A Case Study of Entrepreneur’s Behavior and Enterprise Transformation Mode Selection

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Abstract
As one of the main bodies of the market, SMEs play the most active part in the market, fueling the industrial structure transformation. Currently, the relevant researches on this topic mainly focus on the motives of the transformation, integration of resources allocation, path evolution, mode selection and consequences of the transformation. Few studies, however, have been targeted at the correlation between entrepreneurs’ behaviors and Hi-Tech SMEs transformation mode selection. This paper conducts a case study of Qi Wei Te solar energy corporation on this issue. The research reveals that the entrepreneur’s risk preferences fluctuate in the life circle of the enterprises, and accordingly affect organization’s behaviors and transformation selection of the enterprises. This paper presents the patterns of incremental and drastic transformation modes based on the entrepreneur’s behaviors. The results of this paper contribute and enrich the theoretical framework of the relationship between entrepreneur’s behavior and business transformation, and present referral value for the transformation of Hi-Tech SMEs.

Keywords: Hi-Tech SME, Enterprise Transformation, Entrepreneurs’ behavior, Incremental Transformation, Drastic Transformation
Introduction

As the most active part in the market, Hi-Tech SMEs have become a new economic growth point, fueling the industrial structure transformation in China. According to The Minor Enterprise Information Network the number of science and technology small giant enterprise doubled in number than in 2014 in Hebei Province and nearly 80% well-known trademarks are created by them. It is not a unique instance, but has its counterpart, Hi-Tech SMEs support the half of Tianjin industry. Under such background, the transformation of SMEs has become the focus of scholars, especially in the strategic management and change management fields (Yang, 2010; Kong, 2012).

Currently, the relevant researches on this topic mainly focus on the motives of the transformation (Zhang, 2014; Jiang, Gong, & Wei, 2011), integration of resources allocation (Kong, 2012), path evolution (Jiang, Gong, Xu, & et al., 2015), mode selection (Chen & Zhang, 2016) and consequences of the transformation. The research on transformation model classification is mainly focus on the object of study (such as: business, process, industry, ect.). Some enterprises in the process of the transformation completely adopt new technologies and business, while others hold the basis of the original technology and business. Andrew and Marshall (1995) consider the former is incremental transformation, the latter is drastic transformation.

Entrepreneur is the key factor of enterprise transformation in SMEs. They not only affect the survival of enterprises will also influence the future development of enterprises. Entrepreneurs decide the enterprise transformation model and they often have different behavior patterns in different stages of enterprise development (Wu, Ouyang, & Yao, 2015). It is not only the need of management practice, but also the issue of theoretical development to figure out the internal mechanism of entrepreneurial behavior and the choice of enterprise transformation model. Few studies, however, have been targeted at the correlation between entrepreneurs’ behaviors and Hi-Tech SMEs transformation mode selection. This paper conducts a case study of Qi Wei Te solar energy corporation on this issue.

Literature Review and Theoretical Framework

Entrepreneur’s Behavior

For nearly two centuries, scholars have been focusing on the entrepreneur’s ability to control and organize production processes in the context of risk and uncertainty (Xie, Wu, Xiao, & et al, 2016). Kvietok (2014) believes that entrepreneurs are willing to take reasonable risks in order to succeed. Entrepreneurs believe that fate is in their own hands, they are independent. Honjo (2015) believes that people with knowledge, skills, and experience in the field of business management are more likely to become entrepreneurs in their future careers. Ucbasaran (2003) believes that risk lover is more likely to become entrepreneurs than risk averter. Risk preference not only determines the unique information processing mode, but also is considered as an important cognitive power in the dynamic competitive environment. Risk preference determines the entrepreneur’s decision-making path and behavior model. Risk preferences represent opportunities awareness and strong desire for excess profits and directly induce innovation behavior. And scholars think that the individual’s risk preference
leads to the anchoring effect on interpersonal interaction expectation and the degree of intimacy in interpersonal relationship, and then exaggerate the social network of their own (Baldwin, 1992).

