

**Organizational Evolution of China's Third-front Enterprises:
Cases Study on Aosheng Group**

GUO Dong

Thesis submitted as partial requirement for the conferral of

Doctor of Management

Supervisor:

Professor Henriques Duarte, Assistant Professor, ISCTE University Institute of Lisbon

Co-supervisor:

Professor JING Runtian, Professor, University of Electronic Science and Technology of China,
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Declaration

I declare that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed

Date 6.19.2013

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作者申明

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Abstract

China's "Third-front" enterprises emerged in a specific historical period and specific institutional environment and played an important role in China's national defense construction and Chinese history. Due to changes in the world political and economic situations and domestic economic development, the development of Third-front companies face many challenges: support from central government have changed; they can't depend only on government and military orders; need to face market-competition. Therefore, a comprehensive study on the pattern of the Third-front enterprises' conversion of military-oriented technologies for civil will allow to have a theoretical explanation of the internal forces of the organization evolution as well as their interactions with external factors.

Based on the punctuated equilibrium theory, applying case study approach, Aosheng Group is selected as the research case because it is a typical and successful representative of Third-front enterprises. Qualitative analysis is the main method while quantitative evaluation was used as an auxiliary evaluation method. There are four steps included in the process of data analysis. At first, all data come from all possible ways are divided into two groups. One group is about macro environment, the other is about the evolutionary process of Aosheng. Then, the macro environment is analyzed from three facets such as political environment, economic environment, and market environment. Third, the four stages of Aosheng's evolution are identified. And the changes of organizational structure, performance, strategic positioning, change pressure, and organizational inertia at each stage are analyzed in detail. Finally, the evolutionary patterns emerged from the results of previous analyses are identified. The rules of evolution are proposed as some theoretical propositions.

The current research will advance the researches on Third-front enterprises, changing the perspective from outside of organizations to within organizations. The research also provides appropriate policy-making and business practices recommendations for policy-makers and business executives. Finally, the limitations of the study and future research directions are discussed.

Key words: organizational evolution, Third-front enterprises, case study, military-civilian integration

JEL: M1

Resumo

As empresas chinesas da “Terceira-Frente” surgiram num contexto histórico e institucional específico e jogaram um papel importante na construção da defesa da China e na sua história. Devido a mudanças económicas, políticas e do desenvolvimento económico doméstico enfrentam vários desafios: mudanças no apoio governamental; não podem depender exclusivamente das encomendas do governo e dos militares; necessidade de enfrentar a competição de Mercado. Assim um estudo compreensivo do padrão de conversão das tecnologias militares para civis permitirá uma explicação teórica das forças internas da evolução da organização e das suas interações com factores externos.

Baseada na teoria do equilíbrio pontuado e aplicando um estudo de caso, seleccionamos o grupo Aosheng por ser típico e representar um caso de sucesso das empresas da Terceira-Frente. A análise qualitativa foi o método principal e a análise quantitativa foi usada apenas de forma suplementar. A análise de dados foi efectuada em quatro fases. Na primeira a informação das diferentes fontes foi dividida em dois grupos. Um grupo relativo a informação externa e outro relativo ao processo evolutivo de Aosheng. Depois o macro ambiente foi analisado em três vertentes como sejam a política, económica e o mercado. Depois quatro estádios de desenvolvimento do grupo foram identificados. Em cada estádio foi analisado em detalhe a estrutura organizacional, desempenho, posicionamento estratégico, pressão para a mudança e o posicionamento estratégico. Finalmente os padrões emergentes das análises anteriores foram identificados. As lógicas de evolução foram apresentadas bem como algumas proposições teóricas.

A presente investigação contribui para as investigações nas empresas da Terceira-Frente, mudando a perspectiva do exterior para o interior das organizações. A investigação também proporcionou recomendações para os decisores políticos e para os gestores. Finalmente foram apresentadas as limitações do estudo e futuras perspectivas de investigação.

Palavras-chave: evolução organizacional, Empresas da Terceira-Frente, estudo de caso, integração militar e civil

JEL: M1

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I always believe in one ancient Chinese maxim “Read ten thousand books, traveling thousands of miles”. Only by this way, can one improve himself. The experience of studying for a doctorate has changed my world view. And I am sure this appreciated experience will still be meaningful for my future life. This is one of the most important and valuable periods of my life!

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Chapter 1: Introduction

The Third-front construction was originated in the 1960s when the central government believed that another massive world war would break out sooner or later due to the global political and military situation at that time. In order to get ready for the coming war, strategic preparation should be made. Therefore, the majority of the national production and resources were placed in war readiness. For security reasons, a decision was made in accordance with Chairman Mao's strategy to delimitate three regions in terms of geographic location and vulnerability to wars, of which the third is located in the inland and the western regions that are remote and less vulnerable to wars, so that a lot of national-defense-related research and manufacturing institutions could be moved to these regions. Then the third front construction was undertaken with vigor and vitality. Later, the regions were called "the Great Third Front" and the military institutes and factories in it were called "the Third Front" institutions. As the world trend shifted to peace and development, China also entered a new historical stage centering on economic construction. However, enormous challenges were faced by the third front enterprises at the new development opportunity due to the impacts of various factors (both internal and external); many third front enterprises have bankrupted or been on the brink of bankruptcy. Regarding its great significance to the national defense as well as its important role in the national economy, the development of the Third-front enterprises has become a serious problem concerning many stakeholders.

Most researches in China concerning the Third-front enterprises are conducted from the perspectives of historical review, summarizing the decision-making, the implementation, the effects and social impact of the Third-front construction. These researches can provide useful references for the subsequent policy formulation. However, they also have great limitations because they regard the Third-front enterprises as a "black box", and only observe it from a macro perspective while pay little attention to the internal mechanisms. Therefore, they can provide little guidance for the Third-front enterprises, nor can they provide a full theoretical explanation on the evolution of the Third-front enterprises. What's worse, due to the lack of relevant information, there are only a few studies on the Third-front construction and enterprises of China internationally.

Considering the current state of the research, this thesis, adopting the measure of case

study, will further investigate the successful Third-front enterprises so as to find the possible solution to the following problems: What evolution patterns do successful Third-front enterprises have? What factors affect the evolution of the Third-front enterprises and how do these factors connect and interact with each other? We hope to reveal the organization revolution patterns of the Third-front enterprises through researching these questions so as to provide policy suggestion as well as practice guidance for the reform and development of the Third-front enterprises.

1.1 Research Background

Chinese history has turned over a new leaf since the foundation of the People's Republic of China. The past decades saw changes in both political and economic policies, which have left unique marks on the history. Along with the implement of the policy of reforming and opening to the outside world, China's economic policy gradually shifted to marketing from planning, which was surely to offer a unique environment to the enterprises. It can be easily seen that a large number of planning economy stuffs, like state owned enterprises (SOEs) and the Third-front enterprises develop in different ways when compared with those under marketing economy of the developed countries (Hu, 2000; Sun and Tong, 2003; Tylecote and Cai, 2004). Combining the universal law and particularity of development, we can get a powerful mental weapon to explore and reconstruct the world.

The Third-front enterprises were of great significance at the early days after the foundation of the People's Republic of China; however, the strategic status and significance gradually faded away along with the development of the economy and society. In order to survive, the Third-front enterprises have to make a change and the special environment forces them to change in a special way. The history of an organization is of great significance for us to understand the organization and its development (Greiner, 1998; Weber and Dacin, 2011). Likewise, the history of the Third-front enterprises is significant for us to study the Third-front enterprises' organization evolution as well as its evolution rules too since it can provide us with a chance to access to the essential rules.

1.1.1 History of the Third-front

Based on the relevant literatures, reports and books (Chen, 1997, 2001a, b; Huang, 2007; Li, 2009; Li, 2010; Li, 2011; Naughton, 1988; Shen, 2009; Song, 2012; Wikipedia, 2012; Xia,

2009; Yang, 2005) as well as various information available and history text books, the historical stories of the Third-front gradually unfold before our eyes.

China entered a new development stage in 1949 when the People's Republic of China was founded. In 1958, the Sino-Soviet relationship broke down and China faced tough strategic situation. The southeast coastal defense system was vulnerable. All these factors awakened the central government to the importance of building the strategic rear in the west. In August, 1964, the Gulf of Tonkin incident led to an intense upheaval, a massive war was very likely to break out. The US expanded the war area in Vietnam, which directly affected south China and posed a threat to China's security. Meanwhile, The Soviet Union deployed many troops at the border of China (It's said that there were millions of troops). What's a worse, Taiwan authority unscrupulously created an atmosphere of tension between the two sides of the Straits. Under such circumstances, the central government believed that a massive war was around the corner and China should make preparation for that. Therefore, Mao Zedong, at the conferences of the Secretariat of the CPC Central Committee on August 17th and August 20th in 1964, pointed out that the economic arteries of China were grouped mainly in coastal regions and big cities, which were not in favor of war preparedness, so that each province should build its own strategic rear to get ready for the severe strategic situation. Thus, the Third-front construction started in order to build a strategic rear before the war broke out.

Since the 1950s, according to Mao Zedong's strategic deployment, the "Three Fronts " strategy (the first front was the coastal front areas, namely, the southeast coastal areas, the northeast areas and Xinjiang Uygur Autonomous Region; the second front was the middle regions between the first front areas and Beijing Guangzhou railway, including Anhui, Jiangxi, Hebei, Henan, Hubei and east Hunan; the third front was the west regions, including three provinces in southwest (Yunnan, Guizhou, Sichuan) and Chongqing which was later designated a municipality directly under the central authority and three provinces in northwest (Shanxi, Qinghai and Gansu) and the western areas of Hebei, Henan, Hubei and Hunan provinces. The Third-front was devised to develop military enterprises. Since the coastal areas were vulnerable to wars, it's necessary to move the key military enterprises to the remote and less vulnerable inland areas, which were the so called "Third-front" areas. Figure 1-1 shows the "Third-front" areas.

In August, 1964, the National Construction Commission of China held a meeting on the issue of relocation of the military enterprises in the first and second fronts, putting forward that the military enterprises should be scattered generally while grouped at a small scale, and

the most advanced national defense projects should be scattered at the mountain areas that could not be easily found. From the 1960s to the 1980s, more than 1100 medium and large construction projects were examined and approved and many talents were called to the Third-front areas. In 1973, China issued an official document which explicitly claimed to give priority to the development of Guiyang, Chongqing, Anshun and Mianyang, which all became the key areas of the national Third-front enterprises. This is also called the "Great Third-front" construction. In 1963, the gross industrial output value of the seven western provinces (Yunnan, Guizhou, Sichuan, Shanxi, Gansu, Ningxia and Qinghai) accounted for 10.5% of the national gross industrial output value while in 1978 it rose to 13.26%. At the same time, the first and second front provinces developed their own local military enterprises, called the "Small Third- Front", as the supplement to the Great Third-front in order to enhance their own military power in case there should be wars. The Third-front enterprises discussed in this thesis are the Great Third-front enterprises.



Figure 1- 1 "Third-front" Areas in China

Source of the Data: Naughton, B. (1988). The third front: Defense industrialization in the Chinese interior. *China Quarterly*, 115, pp. 351-386.

The special strategic status and the particular locations of the "Third-front" enterprises gave them some unique features. For security reasons, the locations of the Third-front enterprises were usually remote and secluded, most of which were far away from cities. The

objective geographic limit later gradually hindered the development of these enterprises. The frequent natural disasters like flood brought heavy losses to these enterprises from time to time. The geographic features secluded these enterprises from the outside worlds. Therefore, many Third-front enterprises were big and comprehensive, equipped with hospitals, stores, schools and other facilities, which can be called a tiny community. All these hindered their further development.

In late 1980s, with the end of the cold war and the implement of reforming and opening to the outside world, China's focus was shifted to the economic construction. The "Third-front" enterprises had great difficulties in developing and even in surviving due to their geographic problems. In December, 1983, the Third-front office was set up to direct the relocation and conversion of the Third-front enterprises. In 1984, the first 121 enterprises were made to adjust, 48 enterprises were made to move and merge and 15 enterprises were made to switch to other products; some Third-front enterprises were moving to the near cities one after another. The technology intensive military enterprises and key enterprises were relocated in such big cities as Chengdu, Chongqing and Xi'an; some of these enterprises were reconstructed to some extent, e.g. Chongqing Weapon Industrial Base was reconstructed and became Chongqing Iron & Steel Co. Ltd. and Chang'an Group. A few Third-front enterprises that didn't move either made changes in order to survive with the local governments' help (like the 816 project in Chongqing) or gradually went bankrupt.

No agreement on the Third-front construction has been achieved among scholars (Chen, 2004; Li, 2011). As an outcome of the history development, the Third-front construction has brought great impact on China's politics, economy and history as well as the relevant regions, enterprises and people. The Third-front construction was of great strategic significance because it was an effective counter-measure to the potential massive war. It also boosted the social, political, economic and cultural development of the Third-front areas. However, the massive investment in the third front areas resulted in the reduction of the first and second areas' accessibility to the resources and the investment in the national economy, which by and large hindered the development of China's economy.

1.1.2 Conversion of Third-front Enterprises

The Third-front construction was undertaken with vigor and vitality, however, the global situation turned to be not as worse as the central government had expected. The cold war gradually came to an end and peace and development became the common view of each

country.

Most military research institutes and factories in China are located in inland regions, particularly in west regions; that's why they are called "Third-front" (the Third-front originally means the third front areas and later it was used to refer to the military research institutes and enterprises in inland and west regions). In 1978, the policy of reforming and opening to the outside world was made and the basic line of the central government was determined, which made the economic development the focus and priority of the nation. Under such circumstance, the Third-front enterprises were not as important as before, but still indispensable to a strong national defense. Therefore, how to develop the Third-front enterprises became a significant issue.

The experience of other countries afford us a lesson that when there are more military resources than we need, we can convert the military-oriented technology into civil use so as to optimize the resource allocation and exploitation (Gholz and Sapolsky, 2000). This is a common strategy for many countries to promote the economic benefits and efficiency after the cold war (Liang, 2004; Markusen and Costigan, 1999). In 1993, The Clinton administration of the US set the Technology Reinvestment Project (TRP) to encourage military enterprises to develop civilian products (Chu and Waxman, 1998). Enterprises like Lockheed Martin, General Dynamics and McDonnell Douglas all applied their core military technology in relevant civilian fields (Markusen et al., 1999). The chart (figure 1-2) of the dependability on the military business of the well-known military enterprises shows that the harmonious development of military products and civilian products is an important way to make full use of resources and to realize the twin objectives of national defense and economic development. Since the Third-front enterprise are important to the national defense, the conversion of military-oriented technology into civilian use does not mean to transfer these enterprises into civilian enterprises, but to achieve a complimentary development that can both guarantee the strategic need and make full use of the resource to boost the national economic development (Gao, 2011). Here the conversion of military-oriented technology into civilian use is from the standpoint of the Third-front enterprises, which is of the same meaning as "combining military-oriented technology with the civilian use" and "integrating military-oriented technology with the civilian use". However, it is anything but an easy job, many difficulties and failures are surely on the way forward. The US national defense report pointed out that "the successful conversion of military-oriented technology into civilian use can be hardly found" (Augustine, 1997), the same dilemma will surely be faced by Chinese

military enterprises too (Ren, 2005). China's system and background are special, so are the difficulties they will meet (Gao, 2011). As for each individual Third-front enterprise, the military products are priced by the government, which is based on the cost of research, development and manufacturing and elastic. Supervised by the government, the military system is in fact exclusive. Only those who meet the requirements (like security, secrecy, product permission and quality) can enter the system. In such an exclusive system, the military enterprises in fact have only one customer (the government) and a few rivals, which have limited their experience and the way of thinking for a long time. To be more specific, the history has estranged these enterprises from the market competition.

From the background provided above, it can be seen that how the third front enterprises perfectly convert its military-oriented technologies into civil use is a significance issue concerning many stakeholders. However, the Chinese government is not experienced in making relevant policies; they have to adjust the policies based on the results. Meanwhile, they are affected by the global political and economic environment, too. The changing political environment hinders the progress of the Third-front enterprises. Besides, the Third-front enterprises are usually comprehensive and big, which is also a disadvantage. A Third-front enterprise is like an aircraft carrier, equipped with schools, hospitals and other welfare facilities, which makes it more difficult to convert. The previous studies show that there are many factors hindering the development of the Third-front enterprises, such as the backward ideas and the weak talents construction (Tian, 2010). Though it has been discussed and studied in political and academic circles, a comprehensive study on the pattern of the Third-front enterprises' conversion of military-oriented technologies for civil use is hardly seen. A theoretical explanation of the internal forces of the organization evolution as well as their interactions is also needed.

