evolving between the organizational culture and technological innovation mode under the strategic orientation. Therefore, it is crucial for the enterprise to shape a suitable culture atmosphere for different kinds of technological innovation, break through the old concept of cultural barriers, and reform the culture factors which are not adapted to the firm's innovation. Meanwhile, it also needs several macro strategic guidelines, so that the managers can grasp the direction of cultural transformation and the way of technological innovation.

According to our study, it shows that the organizational culture transformation path of iFLYTEK abides by "adhocracy- clan- market". The research results are also verified by the organizational culture changing path model of Quinn and Cameron. It makes a little contribution to the theory on what kind of organizational culture is more advantageous to technological innovation for academia. At the same time, it provides a practical application for business managers to make effective management of organizational culture and innovation modes. There are also some limitations in this study. The single case study method is advantage to improve the research depth, but lack of the research breadth due to the limited number of samples. In order to test the applicable scope of this study, it is also necessary to examine the experience further in different industries and regions during the follow-up work.

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