In the middle of the twentieth Century, the study on entrepreneur’s behavior in the neoclassical theory was based on the maximization of the utility of individual expectations. Neoclassical scholars said that the unique behavior of entrepreneurs relative to workers, consumers and managers is to take risks. Kihlstrom and Laffont (1979) based on the risk aversion to establish a model of the risk-taking coefficient of entrepreneurs, more risk averse individuals become workers while the less risk averse become entrepreneur. With the development of research, there was Austrian theory (Kirzner & Israel, 2009) which suggests that market disequilibrium provides entrepreneurial opportunities. Austrian theory focuses on the use of opportunities, but to a certain extent, it ignores the exploitation of opportunities. McClelland (1987) believes that the ability of entrepreneurs to use and exploit opportunities is one of the success of the enterprise. Misra and Kumar (2000) proposed personal psychological traits do not guarantee that they become an entrepreneur, but its behavior and action can, it also puts forward looking for opportunities and opportunities awareness to act as important dimensions of entrepreneur’s behavior (Hood & Young, 1993). Risk preference determines the degree of development and utilization of opportunities (Zhang & Zhang, 2016).

With the development of entrepreneur’s behavior theory, Joseph Schumpeter put forward the “creative destruction” function of entrepreneur’s behavior (Innovative behavior), to a certain extent, the theory of entrepreneur’s behavior is supplemented (Schumpeter, 1934). The present research mainly divides the innovation behavior into the incremental innovation and the radical innovation, and the research on the entrepreneur’s innovation behavior provides the fundamental driving force for the realization of the innovation driven strategy under the background of “new normal”. Liu and Wu (2012) constructed a model of entrepreneur’s behavior in modern China, and put forward that the innovation behavior and the opportunities awareness are the important characteristics of the entrepreneur’s behavior. But entrepreneur’s behavior is the result of a series of internal and external factors, only rely on the internal resources of enterprises cannot meet the development of enterprises, more and more enterprises are being embedded in more extensive and overlapping network (Gulati, 1999), the entrepreneur’s behavior is embedded in the social network too. Based on the existing literature, this paper argues that entrepreneur’s behavior mainly includes the opportunities awareness behavior, innovation behavior and network building behavior under the control of entrepreneur’s risk preference.

**Enterprise Transformation**

In the actual operation of the enterprise, most of the enterprise transformation ended in failure (Agarwal & Helfat, 2009). McKinsey’s 2014 survey shows that only about 26% of companies believe that the transformation of enterprises will help to improve the performance and promote the sustainable growth of enterprises.

The factors that affect the transformation of enterprises can be divided into internal factors and external factors. The scholars who study the external factors think that the external environment of the enterprise is an important factor that affects the
transformation of enterprises. For example, Zhang (2014) believes that the transformation of enterprises is the process of adapting to the competitive external environment, Virany et al. (1992) suggest that in order to adapt to the external environment, it is more helpful to adopt drastic transformation than steadiness for the survival and growth of the enterprise. Most of the research on the factors affecting the transformation of enterprise focus on internal enterprise. Most scholars believe that innovation is the key to the transformation of enterprises, the transformation of enterprise innovation under environmental regulation is a process from quantitative change to qualitative change (Zeng, Feng, & Zhang, 2016). The institutional environment has an important influence on the business transformation of OEM Enterprises, the ability of enterprise based on “adaptive learning” determines the transformation of OEM Enterprises (Mao, Jiang, & Mo, 2009). Jing and McDermott conclude that the leaders' level of aspiration and political skills of the state-owned enterprises play an important role in the transformation of enterprises through inductive case studies (Jing, & McDermott, 2013). Deng and Rui (2013) put forward the cognition of the enterprise managers and the construction of the ambidextrous competence is beneficial to the enterprise strategic transformation.