Table 1- 1 Dependability on Military Business of Well-Known Military Enterprises

rank	Company	Nationality	Military products Sales (billion)	Number of staffs	Dependability on military products
1	Boeing	The US	20.5	166000	38%
5	BAE	Britain	14.07	96300	77%
7	Thales	France	6.84	60660	66%
10	Meccanica	Italy	3.72	44960	51%
15	Mitsubishi Heavy Industries	Japan	2.78	61290	13%
21	Rheinmetall	Germany	1.58	25950	37%
25	SAAB	Sweden	1.31	14040	77%
26	Israel Aircraft Ltd.	Israel	1.26	14400	61%
34	KnAAPO	Russia	0.96	20700	95%
47	Indian Ordnance Factory	India	0.69	No known	88%
50	Korea Aerospace Industries	Korea	0.61	3270	80%

1.2 Research Questions

Due to the special historical background, how to convert the Third-front enterprises so as to keep up with the pace of the times is an important issue for governments of all levels as well as the relevant enterprises. In fact, in order to keep up with the new situation and the new strategies, the organization of the Third-front enterprises is bound to change greatly or even to be reformed completely. We tried to explain the phenomenon by adopting the organization evolution theories, only to find that there're too few researches taking Chinese background into consideration though there're abundant organization evolution researches around the world. Moreover, the Third-front enterprises in China have their own unique historical background, characterized by unique economical foundation, investment and industrial focuses (Wang and Liu, 2011). Besides, the different culture also matters a lot to the organization and its development (Shane, 1992). What's more, the transition economic environment is different from the mature marketing economic environment (Tan and Tan, 2005).

As is mentioned in Chapter 2, there are only a few researches on China's Third-front construction internationally, let alone the researches on its evolution. On the other hand, Chinese researchers generally take a macro and historical perspective to study the Third-front enterprises while pay little attention to the organization evolution (Li, 2011). Organization evolution is affected by its history (Garud and Karnøe, 2001), as well as its circumstance and internal factors, which is a complicated process in nature. The Third-front enterprises have unique historical backgrounds, and currently they are developing in a dynamic and special transitional economy. Therefore, it is necessary to explore their evolution patterns.

Different from the previous researches on the Third-front enterprises, this thesis goes deep into the Third-front enterprises to investigate their organization evolution patterns. Only when accessing the interior of the Third-front enterprises and carrying out a thorough investigation, can we better reveal the process and enhance our understanding of the Third-front enterprises' organization revolution. As we have seen, some Third-front enterprises went bankrupt, some are having a hard time, but it's not the whole picture, some Third-front enterprises have achieved great success. How come these differences exist? What evolution have the successful Third-front enterprises experienced? What experience they provide us with? They questions are not only significant to the development of the Third-front

enterprises, but also significant to China's national economy as well as defense.

What evolution pattern a specific Third-front enterprise has is of great significance to the organization evolution research, policy making and management of the Third-front enterprises. For academic research, the patterns of evolution can give us more thorough understanding of the development of Chinese Third-front enterprises. Patterns are substantial rules of organizational development, so the evolution patterns reflect the development rules of Chinese Third-front enterprises. For policy making, the patterns of evolution can provide good instructions, especially for making those policies which influence the whole defense industry for a long period of time. For Third-front enterprises themselves, the patterns of one successful example can provide good experience which can help them to avoid some avoidable failures and unnecessary wastages. Hence, we put forward the first research question: What is the basic pattern for the Third-front enterprise organization evolution?

It is not enough to find out the patterns of evolution, since organization evolution is a complicated dynamic process with a number of interacting factors. Though the patterns of evolution are of great significance, the factors which drive the emergence of these patterns are of more importance to be explored. In order to understand the evolution process more thoroughly, we should dig deeper to examine those key factors which play important roles in the evolution process and their interactions. When we see an enterprise as a whole system, it is important to understand the internal operation mechanism which provides the dynamic for the evolution process of the system. Going deep into the organizations and investigating the connections and interactions between the factors involved from the vertical perspective can facilitate understanding the pattern of the Third-front enterprises' organization evolution. Hence, we put forward the second research question: What are the major internal factors in the organization evolution of the Third-front enterprises and how do they interact with each other?

To some extent, the internal factors and their interactions provide the force to drive the evolution process. However, there are not sufficient reasons for us to neglect the role of external environment; this is especially true for Chinese Third-front enterprises. First, Chinese Third-front enterprises provide relevant services for the Chinese People's Liberation Army. Second, all Chinese Third-front enterprises are very sensitive to the national macro economy. The high growth of national macro economy provides both more market opportunity and government investment for them. Third, Chinese Third-front enterprises are sensitive to the changes of external market. The changes of military market and civilian market direction their

strategy of balancing these two different businesses. All in all, the external environment is important for Third-front enterprises. Therefore, we put forward the third research question: What interactions exist between internal and external factors during the evolution process of Third-front enterprises?

1.3 Research Design

Compared with the statistic based research method, the case study which is good at investigating the chronic changes of the organizations (Pettigrew, 1990) is more suitable for this study because it helps us to better explore the patterns and internal mechanism of China's Third-front enterprises. Anymore, the purpose of exploring the evolutionary rules of organizations compels us to focus on process-way rather than variance-way (Mohr, 1982). Case study is particularly suitable for answering "how" and "why" questions, because these questions can only be answered by dating back to the past rather than discussing the frequency or probability of a certain time. Case study enables the researchers to collect more information by a variety of ways, such as interviews, internal documents, the Internet, questionnaires, journals and magazines. This is the unique advantages of case study (Yin, 1989, 2009). Case study enables us to get the comprehensive information of the subject, especially some information that is inaccessible to the public, so that we can find out the truth and further to reveal the nature of management. A case in case study is different from a sample in normal research, which is chosen by theoretic sampling (Coyne, 1997). The chosen one should meet the requirements of being an extreme case, based on which the study is more likely to reveal the theoretic nature (Eisenhardt, 1989). This thesis is to explore the organization evolution law in specific history background by adopting the existing theories. The punctuated equilibrium theory (Romanelli and Tushman, 1994; Sastry, 1997; Tushman and Romanelli, 1985) will be adopted as the theoretical framework of this thesis to guide the further case analysis, including data collecting and processing. Theoretical adoption can facilitate the increase of the external validity (Yin, 2009).

The whole study has been conducted during 1 year and a half, including research proposal and modification, research design, data collection and triangulation process, data analysis, results discussing and thesis writing and revision. The major work and procedures are shown in Figure 1-2 (Data collecting and paper writing are through the whole research). First of all, we reviewed the literatures relating to the Third-front enterprises and discovered the insufficiency of the previous studies; then we proposed the research questions, based on

which we made and perfected the research plan. Next, we reviewed the literatures relating to the organization evolution in order to know the theoretical development as well as the latest status. Then we proposed, perfected and determined the research framework, based on which we chose the cases, collected and analyzed data over and over again; finally, we got the reliable conclusion. In order to guarantee the quality of the thesis, any problem occurred in the research would be discussed with instructors at home and abroad as well as within the team. A detailed statement of the research methods will be introduced in Chapter 3.

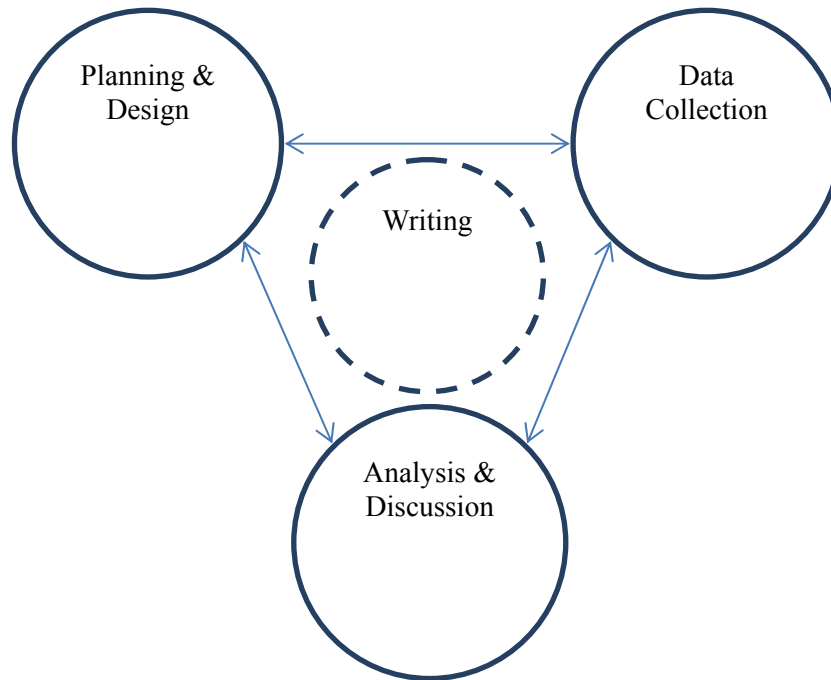


Figure 1- 2 Major Research Process

1.4 Relevance

1.4.1 Theoretical Contribution

By means of a depth analysis on the case, we can discover the typical organization evolution pattern of China's Third-front enterprises, which is not only a test on and a development of the punctuated equilibrium theory in China but also a way for people to better understand the organization evolution of China's Third-front enterprises. Besides, the study can facilitate a better understanding of the general law of the enterprise organization evolution in a transition economy.

Though organization evolution is an important research field in which there are a large number of relevant studies and mature theories. Most of the studies are concerned about

western countries, particularly in the context of a complete marketing economy. China's Third-front enterprises are the product of its planning economy, which are affected by both markets and policies (Krug and Hendrischke, 2008). Usually, the policies are more influential than the markets. The special institutional context of China brings unique difficulties to the Third-front enterprises (Gao, 2011). Based on the specific context, the research can both help people to better understand the specific knowledge and to make due contribution to the general management theories as well (Tsui, 2004; Van de Ven and Jing, 2011). Study on the organization evolution of such enterprises can help us to understand the impact of the policy control on the organization evolution

In addition, the power of a theory can only be proved after various tests in different contexts. Most management theories at present are based on western countries' developed marketing economy, which makes it more necessary to be tested in the unique transition economy context (Tan, 1996; Tan and Litsschert, 1994). The case study on Aosheng Group shows that the punctuated equilibrium theory provides a very useful theoretical perspective for us to investigate the dynamic organization evolution. The present research can facilitate the development of the relevant theories.

1.4.2 Practical Implication

Practically, based on the research findings, due suggestions on policy making for the development of the Third-front enterprises can be given to the government; theoretical guide can be provided for the organization change of the Third-front enterprises; in addition, the research can also afford some valuable experience for the enterprises that are on the way of converting the military-oriented technologies into civil use. Finally, the research can help us to better understand the history and explain the difficult economic decisions at present (Naughton, 1988).

1.5 Innovations

1. The previous studies on the Third-front construction are generally historical and macro descriptions of relevant events and experience summary, which are of great significance for us to understand the history of the Third-front construction as well as the development of the Third-front enterprises. However, owing to their emphasis on the history, these researches tend to regard the Third-front enterprises as homogenous

organizations of the same class and neglect the circumstance and the relation of the internal factors in the process of the Third-front enterprises' organization evolution, which will result in the fact that the research findings can not be applied to a specific Third-front enterprise. Therefore, this thesis, based on the theory of punctuated equilibrium, analyzes the organization evolution of a typical Third-front enterprise----Aosheng Group, finds out its evolution patterns, proposes the five statements concerning the organization evolution of China's Third-front enterprises and builds corresponding models. Both the statements and the models profoundly reveal how the organizations of the Third-front enterprises evolve in China's unique historical and cultural background, and identify the changes of the critical external and internal factors as well as their connections. These researches will facilitate advancing the studies on the Third-front enterprises and the Third-front constructions into the micro level----interior of the organizations from the macro and historical level. Such deep researches will be more favorable for identifying the key factors of the Third-front enterprises' organization evolution; hence we can provide more scientific and targeted advice for the governments who are making relevant policies and the relevant enterprises that are carrying out the strategy of converting the military-oriented technologies into civil use.

2. The previous researches on the organization evolution are generally carried out in mature market economy. The external environment plays a critical role in the evolution of organizations (Romanelli et al., 1994). China's Third-front enterprises are the result of specific historical stage (Berthélemy and Deger, 1995). The environment is of special significance to the organization evolution (Yin, 2009). Previous researches show that China's transitional economy is different from the mature market economy of the west, and the enterprises in the two economies may have different behaviors (Tan, 1996; Tan et al., 1994; Tan et al., 2005). This thesis, under the circumstance of transitional economy, studies the typical cases of the planning market stuffs----the organization evolution of the Third-front enterprises, and reveals that the environment plays a special role in the organizations of the Third-front enterprises as well as the measurable impact posed by the institutional changes on the organization evolution of the micro level of an enterprise.
3. Organization evolution is influenced by a number of factors inside and outside. Policies made by the government are important institutional environment, particularly for the

Third-front enterprises. It is shown in the thesis that the stages of the Third-front enterprises' organization evolution are determined by the policies to a large extent. Furthermore, the policies will influence the Third-front enterprises' organization evolution through influencing the macro economy and the market. These findings can contribute to understanding how the role played by the government in the transitional economy will influence the organization evolution of the Third-front enterprises.

1.6 Thesis Structure

The thesis may consist of eight chapters which will be adjusted according to the research results:

Chapter one presents the research background, questions and significance; besides, it briefly describes the structure and contents of the thesis.

Chapter two first reviews the definition of and the previous studies on the organization evolution, then reviews the previous studies on the Third-front enterprises, and finally draws a conclusion on the inadequacy of the previous studies.

Chapter three systematically shows the research methods and process of this thesis, including the basic ideas and the fundamental approaches of case study-based research, the selection criteria and process of the cases and the basic information of the subjects. Then it explicitly presents the process of the research, including the way of data collection and analysis.

Chapter four carefully analyzes the changing external environment of Aosheng Group's organization evolution in terms of macro political climate, economy and markets.

Chapter five, based on the four stages of the organization evolution of Aosheng Group, briefly describes the organization evolution of Aosheng Group, and then analyzes the changes in organization structure, organization performance, strategic orientation, pressures for changes and organization inertia in detail.

Chapter six discusses the relation of the key concepts generated from the cases studied in the previous chapters, including the relation between the external macro environment and the micro organization evolution process and the interactions among the internal factors. Finally, it draws out the organization evolution patterns of the Third-front enterprises.

Chapter seven presents the theoretical contribution of the research and the practical

suggestions generated from the research findings for policy making and management of Third-front enterprises. Finally, it puts forward the limits of the research and the suggestion for the future studies.

Chapter 2: Literature Review

2.1 Organization Evolution

Organization evolution is a development of the evolution theory in organization research. Organic evolution theory and the punctuated equilibrium theory provide an important theoretical foundation for the studies on development and change of things. They have been adopted in the organization research and have advanced people's understanding of organizations which are special and complex.

2.1.1 Definition of Organization Evolution

Darwin evolution theory (Darwin, 2010) indicates that the evolution of species is a natural process of selection, that is, only the stronger ones can survive. In the competition among species and between species and environment, only the ones with more competitive edges and stronger adaptability can survive and develop. Darwin's arguments laid a foundation for the evolution theory. It must be pointed out that the natural selection in organic evolution is different from human's conscious selection which is usually based on self-interests. The "natural selection" is usually based on the nature of the organism, affecting the organism both specifically and generally. Human selection can only affect the tangible parts of things while the "natural selection" is based on the internal mechanism. Since Darwin put forward the evolution theory, the idea of evolution gradually soaks into various fields, from micro to macro, from individual to organization, and the organization research is not an exception.

There're also some ideas about organization evolution in economics (Deng, 2008). Different from neoclassical economics, evolution economy focuses on the innovation and its spread of the economic system and the structure change it causes. The evolution-oriented enterprise research focuses on the generation, spreading and application of knowledge within an enterprise, comprehending enterprises' heterogeneity and complexity that cannot be explained by the traditional organization theory from the learning perspective. The idea of evolution in economics comes from Adam Smith's *the Wealth of the Nations* and the idea of Austria School. Within the theoretical framework of economics developed the enterprise

organization theories, such as enterprise resource theory, enterprise dynamic ability theory and enterprises' routine behavior theory. Within the theoretical framework of economics, heterogeneous enterprise resources are integrated within one management framework, routine is regarded as an organization technique while the dynamic ability is regarded as the expression of routines. At the same time, the possibility and path dependability of organization study are also emphasized.

The late 20th century saw a significant turn in organization theory study. Scholars began to take interest in organization change; the evolution idea was paid special attention and thus came a lot of theoretical achievements (Singh, 1990; Singh and Lumsden, 1990). Organization evolution theory investigates how an organization evolves, including its establishment, breakdown, development and change, by studying the constant changes within the organization. Drawing on the fruits of other disciplines, the organization evolution theory itself has derived many new theories, like organization ecology, strategic evolution and other theories relating to economics, sociology, organization change and social and cultural evolutions.

Based on the above analysis, we can define the organization evolution as a complicated process caused by the linkage between and the change of the external context or (and) the internal forces of the development of the organization. In the process, many factors are interconnected and interacted and progress featuring a stronger adaptability and sustainable development can be achieved by the organization in the end. The previous studies on organization evolution are inadequate, some are even contradictory (Tushman et al., 1985), which aroused attention among scholars (Aldrich and Pfeffer, 1976; Child and Kieser, 1981; Kimberly and Miles, 1980; March, 1965), they advocate that efforts should be made to study the organization evolution so as to make up the inadequacy of the static and cross-section researches which seldom concern the historical factors and the initial state of an organization, and help us to understand why some organizations can develop sustainably while others failed (Tushman et al., 1985).

2.1.2 Process of Organization Evolution

Generally, the organization evolution consists of four processes, namely, variation, selection, retention and struggle for rare resources (Aldrich and Ruef, 2006a, b, c). Variation is the beginning of the evolution, including the changes of the existing routines, competitive ability and organization forms. This process can either be a conscious plan, like exploring

solutions for a problem, or an unconscious one. Change can occur either inside the organization or among organizations. How the organization selects and eliminates different variations constitutes the second stage of organization evolution. The selection includes two varieties, one is external selection brought by the external causes which influence the organization routines and competitive ability (like markets, competitive stress and institutional stress) and the other is internal selection caused by internal causes that influence the organization routines and competitive ability (like stability stress and the perseverance to the old selection criteria). It is called maintenance that the variation chosen by the organization occurs again or remains (In this process, the variations chosen by the organization remain or even reproduce and spread). The maintenance consists of inside maintenance (like the professional and normalized role play) and inter-organizational maintenance (like the practices in cultural belief and values). The potential selection pressure and the pursuit for the change of effect are all quests for the control over rare resources and the organization legitimacy. When the members of the organization pursue their individual dream or organizational goals, struggles for resources occur. To put it into simple words, when there are processes that incur changes or maintenance, the system will have to make a choice, thereby it evolves. The four general processes that constitute the evolution theory are enough for us to explain the organization evolution process. For example, why does a certain organization form exist in a certain environment? When variation and maintenance are in one system, the system will have to make a choice, which leads to the evolution. The evolution mechanism mentioned above can be adopted either in organism or non-organism, like any ecological system or social system. Therefore, the evolution theory has been widely applied in various fields, for example, McPherson applies the evolution pattern in studying the rise and decline of many volunteer organizations, Lomi applies it in analyzing the competitive motivation among groups (Aldrich et al., 2006a). In a word, the evolution theory can be applied in different analyses of all levels, like team, organization, group and so on. The four processes of organization evolution lie in or among every social individual.

Organization evolution is a big topic and it can be studied from many perspectives. However, the logical front end should start from the birth of a new organization. Once the organization set up, the core value, strategy, structure, power and interest distribution, rare resources distribution and control system will be laid down step by step and gradually improved and perfected. The core value of an organization is the in-depth driving force, which determines where, how and why the organization exists and competes. The change in the core

value would cause the changes in all parts of the organization, like strategy, structure, power and interest distribution and control system. Correspondingly, the change in the control system may also lead to the slight changes in structure, power and strategy (Tushman et al., 1985). Organization control system is closely connected with organization structure. Control system can either be an official or unofficial department whose function is to appraise and monitor organization's behaviors, performance, reward and penalty. The core value, strategy, structure, power and interest distribution, rare resource allocation and control system are both inter-connected and independent. They together constitute the organization orientation and they must be coordinated with each other, otherwise, the performance would be poor. The changes in organizations' strategy, structure, rights and profit distribution, rare resource allocation and control system means a reorientation of the organization, while if the core value changes too, the organization has gone through a re-creation. At the early stage of the organization, the decision was made in response to the context, based on which the organization set up its initial pattern of the organization activities. Because of inertia and institutionalization, the developments of the organization are all simply a continuation of the established patterns. However, the organization is able to and surely to change its strategy orientation.

Organization evolution is a complicated process, on which scholars hold different opinions. The typical ones are: (1) ecological model which emphasizes that the organization change is a result of the natural selection; (2) adaptation model which stresses on the more effective gradual change and balanced move when organizations adapt themselves to deal with crisis and take advantage of opportunities; (3) reform model which focuses on the qualitative changes of the organization, believing that the development of the organization is made of a series of different stages and procedures; (4) the punctuated equilibrium model (Tushman et al., 1985). The punctuated equilibrium model absorbs the rational ideas of the previous three models, considering both the internal and external causes of the organization's reform and inertia in a comprehensive way. Meanwhile, it admits that the great influence the administrative and decision-making levels have on the long term behaviors of the organization. Punctuated equilibrium theory has emerged as a prominent theoretical framework for investigating organization changes (Romanelli et al., 1994).

Next part will be dedicated to the fundamental ideas and the latest developments of the punctuated equilibrium model.

2.1.3 Punctuated Equilibrium Theory

The punctuated equilibrium theory was originally a theory about biological evolution which hold the idea that the long-term static or balanced situation of a pedigree will be broken by a relatively short but volcanic and enormous evolution, leading to new species with greater adaptability (Gould and Eldredge, 1977). The punctuated equilibrium theory explains why there are so few fossils of evolving organisms in a new and systematic way, which is a development and supplement to Darwin's evolution theory.

The punctuated equilibrium theory has been paid attention and adopted in many fields ever since it was born, achievements in such disciplines like economics, politics and civil management have been made (Baumgartner et al., 2009; Boushey, 2012; Breuning and Koski, 2006; Jones, Sulkin, and Larsen, 2003; Jordan, 1999; Robinson, 2007). As for organization research, Tushman and Romanelli integrated the research findings on the organization evolution of the time, absorbed the rational ideas of the ecological model, the adaptation model and the reform model and put forward the punctuated equilibrium model (Tushman et al., 1985). They believe that the organization evolution is not linear and forward, but a no-linear and complicated process in which some relatively equilibrium stages with snaillike changes and some sporadic re-orientation stages with essential changes alternately take place. Since then, many researches based on the punctuated equilibrium theory have been conducted (Chimhundu, 2011; Gersick, 1991; Lant and Mezias, 1992; Romanelli et al., 1994; Sabherwal, Hirschheim, and Goles, 2001; Wollin, 1999). Tushman and Romanelli's model was later improved by Sastry, which is shown in Figure 2-1. The improved model comprehensively reveals how the punctuated equilibrium is realized (Sastry, 1997). It is also the main theoretical framework for the later case studies

Next, the fundamental idea of the punctuated equilibrium organization evolution theory will be reviewed from three aspects: convergent period, re-orientation period and executive leadership.

(1) Convergent period

In convergent period, the organization integrates its social, political, technical and economic activities by means of gradual change mechanism so as to make them preserve consistent in order to support the strategic orientation of the whole organization. Re-orientation period is short and also called change period, in which the structure, interests and system of the organization all change greatly and a new organization strategy shapes. The

punctuated equilibrium model of the organization evolution means that the development of the organization is made up of a series of convergent periods which are constantly broken by re-orientations and then advance into another convergent period. Figure 2-1 describes the punctuated equilibrium evolution of the organization in the case of only one time environment change.

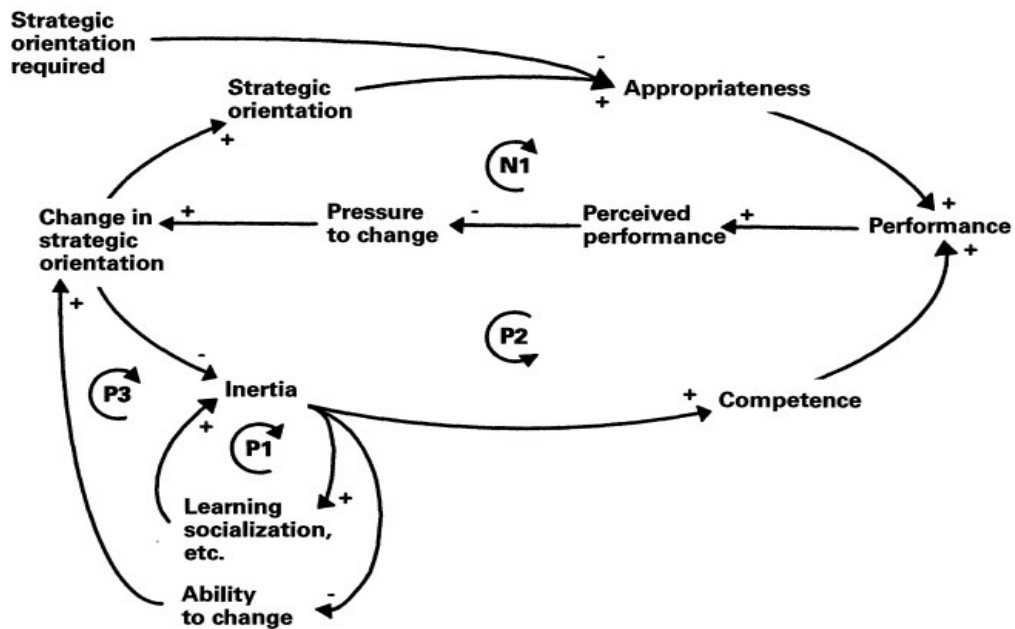


Figure 2- 1 Simplified Logical Relation within Punctuated Equilibrium Theory

Source: Sastry, M. A. (1997), Problems and paradoxes in a model of punctuated organizational change. Administrative Science Quarterly, Vol. 42, No. 2, pp. 237-275

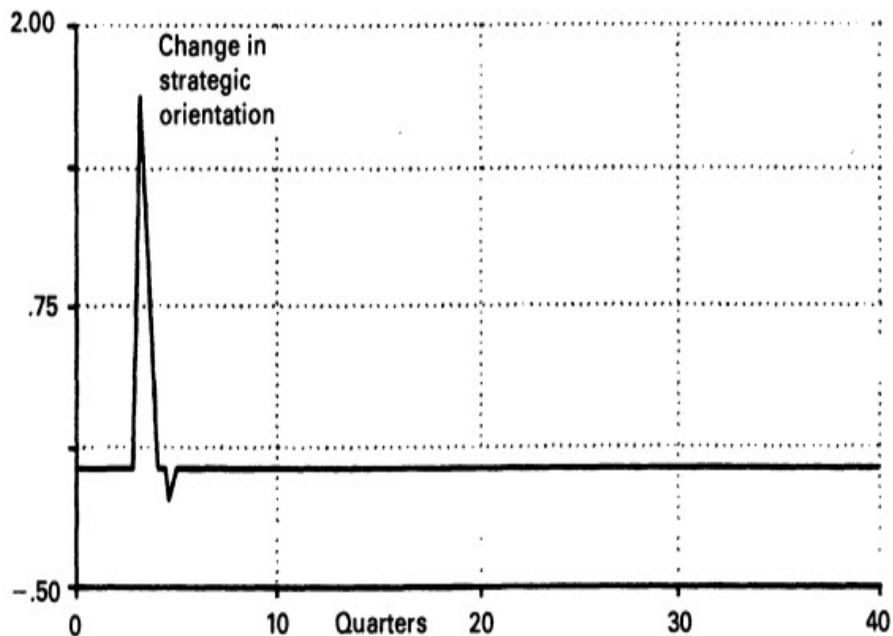


Figure 2- 2 Punctuated Equilibrium of the Organization Evolution in the Case of only One Time Environment Change

Source: Sastry, M. A. (1997), Problems and paradoxes in a model of punctuated organizational change. Administrative Science Quarterly, Vol. 42, No. 2, pp. 237-275

Initially, the organization was changing gradually, which is called convergent period. Then, the organization's strategic orientation changed greatly at a point (e.g. 3 or 4). This short period is called re-orientation (change period), when a high coordination is achieved by the re-orientation, the organization advances into another convergent period.

The inertia and system of the organization keeps it behaving in the original pattern, however, if the lack of consistency in organization strategic orientation or the changes in competition, technology, law and the social environment lead to the failure of the original orientation, the pressure for changes will come. The medium and the lower management levels can keep the organization in the convergent period in the case that the organization orientation has already been established. Under the pressure for changes, only the executives can coordinate the convergent period and the re-orientation period, initiate and finish the necessary non-linear changes for re-orientation. The perception of opportunities and constraints leads the executives to decide whether to keep the convergent period or to initiate a change. As a political, economic and social independent structure, the organization must be positive and effective, must have both internal and external rationality so as to sustain the development of the organization. The regularity, techniques, objectives, performance, inertia and the context are closely related to organization evolution. The coordination activities the organization needs, the prediction of the external context of the organization and the responsibilities the organization takes are related to the promotion of the structural clarity and social complexity of the organization (Tushman et al., 1985). The decision-making patterns of the organization and the social intercourse clarify and consolidate the organization strategy over time. The more the two patterns are interconnected and interdependent, the more the inertia will be, which will, either for individual or group, lead to a positive attitude toward the organization strategy and the future gradual change, and decrease the perceptual ability for the need of a revolution.

The development and the size of an organization are related to the improvement of the complexity of the organization to some extent. A larger organization or a longer convergent period means a more complex organization structure, a stronger inter-dependency and inertia, a stress on gradual change and against discontinuous reform. The more unstable the convergent period is, the less complex the social contact and structure of the organization is, and more contradiction inside the organization means less hinders for the reform. Therefore, while the external context remains unchanged, the longer and the more stable the convergent period is, the more positive the organization will be. An efficient organization evolution can

coordinate the external and internal activities of the organization as well as the strategic orientation and the context of the organization. In a word, an organization must adapt itself to the internal and external context, and try to keep the convergent period stable so as to achieve a good performance. However, a high convergence may become a hinder for the change of the organization.

Compared with change period in which the executives don't change the essential decisions of the organization. The executives' major task at the convergent period is to set examples and make the strategic orientation more meaningful. In the convergent period, a more positive organization usually has a more stable administrative team with complete, excellent management skills, a dependable internal promotion system and a lot of gradual changes carried out by medium and lower management levels.

(2) Reorientation period

An organization is always under the pressure from both the internal and external contexts. The product demand, technology, users and institutional environment are closely related to the evolution of the lifespan of a product, or rather, the lifespan evolution of a product results from the interaction between the product demand, technology, users and institutional environment. The consistency of the organization strategy will change along with the evolution of the lifespan of the product, result in the need for an organization change (Brown and Eisenhardt, 1995; Romanelli et al., 1994; Tushman et al., 1985). When a discontinuous change occurs in the lifespan of a product, a re-orientation will be caused and a better design, law or social issues will all influence the re-orientation of the organization.

(3) Executive leadership

Executive leadership is a key factor in the punctuated equilibrium model, which coordinates the needs for stability and change. The medium and the lower management levels are just a consolidation to the previous strategy, only the executives are able to initiate a complete change. During the convergent period, what the executives need to do is to set examples and the gradual changes are carried out by the medium and lower management levels. However, in the change period, the executives have to make decision on strategy, interests, structure and control. The environment will not cause a change. The basic mechanism that causes the strategic change is the choice made by the executives.

The executives' perception and judgment poses important impact on the decision to change, while the inertia will influence their perception of information and judgment of the

environment. The decision to executive a reform is limited by how long and how successful the previous convergent period is and the features of the management team. The longer and more successful the previous convergent period is, the firmer the management team can hold the organization and the fewer chances a change will take place. The executives usually don't want to change due to the inertia. However, when there's performance crisis and new members join the executive team, a change is likely to take place. In a well performed organization, the newly joined executive members are usually skilled in dealing with crisis. Tushman and Romanelli (1985) pointed out that organization changes usually take place when there are news members in the management team and the changes can be effectively under the governance of the top executives. At different convergent periods, new members of the executive team are of different characters. Compared with convergent periods, the change in executive members of the organization is very frequent and the new members usually account a large portion.

The motivation for the organization evolution comes from the poor performance which is caused by the mismatches of the strategy and the environment or the failure of strategic orientation caused by the change of the external political and economic environment. Though it may be efficient, the expected results usually cannot be achieved.