There is no fixed pattern in the transformation of the enterprise, the enterprise should choose the suitable transformation model according to its own resources, ability and the judgment to the environment. Through the analysis of literatures, it is found that the model of enterprise transformation focuses on the study of unilateral content (such as business process, business content, enterprise structure, enterprise strategy, etc.). The transformation of the business transformation of the processing enterprises from OEM to ODM (Original Design Manufacturing, the original design and production) and then to OBM (Original Brand Manufacturing, the original brand production). By moving around the Smile Curve in order to promotes the additional value of products on the value chain, or by turning to emerging industries to achieve the transformation of the value chain to enhance the value of the product for business transformation (Zhao, Wang, 2012). Mixed and embedded service transformation under different economic cycles (Chen, & Zhang, 2016). Zhang (2014) studied the transformation of SMEs in the industrial cluster under the super competitive environment and proposed the collaborative model of enterprise transformation. Xu (2010) is proposed the six elements of the strategic transformation of Chinese Enterprises. According to the direction and degree of strategic transformation, the strategic transformation of enterprises can be divided into drastic strategic transformation, incremental strategic transformation, erosive strategic transformation and Structural Strategic Transformation (Xue, Zhou, & Chu, 2012). Reger et al. (1992) through empirical data to verify the general environment in the enterprise will take the incremental transformation of the way, in a volatile environment will generally take drastic transformation. Marquish (1982) divides technological innovation into incremental innovation, system innovation and drastic innovation according to different degrees of innovation. After that, the scholars divided innovation into two types of incremental innovation and drastic innovation. Similarly, the research on enterprise transformation can be divided into incremental transformation and drastic transformation (Pellettiere, 2006). Drastic transformation refers to some enterprises take technical and business or new business models in the process of transformation, and the incremental transformation refers to some enterprises based on the original technology, business or business model to conduct the new technology and business transformation (Andrew et al., 1995).
Research Framework

The entrepreneur’s risk preference has a direct impact on his behavior, and it changes with the increase of experience and learning ability. In such a situation, the behavior model of entrepreneurs will also be changed (Zhang, Zhang, & Fan, 2016), finally led to changes in corporate transformation model. Opportunities awareness is an important driving force for the success of enterprise transformation. And it enables enterprises to accurately capture new market demand in a rapidly changing environment. Specifically, Entrepreneurs who are good at digging opportunities can quickly capture the development of new technologies and new business model for the development of enterprises and can provide the basis for enterprises to create new competitive advantages (Teece, 2012). Entrepreneurs who are good at using existing opportunities can better integrate and configure resources (Guo, & Cai, 2014). Entrepreneurs through the coordination of these two acts provide power for the successful transformation of enterprises. To a certain extent, through the dig of opportunity enterprises can make the radical innovation, get first mover advantage. On the basis of the radical innovation, we can improve the new product according to the market demand. It is essential for entrepreneurs to put the necessary resources into the implementation of opportunities awareness behavior and innovation behavior (Luo, Ren, Jiao, & et al., 2014). The network composed of business relations and political relations is an important channel for obtaining and utilizing resources (Luo & Tung, 2007), and provides a good environment for the transformation of enterprises.

Based on above all, we construct a framework for the transformation of entrepreneur’s behavior and enterprise transformation based on entrepreneur’s risk preference (see figure 1). This paper argues that the entrepreneur’s risk preference affects the perception of market opportunity, and then constructs the key resources needed for innovation through the network.

![Research framework of entrepreneur’s behavior and enterprise transformation model](image)

Figure 1: Research framework of entrepreneur’s behavior and enterprise transformation model

Case Situation and Research Methods

Selection of Target Cases

Qi Wei Te solar energy corporation was founded in 2005. It is the rapid growth of Hi-Tech SMEs. In 2008, it was the first time that Qi Wei Te given up the air conditioner market shift to the solar air conditioner market. In 2014, the second transformation, in the preservation of solar air-conditioning business, mainly develops
gas heat pump. In the early period of transformation, due to the inertia of thinking and lack of experience, suffered setbacks.