Lant and Mezias (1992) put forward a new theory which is corresponding to the punctuated equilibrium theory. They believe that organization evolution results from the organization's application of the two different ways of learning. The first one is the first-order learning through which the organization keeps its relations and rules stable through gradual and conservative measures. It is corresponding to the convergent period of the punctuated equilibrium theory. The second one is the second-order learning through which the organization seeks and explores different rules, technologies and objectives in order to improve the efficiency. It is corresponding to the change period (Lant et al., 1992). They also use computers to simulate the operation of an organization so as to study the relation between organization evolution and rules, size, potential, performance and uncertainty of the organization. Like Tushman and Romanelli, they stress on the key role played by the executive leadership in organization evolution and the idea that a good performance can only be achieved when the strategy orientation and the context the organization is in are well coordinated. Organization inertia is a double-edged sword. When the organization orientation is well matched with the environment, it doesn't have to change its strategic orientation. The accumulation and enhancement of the inertia can facilitate the improvement of the

organization's ability. On the contrary, if the orientation goes against the environment, the organization will have to re-orientate. The inertia will reduce the organization's capacity for change and bring more difficulties. In other words, the organization re-orientation is triggered by the change of environment. Therefore whether the organization is able to sense the change in environment and decide when to change becomes critical.

Gerisick (1991) holds the idea that the punctuated equilibrium model consists of three essential parts, namely, the convergent period, the change period and the deep structure. The deep structure means the basic way of the systematic organization and the basic pattern of the systematic activities. Though the system changes gradually, the deep structure is generally stable. In the convergent period, the deep structure remains unchanged and a strong inertia comes into being in order to prevent the system from changing or put the digress of the system back on its track. Inertia and lack of motivation are the two important factors to maintain the convergent period (Gersick, 1991). In the change period, the existing deep structures are destroyed, and the members of the system, as Levinson describes, get upset, unsettled and afraid of failure. They may soon return to the previous deep structure if a new deep structure has not been established (Levinson, 1978). Gerisick mentions two key triggers of the change; one is the new members at critical periods. An inappropriate deep structure is bound to cause a change in the system itself, which means new members are more likely to join the system. Compared with the veteran employees, the new comers are more capable to realize the nature of the system and they may solve the problems in a new way, which may destroy the existing deep structure and establish a new one. The other is the temporary milestone period. In Levinson and Gersick's model, one situation is mentioned, that is, the members of the system are aware of when they should stop the inertia and start a change. System change means destroy of the previous deep structure. The system loses its organization for a short time and soon establishes another deep structure. When the previous and the current deep structures are merging with each other, a new deep structure is to be derived. Of course, the development of the system will be influenced by the external context, including the newly joined members, the external influence the employees get and the suggestions from the outside.

Based on Tushman and Romanelli's punctuated equilibrium model, the Sastry (1997) constructed a computer model to simulate the punctuated equilibrium process. Figure 2-1 (on page 16) clearly shows the change of the strategic orientation of the organization, the impediment caused by inertia and the impact on the change brought by the capacity of the

organization. Performance can indicate whether the strategic orientation of the organization suits the environment. A poor performance forces the organization to change its strategic orientation. Only a reorientation which makes it suit the environment can help to avoid a poor performance or even a failure. Sastry (1997) added two new ideas to the punctuated equilibrium model. One is to stress on the adaptation to the environment. He thinks that the strategic re-orientation is appropriate if and only if the orientation does not suit the environment. The other is the trial period. Under an unstable circumstance, a trial period can be adopted by the governor so as to protect its strength from being destroyed. However, the trial period cannot guarantee a successful change.

There are many studies relating to the punctuated equilibrium theory. For example, a study on how the organization deals with a new regulation on water pollution reveals that the manager slows down the impact from the new regulation on the organization by means of technology and employees, which in fact gives rise to continuous changes in some organizations. In this way, a better result of environmental protection and more efficient production are achieved; one or two enterprises even get new products or productive strategy. The author points out that this phenomenon reveals that the punctuated equilibrium model and the organization system are related: the organization may remain unchanged to deal with the external change, which will influence the deep structure of the organization and finally change the organization's behaviors and forms gradually (King, 2000). Based on three case studies, Saberwal and his partners point out that the evolution of the information system is consistent with the strategy and structure of the organization. This completely proves the explanatory power of the punctuated equilibrium theory (Sabherwal et al., 2001). A study on the medical system reform in Israel shows that the punctuated equilibrium and path dependence coexist in the case. The author believes that the causes of the punctuated equilibrium, including the disintegration of the mechanism, ideological leaders and policy makers all rely on some situational factors (Feder-Bubis and Chinitz, 2010). Some researchers applied the punctuated equilibrium theory in studying the development trend of the brands that retail channels and manufacturer have. They discovered that the brands owned by the channels meet the gradualists' prediction only when it comes to the annual increase. In fact, the trend is not always a gradual one and the more common one is that occasional interruptions are scattered in the gradual growth periods (Chimhundu, 2011). A punctuated equilibrium theory based study on American policy innovation spread shows that there are three mechanisms under the framework of punctuated equilibrium theory that can lead to the

spread of innovation: slow spread (driven by the policy simulation of the organization development), fast spread among states (driven by policy copy) and immediate spread (driven by the response of the state to the external impact) (Boushey, 2012).

It is worth mentioning that organization evolution and its punctuated equilibrium are very common in China's enterprises (Krug et al., 2008). Along with the advancement of the reform, enterprises are faced with changing political, economic and technical environments and their evolutions are more likely to be a punctuated equilibrium process (Li, 2005; Rui, Ren, and Li, 2005). But there are only a few relevant researches. No paper on punctuated equilibrium theory can be retrieved on the website www.cnki.net (the largest academic resource website in China).

2.1.4 Evaluation of Researches on Organization Evolution

The theories on organization evolution provide us with a weapon to realize the internal mechanism of organization development, and the punctuated equilibrium theory helps people to better understand the organization evolution. However, we can see that although the punctuated equilibrium theory has been applied in many fields and a large number of literatures can be found, most researches are based on the developed market economies of the west. Little attention has been paid to the organization evolution under the circumstance of transition economy. Chinese Third-front enterprises have their own specific history background, economic foundations, investors, and focused industries which are significantly different from western enterprises (Wang et al., 2011). Any more, the culture environment which is critical for organizational development (Shane, 1992) is really different between China and western countries. The research on Chinese Third-front enterprises can help to change the situation.

2.1.5 Brief Summary

The above discussed organizational evolution and punctuated equilibrium theories provide the theory basis for the current research. The evolution theory shows the general organizational evolution process, while the punctuated equilibrium theory offer key concepts like strategic orientation, change pressure, organization inertia etc. for the current research. Theory give direction for case study process including the data collection and data analyses (Yin, 2009).

2.2 Third-front Construction

2.2.1 Third-front Construction and Third-front Enterprises

As shown in section 1.1, the third front construction was originated in the 1960s when the central government believed that another massive world war would break out sooner or later due to the global political and military situation at that time, in order to get ready for the coming war, strategic preparation should be made. Therefore, the majority of the national production and resources was placed in war readiness. For security reasons, a decision was made in accordance with Chairman Mao's strategic deployment to delimitate three regions in terms of geographic location and vulnerability to wars, of which the third was located in the inland as well as the west that are remote and less vulnerable to wars. As is shown in Figure 1-1, the third front includes three provinces in southwest (Yunnan, Guizhou, Sichuan) and Chongqing which is now a municipality directly under the central authority, three provinces in northwest (Shanxi, Qinghai and Gansu) and the western areas of Hebei, Henan, Hubei and Hunan provinces. These regions are called "the Great Third-front" in general. The Third-front enterprises are the military institutes and factories that are located in the Third-front regions while the Third-front is under construction. For example, the Number Two Motor Factory of China, which was later reconstructed and named Dongfeng Motor Corporation and Chongqing Weapon Industrial Base.

2.2.2 Studies on Third-front Construction

There are lots of achievements in the Third-front research in China, including collection of literatures, papers and thesis (Li, 2011). The relevant papers that can be retrieved in CNKI (the largest online academic resources in China) can be categorized into two types (as shown in Figure 2-1): one is the study on the history and decisions of the Third-front construction, and the other is the study on the relevance and evaluation of the Third-front construction. Of course, they are not irrelevant; most studies concern both the history and evaluation of the Third-front construction. Therefore, the categorization is merely content based and does not mean a paper can only deal with one aspect.

(1) Historical course and decisions

These studies usually focus on the decision making process, development stages and features from a historical perspective or from a national perspective or from a local

perspective (a specific province or a city). For example:

Sheng Guanli (2009) analyzes, in his thesis, the historical background and the decision making process of the Third-front construction. Based on the roles the Third-front construction played in China's economic construction, he divides the Third-front construction into 5 historical stages: the initial stage (1964-1966), the stagnation stage (1967-1969), recovery and booming stage (1970-1971), the continuing and finishing stage (1972-1979) and the adjusting and restructuring stage (1982 – the 1990s). He further summarizes the distinctive historical features of the Third-front construction: for the sake of national security, following the balanced development strategy, typical resource-orientated strategy, typical urban-rural separated economy. He also reveals the positive historical significance and the unreasonable parts as well as the limits of the Third-front construction.

From the historical evolution of the Third-front construction policy we can see that the evolution of Chinese Communist Party's regional development theory influences the third construction policy and historical process (Zhong, 2011) (仲海涛, 2011). Zhong Haitao (2011) points out that the social, historical, political and economic conditions at home and abroad varies at different periods. So do the ideas on China's regional development. The Third-front construction largely represents Chinese Communist Party's ideas on regional development.

Table 2- 1 Research on the Third-front Construction in China

Research contents		Representative Achievements
History and decision making	General research	(Chen, 1997, 2001a, b; Li, 2011; Shen, 2008, 2009) etc.
	Specific research concerning one province or city	Yunan Province (Chao, 2006, 2007a, b, 2009), Shanxi Province (Liu, 2011; Ma, 2003; Zhang, 2011), Guizhou Province (Xu and Tian, 2011; Zhang, 2004), Sichuan Province (Wang, 1986; Xu, 2012), Hunan Province (Yan, 2007; Zhou, 2011) etc.
Significance & Evaluation		(Li, 1999; Li, 2006; Li, 2011; Li and Chen, 2003; Ren and Chen, 2006; Zhu, 2007) etc.

Liu Cunlong (2011), in his thesis, reviews the historical process of the third construction in Shanxi province by dividing it into four stages: initial stage, complicate development stage, steady advancing stage and finishing stage. He also points out that the Third-front construction promotes the development of the national defense-related industries, energy industries and transportation industries at the cost of neglecting cultural and intellectual construction, which laid a foundation for future social and economic development. He believes that the third construction has provided Xi'an with some useful experience and enlightenment for its current development.

Wang Yuan and Liu Dongming (2011) compare American western wartime mobilization with China's Third-front construction and find huge differences in foundations, investment subjects and industry focus. They argue that the lost force for developing the poor region is from the government, and whether the external driving force (for the enterprises) can last is the key factor in determining whether the concerning industries and enterprises can achieve sustainable development.

Li Caihua (2002) investigates the adjustment and restructure of the Third-front construction from background, contents, basic features and significance. Li points out that the troubles the Third-front construction gets and the changing domestic and international situations force it to adjust and restructure, which involves industry layout, product mix and the economic as well as technological cooperation between the third and the first fronts. The adjustment is characterized by that it mainly focuses on industry layout, the enterprises have to find ways out by themselves while at the same time the governments give due supports, the military enterprises play key roles and different stages are of different features. The adjustment and restructure drives the troubled enterprises back on a new road of development, facilitating the local economic development, motivating the stuffs and speeding up the economic development of the middle and west region.

A few researches involve the management of enterprises, such as how the Third-front enterprises construct the modern enterprise system (Wu and Chen, 1999), etc.

(2) Relevance and evaluation

From the previous studies we can find that the significance and the evaluation of the Third-front construction consist of two aspects: one is the evaluation of strategic decision, namely, whether the decision is right or wrong and whether it is well-grounded. The other is the evaluation of the results, that is, whether the benefits outweigh the disadvantages or vice versa.

As for the evaluation of the strategic decision, it can also be categorized into two parts: one regards it as a right decision with enough reasons. The third front construction is a strategic need, whose purpose is to prepare for the possible invasion (Zhang, 2004). It can also help to improve the industrial layout of China, which is good for the balanced and sustainable development of China's economy as well as the local economic development (Ma, 1997; Mao, 1999; Sun, 1995). The decision to construct the Third-front is made based on the experience drawn by Mao Zedong and other leaders of the central government from the

history of the Second World War and the Soviet Union, which is a right decision to safeguard the national security and to guarantee to win the possible war (Ren et al., 2006). Industrial investment is more effective than agricultural investment in booming the national economy; therefore, striving to develop industry is a right choice if the resources are not abundant (Chen, 1997). Some scholars summarize the factors that influence the decision on Third-front construction as follows: the idea of national defense first under the circumstance of cold war and the inadequate national defense, the idea of keeping base areas and the strategy of positive defense formed in the course of Chinese revolution, lack of experience in economic construction and leftism, highly centralized political and economic system and using balanced production layout to promote economic development (Huang, 2002). Still there are some scholars think that Mao Zedong made such decision to prevent the capitalism from restoration (Dong, 2001). The other takes it as a wrong decision. They think that the allocation of lots of resource to the remote and poor areas makes it less efficient in resource use. Besides, the industry-focused third front construction further sharpened the contradiction of the economic structure in the West (Xu, 1999; Zhou, 2000a, b).

As for the evaluation of the results of the Third-front construction, there are three kinds of ideas: one is positive. It argues that the Third-front construction accelerates China's national defense construction, pushing forward the process of constructing a strong national defense and facilitating the development of the middle and western provinces and cities in society, science and technology, economy and culture. Besides, Chinese people's virtue of working hard and perseveringly, selfless contribution and patriotism were fostered and enhanced (Ma, 1997; Mao, 1999; Song, 1996, 2004; Sun, 1995). One is negative. It argues that the Third-front construction is a presentation of the "leftism" and it causes huge waste and losses due to the high cost and the low resource efficiency. The excessive stress on war preparedness means neglecting the long-term economic development, and will result in the poor economic performance in the long run (Li, 2011; Sun, 1995; Xu, 1999; Zhou, 2000a, b). The third one argues that we should see and evaluate the Third-front construction dialectically (Chen, 2001b; Li, 2003; Li, 2011; Ren et al., 2006). On one hand, we should realize the achievements and significance of the Third-front construction. E.g. it helps to build a strong rear, which guarantees the construction of a strong national defense and provides a powerful support for the possible war against invasions. It facilitates the balanced development between the west and the east of China to some extent. It promotes the social and cultural development of the Third-front areas. On the other hand, we should not neglect the mistakes and shortages,

e.g. too many areas involved, lasting too long, unscientific layout, poor administration, low socialization, unreasonable planning, ignoring the coordination among different regions and different industries, low sustainability.

Very few scholars outside China are specialized in China's third front construction. Taking it as a special case, Naught (1988) comprehensively investigates the origin and the range of the third front construction and studies its historical stages, national status, management features, influence, adjustments and reforms. He also briefly evaluates China's Third-front construction, believing that the studies on the third front construction can help us to know the past and explain the difficult economic decisions we meet at present. In addition, some studies on China's development after foundation involves the Third-front construction. They hold the idea that the Third-front construction represents the central government's regional policy and idea, particularly Mao Zedong's idea that human resources are more important than technology, intelligence and efficiency. Though certain achievements have been made in balancing the regional development at the cost of enormous investment and efficiency, the coastal areas are still the heart of China's industry up to now. Therefore, Chinese economy actually has paid heavy price for the Third-front construction (Fan, 1995). Some scholars point out that the huge investment brings little rewards, the unprofitable investment is the very reason for China's unbalanced regional development (Wei, 1999).

2.2.3 Evaluation of Third-front Construction Researches

Most studies on the Third-front construction in China are from a historical perspective, reviewing, summarizing and evaluating its decision making process, executive process, results and influence or discussing its impacts on the economic and social development of the provinces or cities concerned. Of course, these studies can provide us with valuable experience, which are good references for decision making and policy making in the future. However, these studies are far from flawless since they all neglect the individuality of the Third-front enterprises, including their culture, history, leadership, etc., and simply regard the enterprises and their organizations as a black box, not taking a further step to investigate the evolution mechanism of the organization. Therefore, they are of limited significance in guiding individual organizations. Explanation of how the Third-front enterprises evolve is not sufficient, either.

Why there're so few researches on China's Third-front construction outside China? One possible reason is that those scholars are not familiar with China, especially the causes and

effects of some historical issues (Van de Ven et al., 2011). What's more, China didn't open to the outside world until the 1970s when the outside world began to know China's development (Naughton, 1988).

From above we can conclude that most studies on the Third-front construction, abroad or at home, are macroscopic, usually studying the decision making process, executive process, significance and effects of the Third-front construction from a historical perspective and seldom studies take a further step to investigate the development pattern and the internal mechanism of the Third-front enterprises. This is also the key reason why the research questions of this thesis are proposed.

2.2.4 Brief Summary

The above review of Third-front construction and relevant researches provide research basis and research relevance for the current research. First, the relevant researches provide rich information about the history background and the changes of macro environment of Chinese Third-front enterprises. Second, the review shows the necessity of the current research. Instead of following the common perspective to summary the history of Third-front construction, the current research examines the organization evolution process by examining the internal factors and their interactions, the interactions between internal factors and external environment. So, the current research has its own contributions while as beneficial supplement of existing researches.

Chapter 3: Research Method

The purpose of this study is to explore the answers for these research questions mentioned above, based on the punctuated equilibrium theory (Romanelli et al., 1994; Sastry, 1997; Tushman et al., 1985), applying case study method (Eisenhardt, 1989; Yin, 2009). The great advantage of Case study is that it allows us to collect data through all possible approaches such as interviews, internal documents, network, questionnaires, journals and other mass medium, especially to get some information which cannot be gotten from public ways or by large scale questionnaire surveys. Case study is helpful to examining the evolutionary process as detailed as possible, so as to get deep insight of the essence of management phenomenon. In this chapter, the choice of the case, data collecting process and data analyzing approaches and process will be expounded one by one.

3.1 The Case

To select a good case is the most important thing for case study. Case selection does not take the random sampling principal which is usually used in quantitative empirical researches, but follows theoretical sampling method (Conye, 1997) to choose some specific cases according to special requirements. Extreme cases are considered to be suitable for case study because this kind of cases highlight the influences from some specific factors, thus are more conducive to understanding the theoretic essence behind phenomenon, can help people to understand the nature of things more clearly (Eisenhardt, 1989). In order to explore some theoretic questions and give some policy suggestions as well as some practice suggestions for enterprises, the chosen enterprise should be most representative and most successful.

In order to find a good case, careful comparing was conducted among many Third-front enterprises with considering many criteria such as financial performance, key project they have taken and the convenience of obtaining data and conducting interviews. After careful examination, Aosheng¹ group was chosen as the best one. From the brief history of Aosheng group described below, we can see that this case is an extreme case which satisfies the

¹ For confidential commitment, the names of units, places and persons are replaced by virtual names, confidential data are also camouflaged with keeping their logics and meanings.

standards of being most representative and successful.

History of Aosheng

Aosheng group, a Chinese state-owned military enterprise located in Sichuan province and founded in 1950s, is one of the one hundred key projects of The First Five-year Plan of China. Sichuan province is an important Third-front area. Aosheng was set up as one key project of Third-front construction of Sichuan. So, Aosheng is one typical Third-front enterprise.

Also, Aosheng is one of the most successful Third-front enterprises. After more than fifty years' development, Aosheng has already become a large group enterprise which business scope covers various industries including research and development, manufacture, sale and services of both military and civilian products. Aosheng has several key military qualifications and the ability to develop and research military electronic products, it has undertaken several key projects from the Chinese national plans named 863² and 973³. Some technological and research achievements have filled the tech-gap in China. Aosheng has been awarded by the Central People's Government of PRC, the State Council of PRC, the Central Military Commission of PRC and all levels of authorities. Aosheng has tried to extend to several military fields based on its original technological basis and built strong competitive advantages by mastering the core technology of relevant fields. Pushed by the leaders of Chinese People's Liberation Army (PLA), *Aosheng Spirit* has been popularized in PLA. Meanwhile, Aosheng has gotten remarkable achievements through several decades' development. A number of civilian products have held the greatest market share in domestic market in recent years. The brand of Aosheng has been the most influential one in domestic market, the most satisfactory one for industry users and one of the top China Brand. From the start of the 21th century, Aosheng began to develop overseas market. In the first decade this century, significant achievements have been achieved. Its export was near \$ 400 million in 2006 and more than \$ 800 million in 2011. The output value has been growing continuously with rapid speed, expanding from less than RMB 500 million each year in the last decade of 20th century to nearly 10 billion in 2010. Aosheng has become one of 500 national key enterprises and one of the 1000 largest group corporations in China.

Reviewing the development history of Aosheng, it is obviously found that there are

² A Chinese national plan with the purpose to develop high technology was named 863 because it was approved in March 1986.

³ A Chinese national program with the purpose to resolve some key scientific problems is demanded by the national development strategy.

distinct characteristics represented by different strategic orientations, different organizational structure in four stages as shown in Table 3-1. Take one as an example:

At the first development stage, faced increasing military demand, the most important thing is to organize production to fulfill military orders. Facing little competition pressure, the good performance brought Aosheng great inertia which strengthened the organizational activity patterns and ensured the efficient military production and, to some extent, kept the competitive advantage. At this stage, the expansion of the scale and the improvement of the efficiency had been the most important tasks for Aosheng, and military products orientation had been Aosheng's strategic feature. However, the changes of international political situation and corresponding changes of Chinese policies in 1970s made Aosheng stand at the first crossroad of its development. Its original development model faced the biggest challenge which it had not experienced before. The financial performance decreased severely caused by the drop of military demands and the risk to select a new direction such as to develop civilian products which they were unfamiliar with was also very great. How to survive became a great challenge for Aosheng faced the serious situations. Finally, the top management team determined to break the original development model and tried their best to mobilize all organizational members to change their ideas to survive depending on civilian products. Along with the growing of the market share in civilian products market, the strategic orientation was being changed gradually from military production orientation to civilian production orientation. Even in a period of time, to work for civilian departments became employees' first choices, almost no staff would like to work for military departments. The organizational evolution from the first stage to the second stage was implemented successfully, and Aosheng stepped into a new development stage which was fundamentally different from the first stage (according to interview data). Accordingly, the organizational structure of Aosheng had been changed from the original inverted T pattern which has the characteristics of line structure focusing on high efficiency and good effect to the M pattern which has relatively more flexibility (read section 5.2 for more details).

Preliminary study shows that the case of Aosheng satisfies the standard of theoretic sampling (Coyne, 1997; Eisenhardt, 1989) and is a good case for the current study. The development history of Aosheng shows that the punctuated equilibrium theory (Tushman & Romanelli, 1985; Sastry, 1997) is suitable for this case study.

Table 3- 1 Brief History of Aosheng

Stage	Period	Main features
1	1950s-1970s	Single military production mode and planned economy ensured the production tasks with high efficiency. Strong competitive advantage and great danger (bursting out as environment changed) for future development existed together. Military production orientation is a key feature.
2	1970s-1990s	Policies and institutional environment changed a lot. Military orders sharply decreased at the end of the first stage, Aosheng was facing great survival crisis. Substantial change was needed urgently to change the established model for survival. Through a hard conversion, Aosheng had entered another new development stage. Civilian production orientation was the key feature of strategy at this stage.
3	1990s-2000s	Although the continuing success of civilian products had supported the development of Aosheng, the competition was fierce and the profit was very low. Meanwhile, military demands were rising a little with relatively higher profits. Most enterprises paid no attention to the little change of military market. Aosheng insisted on its "two legs" strategy which made Aosheng enter another new development stage.
4	2000s-	Aosheng made a strategy system in which military business and civilian business can support each other. This new development model made Aosheng enter the fast lane of Military-Civilian-Integration and brought another qualitative leap.

Resource: interview data and collected documents.

3.2 Data Collection

Data collection is one of key steps of case study which should be with high reliability and validity (Yin, 2009). In the process of data collection, all possible approaches will be used to assure the construct validity (Yin, 2009), such as:

Interview: through semi-structured interview, to get data about the process of organizational evolution and relevant details from the management team of Aosheng, including some retired leaders. If possible, all interviews will be recorded and transformed into texts.

Network: through the Internet, to get information including web pages, pictures and videos about the organizational evolution of Aosheng from the Aosheng's web site and other web sites. All of this kind of data will be collected and transformed into text documents.

Journals: through all kinds of online data base, all academic papers and news reports will be collected and transformed into text documents.

Internal documents: all kinds of internal materials about organizational evolution of Aosheng will be collected, including formal documents, propaganda materials.

Internal data: if possible, try to ask Aosheng to provide relevant data, including but not limited to financial data.

Questionnaire: based on preliminary analysis, questionnaire survey may be used to get some necessary information which may not be gotten from documents, like some feeling or attitude constructs.

Before data collection, the purpose and the significance of this study were shared with the top management team members of Aosheng. The process of the study and the needed cooperation were discussed. Confidential commitment and the promise of free use of the final study report were also signed. The process of data collection of case study is not one-time activity, but a many-time process repeated through the whole research process (Yin, 2009) shown in Figure 1- 2. The data collection includes three steps:

1. First Step

The semi-structured interviews were conducted firstly. Five top or middle managers (see R1 to R5 in Table 3- 2) who were interviewed following the interview outline (Table 3- 3) which was prepared according to theoretic framework of punctuated equilibrium theory (e.g.

Gersick, 1991; Romanelli et al., 1994; Sastry, 1997). The five managers with the average working age of more than 16 years are very familiar with the evolution history of Aosheng.

These interviews aimed to understand the whole development history of Aosheng. In the process of each interview, the interviewee was instructed to talk about the development history of Aosheng including the stages, the period of each stage, the key events happened at each stage, the external environmental change and its influence, internal environmental change and its influence. Interviewers also called upon the interviewees to discuss more about those events connected with Aosheng's evolution tightly. The average time of interviews is about two hours with the least one of about 90 minutes. After promising confidentiality, declaring that all data were used in academic research, and getting the permission, all interviews were recorded and transformed into text documents in time. The text materials were numbered as Table 3- 2, and the given numbers were used to indicate the resource of referenced text. In the transformational process, any questionable data or words were confirmed by relevant interviewees.

In order to catch and understand the information as much as possible, at least three (sometimes four) interviewers including the author took part in each interview. The rest of the interviewers are all scholars who are interested in organizational research. One interviewer was responsible for asking questions according to the interview outlines, one was responsible for recording and taking notes, another one or two interviewers were responsible for asking questions to remind the interviewees to talk about some important details like some key time point and sales data according to what the interviewees talked about.

Meanwhile, materials from the wet site of Aosheng and history documents and propagandist manuals from relevant department were collected. These materials were also transformed into word documents.

After understanding the major evolution stages by reading the documents from the interviews and collected materials, what data were needed and where to find them were decided. Then, went to the next stage.

Table 3- 2 Interviewees List

Interviewees	Positions
R1	The vice president of Aosheng Group (organizing and culture)
R2	The vice president of Aosheng Group
R3	The leader of the Science and Technology Department of Aosheng Group
R4	The deputy Party Secretary of Aosheng Group
R5	The leader of the Technology Center of Aosheng Group

R6	Former president of Aosheng
R7	Former president of Aosheng
R8	Former Part Secretary

Table 3- 3 Interview Outline

Wanted information	Examples of questions
Personal information	Could you please introduce something about your work such as your job, your responsibilities, and your working age?
Organizational evolution	What is the development process of Aosheng from its founding? What key event happened in this history?
External environment	Which external environmental factors play important roles in the process of Aosheng's evolution? What relationships are there among them?
Internal environment	Which internal factors influenced the evolution of Aosheng? What kind of connections are among them?
Top managers	What is the role that top managers played in the evolution of Aosheng? Please give some examples!

2. Second Step

Complementary interviews were conducted at this stage. The interviewees included two former presidents of Aosheng and one former CCP secretary (see R6 to R8 in Table 3- 2). These three were interviewed following the interview outlines as mentioned above. In the process of complementary interviews, much attention had been given to the omissive information and some contradictory information found in collected data. The interview were conducted like those mentioned above and all records were transformed into word documents.

Data were also collected from the Internet and online database. From CNKI (www.cnki.net) database, 192 relevant papers or reports were downloaded after reading the abstracts of them, searching with key words of Third-front Construction or Aosheng Group. About 50 documents were also downloaded from Google Scholar, Baidu search, and other online databases such as ABI and EBSCO, searching with various combinations of the key words of Conversion, Disarmament, Military, Defense and China. Some materials were collected from books. Some internal data including some financial data were collected from Aosheng at this stage.

3. Third Step

All data such as academic papers, data from the Internet, internal data, and interview documents were used to conduct triangulation to guarantee the data reliability which is very

import for the reliability and validity of the research (Gurtov, 1993; Miles and Huberman, 1984; Yin, 2009). The contradictions which were found in the process of triangulation were resolved by communicating with relevant senior managers of Aosheng Group. According to the development of research, questionnaire survey may be used to collect data which cannot be collected directly.

3.3 Analysis Approach and Process

The purpose of case study is to interpret or explain why one decision or a series of decisions have been made, how to implement these decisions, and what results they may bring (Schramm, 1971). The purpose of data analysis of case study is to extract some specific themes, constructs and patterns from large amounts of data, and the analysis process is similar to factor analysis (Lee, 1999; Silverman, 2004; Xi et al., 2001). The approaches and steps are of critical importance for the validity and reliability of results.

Different from those quantitative methods, the data analyses of case study cannot follow some given programs or rules. Yin (1989) proposed three analysis skills which can be used for reference:

- (1) Pattern matching: comparing one pattern which has empirical basis with one or several hypothesized patterns. If there is any inconsistency, the initial hypothesis should be suspected.
- (2) Interpretation construction: to construct one reasonable interpretation through detailing the reasons for the research phenomenon. The most typical method is that the researcher proposes some basic theoretic interpretation about some processes and results, then compares with one single case and adjusts the theoretic interpretation accordingly, then compares with another single case and adjusts again. Repeat the process above until the satisfactory theoretic interpretation is constructed. For example, in order to interpret the failure of one new communication technology, the initial interpretation may be that the reason is the lack of management skills. However, from the TV industry the researcher may find that the lack of management skills is only one reason and another important reason is that they do not understand the market enough. The researcher may research the direct broadcast satellite to examine whether there is a need to adjust the interpretation. Repeat again and again, finally the satisfactory interpretation may be found.

- (3) Time series analysis: comparing a series of views with some hypothesized theoretic trends or other similar trends to test and adjust the hypotheses. For example, for youth violence happened in some cities, researchers may propose some hypotheses about the youth's behaviors contacting with the mass media as well as the media content, and use some single cases to test and adjust those hypotheses.

Referencing to the above ideas, the data analyses are primarily based on the constructs and ideas of punctuated equilibrium theory. The purpose of this study is to explore and understand the evolutionary rules of Third-front enterprises. The exact steps are below:

First, all collected materials were read carefully and divided into two groups. One group is about macro environment, including macro political environment, macro-economic environment and macro market environment; the other group is about the evolutionary process of Aosheng, including its evolution history, the changes of strategic orientation and organizational performance, etc.

The second step was a concrete analysis of the macro environment of the evolution of Aosheng Group organization. The changes of political environment including the historical process of military and civilian integration at the national level and the provincial political environment changes where Aosheng Group is located in were analyzed, as well as the change of the macroeconomic environment of Aosheng Group and the market changes of both military and civilian products.

The third step was to analyze the process of organizational evolution of Aosheng Group. Through group discussions and discussing with relevant executives to identify the various stages of the evolution of Aosheng Group, and a brief description was given to each stage. On this basis, the construct and its dimensions including the organizational structure, organizational performance, strategic positioning, and pressure for change, organizational inertia as well as their changes were analyzed.

The fourth step was to identify the change patterns emerged from the evaluated data through a comparative analysis of the results. The patterns were elaborated connecting with the study case. The appropriate propositions were proposed. These propositions are concentrated expression of the study findings that at the same time can be used as future empirical research propositions.

In the analysis process, the qualitative analysis was used as the main method, while quantitative evaluation was used as an auxiliary evaluation method (Romanelli et al., 1994).

By doing so, more reliable findings can be guaranteed and the defects of qualitative analysis that is the lack of objective standards and of quantitative analysis that the data is not sufficiently accurate and comprehensive and there may be some missing data could be overcome. Another reason for this choice is that the present study is a longitudinal study and the main data are a large number of text materials.