Figure 2: The relationship between main business and entrepreneur’s behavior

**Method**

In this paper, the research is carried out follow the norms and procedures of case studies (Xu Zheng, 2010). Based on the following reasons, this paper adopts the method of longitudinal case study: (1) the relationship between the transformation of Hi-Tech SMEs and entrepreneur’s behavior is an area that has not yet been paid attention to, and case study is applicable to the early stage of a field study (Eisenhardt, 1989). (2) the purpose of this paper is to explore how the entrepreneur’s behavior influences the transformation of enterprises, and the answer to the question belongs to the category of “how”, so it is suitable to adopt the method of case study.

**Data collection**

In this study, the reliability and validity of the research were analyzed from four aspects: construct validity, external validity, internal validity and reliability, as shown in Table 1, (Yin, 2008).

<table>
<thead>
<tr>
<th>checkout</th>
<th>strategy</th>
<th>Using phase</th>
<th>Concrete methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct validity</td>
<td>triangulation</td>
<td>data collection</td>
<td>Open interviews, Informal interview, Internal information, Enterprise website, Media interview</td>
</tr>
<tr>
<td></td>
<td>evidence chain</td>
<td>data collection</td>
<td>Raw materials - key sentence selection - condensed related categories - the combination of theory and data - a theoretical model</td>
</tr>
<tr>
<td>report verification</td>
<td>data analysis</td>
<td></td>
<td>The coding materials to the enterprise audit, ensure the accuracy of understanding</td>
</tr>
</tbody>
</table>
**Data analysis**

In this study, the data were analyzed by the method of in-depth content analysis, which did not set up the initial theoretical preference and the initial theoretical hypothesis before the analysis of the case data (Eisenhardt, 1989). The data analysis process of this study is as follows: first, set up the data analysis team (3 people). In order to ensure the reliability of the data analysis, the data were sorted into different documents according to different data sources, conduct a preliminary classification by analyzing the statements of different groups of materials from different sources. Extracting statements related to entrepreneurial behavior and enterprise transformation, to be used as label. The second step is to start open coding. Analysis of extracted statements by different members, and then the statement is conceptualized and classified. Finally, the conclusions of each member are compared, and the disputed areas are analyzed, and the related statements are analyzed and discussed, and find the internal relationship between the various categories, can get the following story line (see figure 3). On the basis of categorization, the author further analyzes the main category and the core category, and then constructs the corresponding model.

![Figure 3: The relationship of entrepreneur’s behavior and transformation model](image-url)
Case finding and model building

In Hi-Tech SMEs, the entrepreneurs who master the core technology determines the fate of the enterprise. In this study, we analyzed the behavior of entrepreneurs in the process of transformation and found that the second successful transformation is based on the achievements of the first transformation. Pay attention to the market demand, continuous improvement, to achieve the second incremental transformation. Generally speaking, in the process of enterprise development, these are the integration and iteration of entrepreneur’s behaviors. The behavior integration, not only focus on a single behavior, but in a specific situation, to take the appropriate action combination, see figure 4. The iterative behavior is not a simple cycle of replication, but the combination of behavior according to certain steps, based on the previous research, the potential technology to maintain a keen intuition, according to market demand, to achieve the iterative upgrade effect, through the cycle of rise, achieve the incremental transformation.

Integration of entrepreneur’s behavior and enterprise transformation

Hi-Tech SMEs with high competitive environment, the high competitive environment leads to external unpredictable changes, enterprises often can only passively adapt. The choice or combination of the transformation mode can change the situation of the organization, make the enterprise better adapt to the external environment. The integration of entrepreneur’s behaviors affects the choice of the mode of enterprise transformation, and the choice of the mode of enterprise transformation is one of the key factors of successful transformation. Through case analysis (see table 2), it is found that in the process of transformation, the entrepreneur’s behaviors pattern is the effective integration of the entrepreneur’s behaviors, the external environment, the relational network, the technology and so on. In the process of enterprise transformation, the integration of entrepreneurial behavior in the process of enterprise transformation mainly involves the behavior pattern under different risk preferences.