Table 3- 4 Examples of Coding

Construct	Meaning	Example
♦ Environment	• Macro political environment	➤ From 1980s, the policy of disarmament and civilian conversion were implemented.
	• Macro-economic environment	➤ In 1980s and 1990s, the macro economy grew sustainably.
	• Military market	➤ At the first stage, the central government afforded the cost of R&D and production of military market and bought all the products. At the second stage, the central government did not and cannot provide these.
	• Civilian market	➤ We were facing fierce competition in civilian market.
♦ Strategic orientation	• The target market and main products	➤ At the first stage, all products are military products without any civilian products.
♦ Organizational structure	• The characteristics and changes of formal structure	➤ The Science and Tech. Department is responsible for the R&D of military products, while the Tech. Center is responsible for the R&D of civilian products.
♦ Organizational performance	• Financial performance and interest satisfaction	➤ As the developing of civilian products, the employees' income became higher and higher.
♦ Change pressure	• The necessity of change	➤ We faced two roads: bankrupt or change?
♦ Organizational inertia	• How organizational activities depend on traditions or routines	➤ Most of employees were used to the previous routines and unfamiliar with market competition.

The relevant data were coded as shown in Table 3- 4. During the encoding process, two management doctoral students were invited to assist coding these data. They both focused on the relevant research fields about organization management and have considerable extensive experience about organizational change case studies. First, the author and two assistant researchers complete the coding process independently, then the differences existed in the coding results were discussed to reach the final unanimous coding decisions. The final results

were discussed within a research group to test their reliability and validity.

The five-level-classification method will be used to evaluate these constructs and their dimensions, using "high, second-high, middle, low-medium, and low" to represent five different levels (Creswell, 2008). In the statistical analysis, the number (5-1) of "+" will be used to represent these five different levels from high to low. All evaluations were conducted by five mentor team members (including the author) and five Aosheng Group's managers. The evaluation processes were strictly complied with the process of "evaluation - results comparison-discussion". Specifically, the evaluations were accomplished independently by each participant. Then the results collected by the author were compared. For those inconsistent results of the evaluations, a special seminar was organized to discuss them, and the consistent evaluations were ultimately achieved. In order to compensate for the defects of no objective standards of qualitative analysis, the objective indicators were used to ensure the reliability of the results and internal validity when have data support. All results were discussed with top or middle managers of Aosheng Group to assure the reliability. Another point that the evaluations of environment and internal factors are from different appraisers is worth mentioning. Appraisers come from Aosheng Group were asked to evaluate the variables described in Chapter 5, while another group of appraisers were asked to evaluate the variables about external environment. By doing so, they can avoid influence from appraisal experience so that any possible bias can be avoided.

QSR Nvivo 8 will be used for qualitative analyses (Bazeley, 2007; Richards, 1999) and Excel will be used to do statistical analyses.

3.4 Chapter Summary

In this chapter, the research method is elaborated. Case study is the best way to explore the research questions. The case of Aosheng is selected according to the standards of being most typical and most successful, considering the convenience of data collecting. Data collection includes three stages, the defects of previous work can be overcome at the following stage in order to guarantee the data quality. Four analyses steps will be followed to explore the rules and patterns emerged from the organizational evolution of Aosheng Group. Generally speaking, instructions to the whole research project are given in this chapter. The following chapters will report the research findings.

Chapter 4: Macro Environment Analysis

Organizational evolution is a complicated dynamic process, which involves not only the interactions among the various internal factors, but also the interaction between the organization and its external environment. Viewed from the relation between the organization and its external environment, organizational evolution is nested in a larger environment instead of existing in an isolated world alone. In order to better analyze and understand the organizational evolution of the Third-front enterprises and to find out its patterns, it is necessary to take the macro environment into account when analyzing the organizational evolution of the Third-front enterprises, that is, to set the subjects in the big social and economic environment so as to better understand its evolution pattern (Berthélemy et al., 1995). The aim of carrying out case studies is to acquire deep understanding of the phenomenon, which consists of some critical situational factors because they are closely related to the research (Yin, 2009). The important environment changes usually are the major sources of pressure for the revolutionary changes in organizations (Romanelli et al., 1994). Only when we fully understand the background in which the organization of Aosheng Group evolves, can we better understand its evolution patterns.

China's Third-front enterprises are all military enterprises, which play an important role in China's national defense and their development is greatly influenced by the national macro environment, such as the relevant policies of the central government. Besides, the national macro-economic situation will greatly influence the economy as a whole as well as the development of the Third-front enterprises. This chapter analyzes the macro environment in which the organization of Aosheng Group evolves, including the changes in political environment, macroeconomic environment and the closely related market changes. As for the macro political environment, this thesis mainly reviews the changes in the policies of "military-civilian integration" and roles played by the local governments. It analyzes the macroeconomic environment in which the organization of Aosheng Group evolves through investigating the national macro-economic development. It also reveals that the changes in the market are reflected by the changes in the defense market which depends on the military budget and the industry where Aosheng Group has its civilian business. Finally, it draws a conclusion on the overall environment changes at the different stages of Aosheng Group's

organizational evolution.

4.1 Macro Political Environment

China's Third-front enterprises are all military enterprises, whose development is greatly influenced by China's military-civilian integration strategy⁴. Therefore, the implementation of the military-civilian integration strategy provides the Third-front enterprises with a unique macro political environment. Studying the history of the military-civilian integration strategy will be conducive for us to understand the organizational evolution of the Third-front enterprises. Meanwhile, along with China's development, local governments are provided with more power, especially in affairs concerning economic development. They play an increasingly important role in the development of the enterprises within their administrative regions. Next, the political environment in which the organization of Aosheng Group evolves will be analyzed in the background of military-civilian integration and the specific situation of Sichuan province.

4.1.1 History of the Military-civilian integration

As for the stages of the military-civilian integration, different scholars, based on different criteria and research needs, hold different options. E.g. Li Yi (2005), in terms of the maturity of the defense-related science, technology and industry system, divides it into four stages, namely, initial stage (1950-1964), expanding stage (1964-1978), reform stage (1978-1998) and further development stage (1998-present). According to Gao Xia (2011), the implementation of the military-civilian integration strategy is closely related to China's development and any analysis without taking the history of China's development into account will lead to one-sidedness. Therefore, the process of military-civilian integration should be examined in its historical context, so as to analyze the course of its evolution more accurately and better avoid one-sidedness and arbitrariness. Considering the historical stage of China's national defense construction and the social and military environment development both at home and abroad, this thesis divides the evolution of the "military-civilian integration"

⁴ Civil-military integration: being both a strategic goal and a process, it is designed to integrate the national defense related industry that has technological advantages with the civilian technology industry so as to form a stable and flexible system, and based on common technology, process, labor, equipment and materials to exploit the resources efficiently with the help of the transformation mechanism between the two industries, thus to meet the demands of building a strong national defense and developing the national economy simultaneously. (高遐, 2011)。

system into four stages (see Table 4- 1).

Table 4- 1 Four Stages of the “Military-civilian integration” Strategy

Stages	Time	Feature
Stage I	1949-1978	Planning stage
Stage II	1978-1990	Exploring stage
Stage III	1990-2001	Developing stage
Stage IV	2001-present	Mature stage

The policies concerning China's military-civilian integration change with the rapid changing international military and political situation. When there's political and military tension, the defense-related science, technology and industry go all out to meet the military needs. While in peacetime, they adopt the “military-civilian integration” strategy so as to promote the economic development. However, the “military-civilian integration” strategy has just been adopted occasionally to promote the national economic construction. It hasn't become a common view yet.

The initial practice of “military-civilian integration” was merely a practical exploration, but perhaps the more important significance is its political and theoretical enlightenment. When People's Republic of China was founded, its major part of the industrial infrastructure was the military industry taken over from Kuomintang. While producing the military products, they also produced some civil products in order to promote the national economic development. However, when Korean War⁵ broke out, the need for military products increased dramatically. The military enterprises had no time for the civil products. The central government also strengthened its leading role in military industries, emphasizing their role as producers of military products. From January 1951 to August 1952, The Ordnance Committee of the Central Military Commission chaired by Zhou Enlai was established; it was responsible for directing and coordinating the national military production. Later, the Second Department of Machinery was established to administrate the defense-related industrial enterprises.

After the Korean War, the military enterprises suffered from overcapacity, while the national economic development was faced with great pressure and difficulties, such as weak foundation, low technical level and slow development and etc. In order to make better use of

⁵ On June 25th, 1950, the Korean War broke out. On June 27th, the United States officially entered the war and the Chinese People's Volunteers took part in the war on October 25th the same year. It is known as the "War to Resist U.S. Aggression and Aid Korea". Reference: <http://baike.baidu.com/view/67085.htm>

the production capacity of the military enterprises to promote the national economic development, the First Department of Machinery Industry was established in 1958 to marshal the national machinery industry, which was the first trial step taken toward "military-civilian integration" from the administrative perspective. Soon, the technological superiority of the military enterprises was shown in promoting the national economic development. A lot of large and critical equipment was developed and manufactured, such as the 10,000-ton hydraulic pressure rolling mill.

In the 1960s, the Vietnam War⁶, the deterioration of the Sino-Soviet relations, the Zhengbao Island War⁷ and the situation of the Taiwan Strait all contributed to the tough security situation then. In order to ensure the national defense and safeguard the national unity, Chinese government strengthened the administration system of the national defense industry as well as the relevant institutions. Another four Departments of Machinery and the National Defense Industry Office of the State Council were established, which were directed by the State Council and the Central Military Commission of the PRC and responsible for the planning and management of the defense-related science, technology and industry. Great importance was attached to the military products and the "military-civilian integration" entered a relative long period of stagnation.

Since the implementation of the reform and opening policy⁸, China's military-civilian integration achieved a record high breadth and depth. After Deng Xiaoping put forward the guiding principles of "integrating military and civilian, peacetime or wartime, giving priority to military production, supporting the military production by developing and producing civil products." Relevant measures and policies were put forward, and the implementation of the "military-civilian integration" strategy has been vigorously promoted. From 1982 to 2001, regulations and development plans concerning military-civilian integration were made one after another, e.g. *Regulations on Military Enterprises Producing Civilian Products* (1982), *Development Plan for 18 Categories of Civilian Products* (1982), *Regulations on Defense-related Industry Developing and Manufacturing Civilian Products* (1983). Meanwhile, a number of institutions were established. E.g. China State Shipbuilding

⁶ Known as the "Vietnam War", it occurred in 1959-1976. Reference: <http://baike.baidu.com/view/3767276.htm>

⁷ Known as the "Zhenbao Island Incident," it refers to the military conflict between the Soviet Union and China occurred in March 1969 in the vicinity of Zhenbao Island on the Ussuri River. Reference: <http://baike.baidu.com/view/48434.htm>

⁸ It refers to the policies of economic reform and opening to the outside world implemented in China from the late 1970s. Reference: <http://baike.baidu.com/view/48598.htm>

Corporation (1982), China National Nuclear Corporation (1988), China Weapon Industry Corporation (1990), China Aviation Industry Corporation and China Aerospace Industry Corporation (1993), the Commission of Science, Technology and Industry for National Defense (1998), the 10 large military industry groups (1999) and the 11 large military industry groups (2001). During the 19 years, the central government had repeatedly stressed the military-civilian integration (Gao, 2011). Much experience has been accumulated from these practices, while many problems have also been revealed. The military-civilian integration at this stage was obviously driven by the policies since almost every major change was accompanied by the reform of relevant government agencies as well as the introduction of new policies, which on one hand, reflects that Chinese government attached great importance to the issue of military-civilian integration, on the other hand, it reflects that “military-civilian integration” was still at the initial stage and a good system and mechanism to ensure the achievement of the given strategic goals hadn't been established.

In the 1990s, Jiang Zemin put forward the important strategic guideline of combining military needs with civilian needs, reserving military potential in civilian capability, vigorously developing coordination, and making independent innovations. In the 17th National Congress of the Communist Party of China, President Hu Jintao put forward that “China will take a new road of military-civilian integration with Chinese characteristic”. With the relaxation of the international and national situation, “peace and development” gradually became the common sense of many nations around the world. The national focus has been shifted to the economic construction, leading to the reduction in the need for military products and the overcapacity of military industries. Meanwhile, with the rapid development of the information and network technology, economic globalization has swept the globe. After entering the WTO, China's socialist market economy system was gradually improved. The most pressing task for China was to develop economy and build a modernized strong nation. The experience drawn from the history and other nations suggests that it was quite necessary to implement the “military-civilian integration” strategy. Only a better, more comprehensive and deeper implementation of the “military-civilian integration” strategy can help us to achieve the dual goals of constructing a strong national defense and promoting the economic development.

Since the 1990s when the central government established the Commission of Science, Technology and Industry for National Defense and the 10 large military industry groups to the end of 2007, there are 62 listed companies (including 7 companies listed overseas) whose big

shareholders are or actually controlled by military enterprises. 7 out of the 40 large scale state owned enterprises whose assets excess 100 billion RMB are military enterprises. The whole military industry thoroughly eliminate its awkward situation of being caught in deficits and troubles (semi-idle, overcapacity in old products and lack of capacity in hi-tech products) (Sina, 2008).

Obviously, the course of history has influenced the development of the military enterprises. Firstly, the scope that the military enterprises involve in the civilian field gradually expanded. At the initial stage, its major business was in automobile, motorcycle and TV. The probable reason for this is that these fields were controlled by the government at the initial stage of China's reform and opening and the military enterprises were more likely to get relevant permits due to their special relation with the government as well as their strong capital and technical reserves. With the further implementation of the reform and opening policy and the military-civilian integration policy, they began to do their business in a wider circle and currently their business nearly covers every aspect of people's life, such as insurance, real estate, biology, etc. Besides, some military enterprises developed in three extreme ways. Some military enterprises had difficulties in developing products for civilian use at the very beginning, therefore, they gave up civilian products and focused on military products, which hindered the their performance. Some met their Waterloo in producing products for civilian use, and what is worse; they even lost their military products and went bankrupt. Others concentrated on civilian products and gave up military products.

Aosheng Group didn't go extreme, and it finally found a way out and set an example of coordinated development of combining military needs with civilian needs for military enterprises. From the description of the fourth evolution stage of Aosheng Group in Chapter 5, it can be seen that Aosheng Group has perfectly achieved the strategic goals of coordinated development and resources sharing so far. That's why this thesis takes it as a research subject. From the analysis of the development stages of Aosheng Group in later chapters, it can be seen that the organizational evolution of the Third-front enterprises is in line with the history of the national development. Thus we can conclude that such macro political environment directly and deeply influenced the development of Aosheng Group. This will be explained in detail in section 6.1(p104).

The typical evidences for determining the stages of the military-civilian integration are as follows:

Table 4- 2 Qualitative Analysis of National Political Environment

Stages	Evidences
Stage I	<ul style="list-style-type: none"> ◆ When there's international political and military tension, go all out to meet the military needs. ◆ Military-civilian integration is nothing but a practical attempt and exploration. ◆ The Korean War broke out and the Sino-Soviet relation deteriorated, the central government strengthened its leadership in military industry and emphasized the military production capacity. ◆ The First Department of Machinery established to direct the production of the military enterprises nationally. ◆ The First Ministry of Machine-building Industry was established, taking the first step toward "military-civilian integration". ◆ In the 1960s, the Vietnam War and the deterioration of the Sino-Soviet relation led to the attachment of importance to the military products.
Stage II	<ul style="list-style-type: none"> ◆ China implemented the policy of reform and opening up, focusing on the economic development. ◆ Deng Xiaoping put forward the guiding principles of "integrating military and civilian, peacetime or wartime, giving priority to military production, supporting the military production by developing and producing civil products." ◆ The central government adjusted its supporting policy and many military enterprises were offered one-off grants. ◆ Regulations on Military Enterprises Producing Civilian Products (1982), Development Plan for 18 Categories of Civilian Products (1982), Regulations on Defense-related Industry Developing and Manufacturing Civilian Products (1983). ◆ China State Shipbuilding Corporation (1982), China National Nuclear Corporation (1988), China Weapon Industry Corporation (1990), China Aviation Industry Corporation and China Aerospace Industry Corporation (1993), the Commission of Science, Technology and Industry for National Defense (1998), the 10 large military industry groups (1999) and the 11 large military industry groups (2001).
Stage III	<ul style="list-style-type: none"> ◆ In the 1990s, Jiang Zemin put forward the important strategic guideline of combining military needs with civilian needs, reserving military potential in civilian capability, vigorously developing coordination, and making independent innovations. ◆ China began to upgrade the military equipment on a large scale. ◆ In the 17th National Congress of the Communist Party of China, President Hu Jintao put forward that "China will take a new road of military-civilian integration with Chinese characteristic".

Stage IV	<ul style="list-style-type: none"> ◆ The central government established the Commission of Science, Technology and Industry for National Defense and the 10 large military industry groups, by the end of 2007, there had been 62 listed companies (including 7 companies listed overseas) whose big shareholders were or actually controlled by military enterprises. 7 out of the 40 large scale state owned enterprises whose assets excess 100 billion RMB were military enterprises. ◆ The defense-related procurement system was reformed and the market competition was introduced into military product market.
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4.1.2 Local Political Environment

The Third-front enterprises are of great significance to Sichuan province. Compared with coastal regions, the geographical condition in Sichuan province hinders its development, such as the inconvenient transportation, high transportation cost and the undeveloped local economy. The booming economy brought by the implementation of reform and opening policy is mainly in coastal regions. Sichuan province is a typical large province in central and western regions of China. The Third-front enterprises play an important role in the regional economic development. They are of great significance to the social as well as economic development of the region. If the Third-front enterprises succeed, it can promote the local economic development, employment, GDP (an important indicator in appraising the achievement of local officials) and the local transportation and urban construction (Ning, 2000). However, if the Third-front enterprises fail, it may result in the loss of a substantial amount of assets, the decline of regional economy and the increase of social instability. Local governments play a vital role in the development of enterprises in China (Feng, 2001; Gao, 2004; Wang, 2007; Wei, 2004; Xu, 2012), which is particularly true for the Third-front enterprise. Since the local governments were granted more power to make their own decisions by the central government, the maximum investment quota, particularly for some new projects, which can be determined by the local governments was getting bigger and bigger---from the initial 30 million RMB to 50 million RMB in 1992. Their financing amount also kept increasing. In fact, this indicates that the local governments were given more right to allocate resources. The policy of Western Development⁹ brought even more opportunities. All these factors strengthened the role played by the local governments in the

⁹Western Development is a policy adopted by the Central Government of the People's Republic of China, which aims to improve the economic and social development of the western region and consolidate the national defense by taking advantage of the remaining economic viability of the eastern coastal areas.

Third-front enterprise development. Generally speaking, the local government give the Third-front enterprises favorable condition is not just out of political consideration, but also a number of economic reasons. Although the Third-front enterprises' military production is tax-free, the civilian production can generate revenue for the local governments, which is of great significance to the local governments. The success of the Third-front enterprises can greatly increase the revenue of the government. Even if there might be loss at the initial stage of developing products for civilian use, the governments can expect the possible profit in the long run. Besides, the development of products for civilian use is sure to boost the local upstream and downstream markets and promote the employment, which is of great significance to the safeguard of the social stability and promotion of the regional economy.

Under the guidance of the central government's policy, Sichuan province also promoted its Third-front construction. Based on the available data (e.g. Ning, 2000; Xu, 2012), we can outline the Third-front construction of Sichuan province as follows:

Stage I (1950s-1970s)

The Third-front construction started. The central government established an authority----Southwest Third-front Construction Committee to lead and promote the construction of the Third-front in concerning regions. For the major projects, a leading group led by the chief leaders of the provincial government was established to guarantee the advancement. The central government increased its investment in Sichuan's infrastructure. From 1965 to 1967, the amount of investment in Sichuan accounted for 14% of the national investment budget. In order to support the Third-front construction of Sichuan, a large number of coastal enterprises were moved to Sichuan, including 248 medium and big enterprises. The fixed assets of these enterprises added up to 20.86 billion RMB, accounting for 60.2% of Sichuan's industrial fixed assets. From 1967 to 1969, the Third-front construction in Sichuan and other provinces in China were badly interrupted and damaged by the Cultural Revolution.

Stage II (1970s-1990s)

In December 1969, Sichuan Third-front construction leading group was established. In April 1970, a meeting known as “704” was held by Sichuan Revolution Committee and Chengdu Military Area to deploy the Third-front construction, hence the three-front construction in Sichuan was further promoted. In 1972, Mao Zedong approved the application of spending 4.3 billion dollars on importing large-scale set equipment from the western countries, one third of which went to the Third-front enterprises of Sichuan. By 1985, the

fixed assets achieved by Third-front construction had accounted for 40% of the total amount of Sichuan province; more than 150 defense-related enterprises, research institutes and supporting units had been established. During this period, 1/5 of China's weapon industry was in Sichuan and the value of fixed assets owned by the aviation industry in Sichuan accounted for more than 10% of the total amount of China. Sichuan made remarkable progress in the Third-front construction, e.g., the successful launch of China's first experimental communication satellite in 1984 and the successful launch of a practical communication and broadcasting satellite in 1986.

Stage III (1990s-2000s)

At this stage, the provincial government gave strong organization and policy support to the Third-front enterprises to implement the strategy of military-civilian integration. In 2007, *Sichuan Joint Meeting for Promoting the Development of Civil-Military Industry* was established, and the opinions on promoting *The Opinions on Accelerating the Development of Civil-Military Industry in Sichuan*. A large number of companies that represent China's advanced level of science and technology emerged and remarkable achievements were made. Meanwhile, some Third-front enterprises in Sichuan like Changhong Electric, Dongfang Electric Machinery and Changcheng Steel were transformed into joint-stock enterprises and went public, achieving good performance. Jiang Zemin (president of China at that time), Li Peng (Premier of China at that time) and other leaders of China inspected many Third-front enterprises in Sichuan on many occasions.

Stage IV (2000s-)

In 2008, when Hu Jintao (former president of China) was inspecting in Sichuan, he put forward the important instructions that "Sichuan should make full use of its advantage of having many defense-related research institutes and military enterprises, establish and perfect the innovation system for military-civilian integration and develop the dual-use technology", which gave the Third-front enterprises in Sichuan a powerful impetus. The provincial government established the "Joint Meeting" and introduced the relevant documents and specific supporting policies for accelerating the development of the Third-front enterprises, giving them favorable conditions in fiscal and tax. The military-civilian integration of the Third-front enterprises was incorporated into the twelfth five-year plan of Sichuan province. By 2011, the size of the Third-front enterprises in Sichuan had been up to 150 billion RMB, achieving industrial added value 40 billion RMB; the coverage and social influence of the Third-front enterprises continued to expand and the industrial structure was further optimized.

The goal laid in the twelfth five-year plan for the Third-front enterprises is to expand their industrial size to 350 billion RMB, further adjust the industrial structure, and create the talent training model and promote innovation ability.

The major evidences analyzed above are listed in the following table:

Table 4- 3 Qualitative Analysis of Local Political Environment

Stages	Evidences
Stage I	<ul style="list-style-type: none"> ◆ The Third-front construction started. The central government established an authority---Southwest Third-front Construction Committee to lead and promote the construction of the Third-front in concerning regions. ◆ For the major projects, a leading group led by the chief leaders of the provincial government was established to guarantee their advancement. ◆ The central government increased its investment in Sichuan's infrastructure. From 1965 to 1967, the amount of investment in Sichuan accounted for 14% of the national investment budget. ◆ In order to support the Third-front construction of Sichuan, a large number of coastal enterprises were moved to Sichuan, including 248 medium and big enterprises. The fixed assets of these enterprises added up to 20.86 billion RMB, accounting for 60.2% of Sichuan's industrial fixed assets. ◆ During the ten years Cultural Revolution (1967-1969), the Third-front construction in Sichuan and other provinces in China were badly interrupted and damaged.
Stage II	<ul style="list-style-type: none"> ◆ In December 1969, Sichuan Third-front construction leading group was established. ◆ In April 1970, a meeting known as “704” was held by Sichuan Revolution Committee and Chengdu Military Area to deploy the Third-front construction, hence the three-front construction in Sichuan was further promoted. ◆ In 1972, Mao Zedong approved the application of spending 4.3 billion dollars on importing large-scale set equipment from the western countries, one third of which went to the Third-front enterprises of Sichuan. ◆ By 1985, the fixed assets achieved by Third-front construction had accounted for 40% of the total amount of Sichuan province; more than 150 defense-related enterprises, research institutes and supporting units had been established. ◆ 1/5 of China’s weapon industry was in Sichuan and the value of fixed assets owned by the aviation industry in Sichuan accounted for more than 10% of the total amount of China. ◆ Sichuan made remarkable progress in the Third-front construction, e.g., the successful launch of China's first experimental communication satellite 1984 and the successfully launch of a practical communication and broadcasting satellite in 1986.

<p>Stage III</p>	<ul style="list-style-type: none"> ◆ In 2007, <i>Sichuan Joint Meeting for Promoting the Development of Civil-Military Industry</i> was established, and the opinions on promoting <i>The Opinions on Accelerating the Development of Civil-Military Industry in Sichuan</i>. ◆ A large number of companies that represent China's advanced level of science and technology emerged and remarkable achievements have been made. ◆ Meanwhile, some Third-front enterprises in Sichuan like Changhong Electric, Dongfang Electric Machinery and Changcheng Steel were transformed into joint-stock enterprises and went public, achieving good performance. ◆ Jiang Zemin (president of China at that time), Li Peng (Premier of China at that time) and other leaders of China inspected many Third-front enterprises in Sichuan on many occasions, speaking highly of their atonements and giving them vigorous support.
<p>Stage IV</p>	<ul style="list-style-type: none"> ◆ In 2008, when Hu Jintao (former president of China) was inspecting in Sichuan, he put forward the important instructions that "Sichuan should make full use of its advantage of having many defense-related research institutes and military enterprises, establish and perfect the innovation system for military-civilian integration and develop the dual-use technology", which gave the Third-front enterprises in Sichuan a powerful impetus. ◆ The provincial government established the "Joint Meeting" and introduced the relevant documents and specific supporting policies for accelerating the development of the Third-front enterprises, giving them favorable conditions in fiscal and tax. ◆ The military-civilian integration of the Third-front enterprises was incorporated into the twelfth five-year plan of Sichuan province. ◆ By 2011, the size of the Third-front enterprises in Sichuan had been up to 150 billion RMB, achieving industrial added value 40 billion RMB; the coverage and social influence of the Third-front enterprises continued to expand and the industrial structure was further optimized. ◆ The goal laid in the twelfth five-year plan for the Third-front enterprises is to expand their industrial size to 350 billion RMB, further adjust the industrial structure, create the talent training model and promote innovation ability.

4.1.3 Evaluation of Macro Political Environment

Comparing the periodical changes in national political environment and the local political environment, we can find some periodical features. It can be predicted that these periodical features will influence the development of the Third-front enterprises and determine the periodicity of the Third-front enterprises' organizational evolution.

The above analysis also reveals that the macro political environment in which the Third-front enterprises' organization evolves is in a dynamic change. In order to visually present the environmental changes, the macro political environment will be evaluated, thus to provide data for further analysis. It can be seen from the discussion in the previous part that the changes in national macro political environment and provincial political environment display four quite consistent stages. To what extent the environment of each stage is conducive to the development of the enterprises? This is evaluated mainly from the policies and the importance attached by the leaders; the focus is the establishment of relevant organizations, the introduction of policies and the leaders' opinions. To what extent the environment of each stage is conducive to Aosheng Group's mixed development of military and civilian production? Adopting the evaluation methods mentioned in Chapter 3, the evaluation on the macro political environment in which Aosheng Group's organization evolves can be generated (see Table 4-4). It should be noticed that "conducive" here means to be conducive for Aosheng Group to implement military-civilian integration strategy and realize military and civilian resources sharing and coordinated development. The final results were discussed by four senior management staff of Aosheng Group (2 of them are retired); they all thought that the results were of good reliability since they reflected the reality. The results show us that the political environment is getting increasingly favorable.

Table 4- 4 Periodical Evaluation of the Political Environment

Stages	Stage I	Stage II	Stage III	Stage IV
Evaluation	++	+++	++++	+++++

4.2 Macro-Economic Environment

The macroeconomic environment influences both the enterprises' product market and raw material market, which will certainly influence the development of relevant enterprises. Just like an interviewee said:

China's economy is developing rapidly. Under such conditions, our civilian products also flourished. (R2)

China has achieved decades of continuous high speed economic growth. It is even predicted that by 2020, China will become the largest economy in the world (Ikenberry, 2008). The reform and opening policy that started from 1978 has injected fresh blood into China's economy. In 1993, the growth rate of GDP per capita surpassed 13%, the highest one around

the world. Compared with the period from 1965 to 1980, the growth rate of GDP per capita from 1980 to 1990 almost doubled. The reform that aims to achieve a market system with Chinese characteristic has brought systematic changes in economic structure. The import and export continue to grow at a relatively high rate. The growth of export, in particular, is called the engine of China's economic development. In order to stick to the development strategy of "centering on economic construction"¹⁰, Chinese government initiated its reform and perfection in such fields as policies and laws so as to achieve a more efficient allocation of market elements and stimulate the economic development. The reform, on one hand, brings development opportunities to the Third-front enterprises while on the other hand, brings big challenges, too.

In December 1978, on the Third Plenary Session of the 11th CPC, it was clearly pointed out that the focus of the work of the whole party would be transferred to the socialist modernization, and China's history entered a new stage of reform and opening up and socialist modernization. The central government leaders led by Deng Xiaoping started to work on ways of building socialism with Chinese characteristics. Since the reform and opening up, China's economic development has achieved great success.

As for the history of the reform, some scholars have divided it into three stages: 1979-1992, it focuses on constructing planned commodity economy, which is full of contradiction between the planning, allocation of production elements and the market allocation of products. 1992-2005, it focuses on constructing the socialist market economic system by constructing the public ownership dominated production element market. In this thesis, the macroeconomic environment in which the organization of Aosheng Group evolves will be divided into four stages: before the reform and opening up (before 1978), initial stage of the reform and opening up (1979-1992), during the reform and opening up (1993-2005) and constructing market economy system (since 2006).

In order to better describe the changes in economic environment at the four stages, appropriate indicators are needed. There are various indicators for macro economy, such as GDP, GDP growth rate, growth rate of GDP per capita, export growth rate, industry growth rate and etc. This thesis analyzes the changes in the major macroeconomic indicators of the period from 1965 to 2010 and then selects the appropriate ones to evaluate the

¹⁰ Put forward on the 13th National Congress of the Communist Party of China in 1987, it is also briefly called "one center and two basic points" and is the core of the basic line of the Communist Party of China. A center here means to focus on economic development and two basic points refers to sticking to the four cardinal principles and the policy of reform and opening up.

macroeconomic environment, thus getting the data concerning the changes in the macroeconomic environment at each stage of Aosheng Group's evolution.

Figure4-1 visually shows the changes in the economic indicators from 1965 to 2010. Viewed from the figure, it can be seen that the majority of the macroeconomic indicators are upward. The indicator for evaluating macroeconomic environment adopted in this thesis is the most common used one---GDP growth rate. The figure also shows that the growth rates of industry and manufacturing are stable (10%-15%), while the growth rate of export keeps accelerating. Researches show that the rapid increase in the growth rate of export reflects China's dramatic institutional reform and technological improvement after the reform and opening up. The booming economy provides favorable conditions for the Third-front enterprises' development.

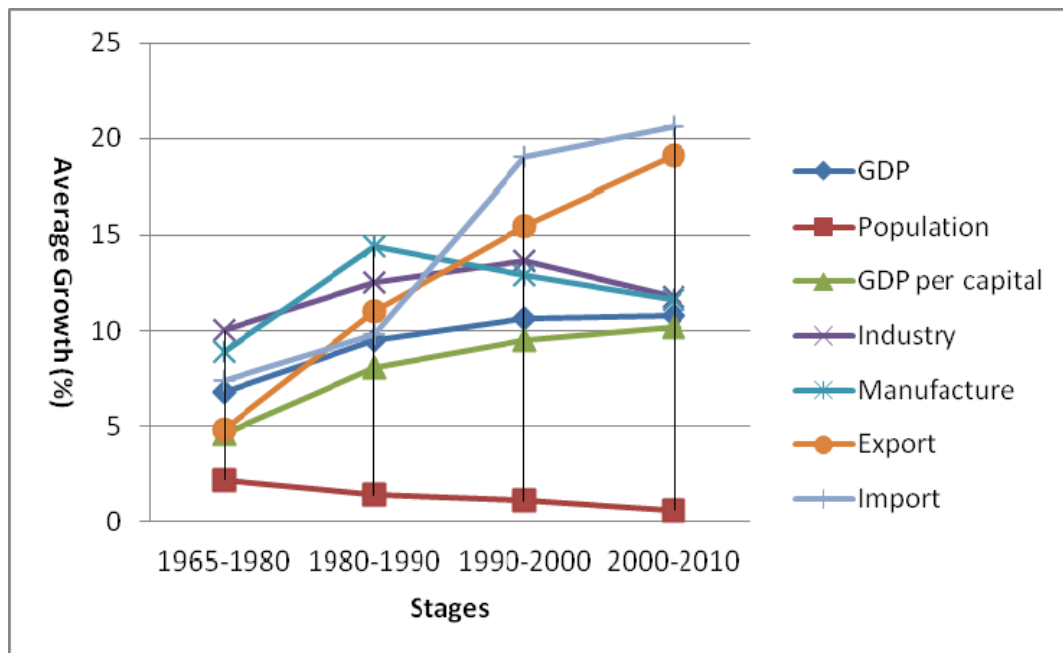


Figure 4- 1 1965-2010 Graph of Changes in Macro Economic Growth Rates of China

Data source: Adopted from *World Development Report, 1992* and *China at a glance, 2012* (the import growth rate from 2007 to 2009 is taken from *Chinese Statistical Yearbook*).