Table 2: The key concepts and examples of the integration of entrepreneur’s behavior

<table>
<thead>
<tr>
<th>Situation</th>
<th>Core category</th>
<th>Evidence case</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk preference</td>
<td>Innovation behavior</td>
<td>“We cannot find Lee in the general office, Lee always put the time in the laboratory to study new technologies.” (a1)</td>
</tr>
<tr>
<td></td>
<td>Weakening networking construction</td>
<td>“Not good at dealing with government departments, for some of the poor cultural level of entrepreneurs is also a persistent attitude, rarely authorized” (a8)</td>
</tr>
<tr>
<td></td>
<td>Taking opportunity</td>
<td>“In the case of shortage of funds, not aggressive, everything should by nature” (a13)</td>
</tr>
<tr>
<td>Moderate risk preference</td>
<td>Innovation behavior</td>
<td>“In the existing ammonia refrigeration technology to improve the development of a gas heat pump” (a16)</td>
</tr>
<tr>
<td></td>
<td>strengthening networking construction</td>
<td>“Preliminary decentralization in the enterprise, the interpersonal activities handled by the investment director” (a14)</td>
</tr>
</tbody>
</table>
Creating opportunity  “Under the premise of not applying ammonia refrigeration technology in China, this technology has been introduced abroad, so the technology has not been developed in China” (a6)

<table>
<thead>
<tr>
<th>Risk preference</th>
<th>High risk preference</th>
<th>Moderate risk preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities awareness behavior</td>
<td>dig</td>
<td>dig</td>
</tr>
<tr>
<td>Innovation behavior</td>
<td>explore</td>
<td>utilization</td>
</tr>
<tr>
<td>Network building behavior</td>
<td>Always be here</td>
<td></td>
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</table>

Figure 4: The model of entrepreneur’s behavior integration

Iteration of entrepreneur’s behavior and enterprise transformation

With the development of the times, the enterprise can obtain the desired user information at low cost with the help of the Internet. It provides favorable conditions for the iteration of entrepreneur’s behavior in the process of enterprise transformation, and the iterative activities can help enterprises reduce the risk in the process of transformation (Luo, et al., 2014). Through the case analysis found that in the process of enterprise transformation, entrepreneur’s behavior is structured with these tight feedback loops of making mistakes and learning and new combination (see figure 4).

Figure 5: The integration and iteration of entrepreneur’s behavior
Conclusions and discussion

This paper analyzes the correlation between entrepreneurs’ behaviors and Hi-Tech SMEs transformation mode selection based on a longitudinal case study and found that (see figure 5) the integration and iteration of entrepreneur’s behavior is beneficial to the successful transformation of enterprises.

Study on behavior theory mainly from the perspective of psychology, entrepreneur’s experience has an impact on entrepreneur’s risk preference, entrepreneurs with high risk preference tend to explore behavior, moderate entrepreneurs tend to use behavior. Entrepreneur preferences may change in the process of enterprise development, entrepreneurs through continuous exploration, sorting and iterative their behavior in order to adapt to the internal and external situation of the enterprise. This study shows that in the process of the enterprises’ transformation, the integration and iteration of behavior is to adjust the behavior combination in different situations. In this paper, we further enrich the strategic discussion of “iterative micro innovation” (Luo, et al., 2014) and “iterative update Convention” (Xie, et al., 2016). Through case studies, this paper points out that through the integration and iteration of behavior, it is more conducive to the choice of enterprises in the process of transformation.

Through the research on the entrepreneur’s behavior in the process of enterprise transformation, we can provide the reference for other Hi-Tech SMEs. Learn from failure, learn from experience. For the micro foundation of the external environment of enterprise transformation as the economic restructuring, enterprise success to the economic transformation of the relationship between the success of the transition, the government should formulate favorable policies to guide all entrepreneurs take entrepreneurial behavior to promote business success in transition.

Limitations of the article: this paper summarizes the conclusions based on a single case, whether other industries and areas of enterprise application needs further analysis, research in the future, can be increased in line with the appropriate case, multi case studies, and by means of replication and differential replication to analyze, in order to make the conclusion more persuasive.
References


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