Figure 4-2 visually shows the changes in the GDP growth rates at the four stages. Before the reform and opening up, the GDP growth rates are obviously downward. Since the reform and opening up, the GDP growth rates rise dramatically at the initial stage and then gradually become stable.

In order to get the final evaluations of macroeconomic environment at each stage, several steps were conducted following the evaluation approach described in Chapter 3. First, as shown in the, the trend of Chinese national economic development is upward. Thus the

numbers of “+” increased from 2 to 5 were used to indicate this change trend. Second, the averages of GDP growth of the four stages (before 1978, 1979-1992, 1993-2005, 2006-2010) calculated as the quantitative indicators of macroeconomic environment show an upward trend, too. Third, the evaluation results of the macroeconomic environment of each stage were discussed with relevant staff of Aosheng Group and they all thought that the results reflected the reality. The final results are shown in Table 4-5.

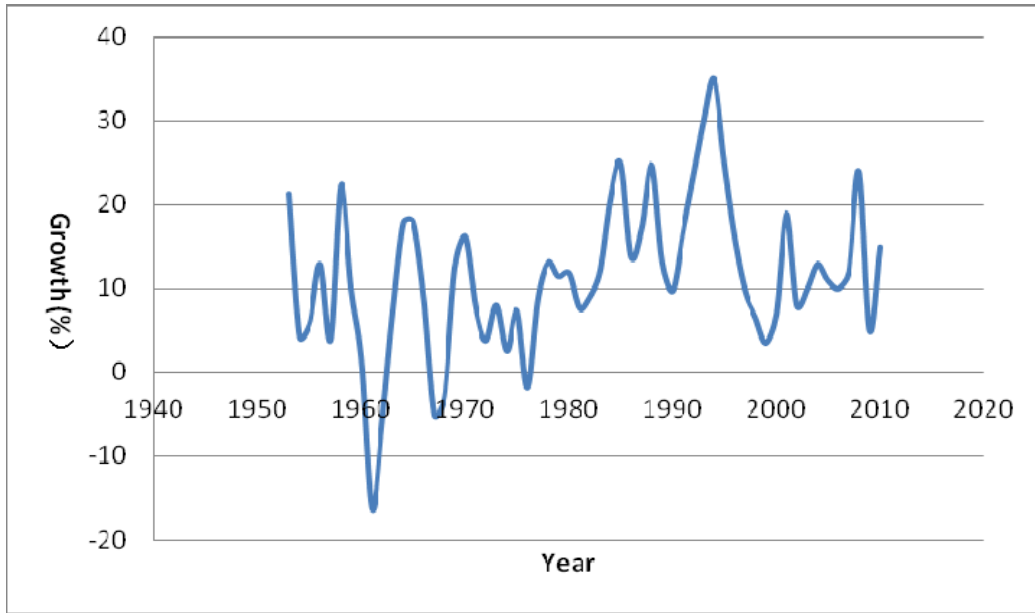


Figure 4- 2 Changes in GDP Growth Rates

Table 4- 5 Evaluation of Macro Economic Environment

Stages	Stage I	Stage II	Stage III	Stage IV
Evaluation	++	+++	++++	+++++

4.3 Changes in Markets

4.3.1 Military Market

The military background of Aosheng Group determines that its organizational evolution will be influenced by the military market to a large extent. The changes in defense market can be observed from two aspects, one is the market capacity, and one is the national systems for the procurement and management of military products. When the market demand for military products is big, Aosheng Group can give full play to its advantage in the military field in order to win more orders so as to improve its performance. Conversely, when the market demand for military products reduces, Aosheng Group's defense-related business is surely to be affected, orders reducing and performance decreasing. Viewed from the system

for the procurement and management of military products, there are huge differences between planned system and market system. In the planned system, military enterprises like Aosheng Group don't need to worry about the sale of products at all. What they need to do is to improve their production efficiency, finish their production tasks timely and fully with good quality. Competition can hardly be seen in the planned system. However, in the market system, enterprises have to bid for orders. Although there's market entry restriction in defense market, the exclusive military's procurement system is getting more and more open, which has aggravated the completion among enterprises which produce similar products. The combination of the changes in the demand for military products and the corresponding management systems make up the major parts of the changes in defense market.

The military spending indicates the capacity of the relatively exclusive defense market. When the military spending increases, it means that the procurement volume will increase, too. The enterprises are more likely to win orders, increase production output and get profit. The changes in military spending have significant influence on the defense market. It further influences the enterprises concerned through market mechanism by affecting their strategies making as well as daily behavior adjustment. Eventually, it will influence the organizational evolution of the Third-front enterprises.

Figure 4-3 visually shows the annual growth rate of China's military expenditure (1951-2010). It can be seen that the growth rate of the military spending varies with each passing year. The sharp fluctuation of the military spending caused by various political and economic factors has significant influence on military enterprises (Finkelstein and Gunness, 2007). Some researches show that military enterprises will speed up their development of civilian products due to the fluctuation of the macro environment (Zhang, Zhang, and Jing, 2010). Meanwhile, it has to be noticed that the sharp fluctuation of the military spending will directly influence the defense market, which will bring multiple influence on military enterprises. On one hand, it may bring the military enterprises the "sense of crisis", which, together with the influence posed by the introduction of some "military-civilian integration" policies, may remind the military enterprises that it is urgent to develop civilian products. All these may alleviate the military enterprises' discomfort when confronting the fierce competition from the civilian market. On the other hand, the seemingly periodic fluctuation in defense market also may lead some military enterprises to stick to military products and ignore civilian products in spite of the distressed defense market. The possible reason is that they still expect another thriving market, which alleviates their pressure for developing

civilian products. Of course, people's perception varies on the sense of crisis and pressure, which can further determine the strategy and subsequent organizational evolution of the enterprises. Interviews and field surveys reveal that the leaders' perceptions on the two factors determine the enterprises' development strategies, which determines the enterprises' performance and long-term performance (R1).

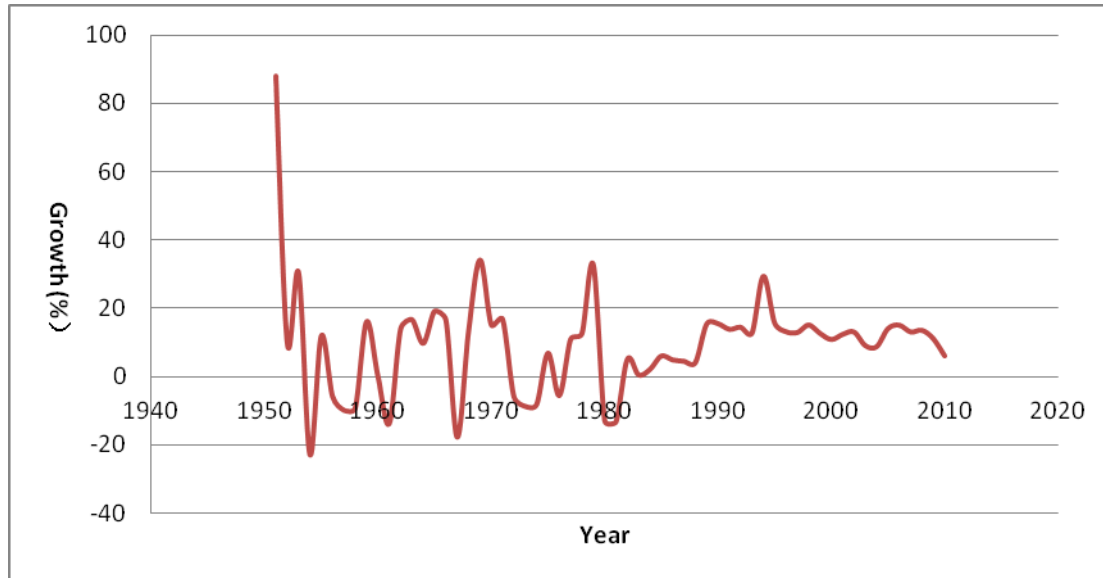


Figure 4- 3 Annual Growth Rate of Military Spending (1951-2010)

Note: The data is taken from *Comprehensive Statistical Data and Materials on 50 Years of New China and China's Statistical Yearbooks and Research Findings* (Finkelstein et al., 2007). The macro economic data in the coming sections are taken from the same source; therefore, it will not be explained.

Viewed from Figure 4-3, the trends of the annual growth rate of the military spending are: First, the annual growth rate of the military spending keeps fluctuating, which is directly caused by the central government's policies and reflects the changes in international political and military situations as well as the subsequent defense pressure. The fluctuation also directly influences the capacity of military enterprises' target market, which subsequently influences the individual military enterprise. Second, the fluctuation range is getting smaller. Before 1982, the growth rate of military spending was fluctuant, with the highest growth rate up to 87.93% and the lowest one -22.88%. Since 1982, the annual growth rate gradually stabilized. Third, the changes in the growth rate of the military spending are periodic. There are generally three stages: Stage one, the spending tends to decrease and it decreased sharply particularly from 1951 to 1952. Stage two, the spending appears to go upward. Either at stage three or stage four, the spending decreases dramatically. Considering the previously described background and stages of the historical process of military-civilian integration, it is easy to understand that the stages are a reflection of the international and domestic political and economic situation as well as the national security needs.

As for China's military procurement system, it has experienced dramatic changes from the completely planning system to the open market system since the founding of PRC to the early 21st century. Initially, China's defense market was in an exclusive system (Chen, 2011; Liu, 2000). Especially in the early years after the founding of PRC, it was completely in the planned economic system. The government assigned the tasks to each military enterprise, and what the enterprises need to do is just to organize the research, development and production and complete the orders, meeting both quality and quantity requirements. In the planning economy, the allocation system of the production tasks determines both the products and production capacity of the military enterprises. After the reform and opening up, the management system of the military products has gradually liberalized to some extent. Such institutional changes bring both opportunities and challenges to the military enterprises. For those military enterprises that have qualifications, the less exclusive military procurement system means opportunities to win more military orders; while for the incumbent military enterprises, the change may deprive them of the original protection of "barriers to entry", and they have to face more challenges and competition. All these things add uncertainty to the market. Aosheng Group's flagship military products have an absolute advantage in their field, which on the one hand enables Aosheng Group to seize market opportunities when the demand for military increases, and on the other hand lead Aosheng Group to have to withstand greater market pressure when the military demand reduces.

When evaluating the defense market, the changes in the total military market demand and the management system of military market must be taken into account. The bigger the market capacity is, the better the market environment will be and vice versa. At stage I, the demand of military products was very high since Mao Zedong thought that large-scale-war would happen sooner or later. At stage II, the demand decreased rapidly because themes of that era became peace and development, any more the central government decided to pay most attention to economic development. Thus, the military market demand was the lowest. At stage III, the military demand increased a lot due to the new round of arms race which also brought the upgrading of military installations and equipment. At stage IV, when large-scale-war seemed to be impossible and the upgrade of arms and equipment finished, the demand decreased to a considerable low level. According to the discussions above, the appraisers gave their original evaluations of military market of each stage.

As for the institution and management system, the military market has been becoming less and less exclusive. There's no absolute answer to the question whether the less exclusive

defense market is better or worse to the Third-front enterprises. We believe that firstly there must be criteria for us to answer the question, that is, to what extent it is conducive for the military enterprises to get military orders. Then, it should be evaluated by the senior staffs of this kind of enterprises. The same group of appraisers adjusted their original evaluations, considering the discussions in part 2.2.1 and 4.1.1. For those differences between different appraisers, a seminar was organized to discuss them to achieve an agreement that the market demands at the four stages were evaluated as “high, low, high, and mid-high”. The original evaluations of military market were discussed with the concerning managers from Aosheng Group. All managers agreed to the evaluation. The final evaluation results of the military market are shown in Table 4-6.

Table 4- 6 Evaluation of Defense Market

Stages	Stage I	Stage II	Stage III	Stage IV
Evaluation of the military market	++++	++	++++	+++

4.3.2 Civilian Market

Although there might be many difficulties for the Third-front enterprises to enter the civilian market, it's worth trying since the civilian market is a growing market, while the military market capacity is relatively stable and even shrinking at times. The military tax exemption mechanism motivates enterprises to develop the military products, but the civilian market is obviously attractive to the military enterprises due to their consideration of profit maximization. Besides, the technology, talents, equipment and other resources of military production can provide the Third-front enterprises with strong support for their development of civilian products.

According to *the Report on Urban and Rural Markets* issued by the National Bureau of Statistics of the People's Republic of China, there're four stages in the development of China's urban and rural markets (1949-1957,1958-1978,1979-2000,2001-2008), which are briefly introduced as follows:

Stage I (1949-1957)

In the early years after the founding of PRC, the economy was in a state of chaos with low productivity, underdeveloped trade and extreme shortage of commodities. It's very urgent to reform the old market system and create a new one. Therefore, a massive socialist transformation started which gradually transform the private industry and commerce into state-owned ones, and accordingly transform the private ownership of the means of

production into a public ownership. Through the specific and differentiated policies (use, restrict or transform), the capitalist industry and commerce were fully exploited. By the end of 1957, about 1.889 million businesses had been transformed, accounting for 82% of the total number of private businesses. This is known as a landmark that indicates the success of China's socialist transformation of commerce and industry as well as the coming of the new historical period for China's business. The planned economy dominated socialist public ownership business and market achieved great development, which led to the rapid development of the national economy.

Stage II (1958-1978)

The national economy continued to develop at a high speed till 1978. Although the social and economic campaign the "Great Leap Forward" and the social political movement the "Cultural Revolution" hindered the development of the national economy and the private businesses were basically in the state of containment, the planned economy dominated socialist public ownership business and market continued to develop at a fast and steady pace. According to the statistics, from 1957 to 1978, the total sales of goods increased dramatically in spite of the decrease in the number of business organizations and employees. In 1978, the total volume of retail sales added up to 155.86 billion RMB, 3.3 times of the total volume of retail sales in 1957, which was 47.42 billion RMB. Statistics also reveals that 98% of the total volume of retail sales in 1978 was contributed by enterprises owned by the whole people and collective businesses. The public owned businesses dominated the market.

Stage III (1979-2000)

Since the reform and opening up, especially after Deng Xiaoping's southern tour speech, the consumer goods market developed at an unprecedented speed. In 1997, the total volume of retail sales of the social consumer goods was 155.86 billion RMB, while in 2000, it soared up to 3.91057 trillion RMB, increased 24 times and the average annual growth rate was 15.9%. In the development of the market, the circulation pattern under the planned economic system gradually broke down, and a new circulation pattern facilitating the development of the socialist market economy was under construction. The rise of the non-state owned economic sectors undermined the dominating position of the public business. At this stage, the development of the market had its own features. First, the state-owned business continued to deepen its reform. The focus of the reform is to set up the new rules and regulations, invigorate business, and gradually establish a modern enterprise system. Second, the role played by the market in the circulation of commodities continued to improve. Around

95% of the commodities were allocated via the market and the commodity priced by the government accounted for less than 5%. Third, various economic sectors coexisted in the circulation field and had common development.

Stage IV (20001-2008)

The 21st century witnessed the rapid development of the consumer goods market. Since the 16th CPC National Congress, in particular, the consumer goods market continued to thrive thanks to the concerted efforts of the whole nation. The total volume of the retail sales of the consumer goods increased from 4.30554 trillion RMB in 2001 to 10.84877 trillion RMB in 2008, and the annual growth rate was 14.1%, 3.5 percentage points higher than that of the "Ninth Five-Year Plan" period.

Table 4- 7 Evaluation of Civilian Market

Stages	Stage I	Stage II	Stage III	Stage IV
Evaluation of the civilian market	+	++	+++	++++

From what is discussed above, it can be concluded that since the founding of PRC, China has gradually adjusted its national economy and reformed its planning economy system; a market dominated economic system has been established and the national economy tends to develop rapidly and stably. Based on the criteria that to which it is conducive to the development of Aosheng Group and the assumption that "the higher the total final consumption is, the greater the market demand will be", following the evaluation process described in Chapter 3, five appraisers independently gave their own evaluations for each stage. Though there were some differences in the evaluations about each stage, every one's evaluation for four stages showed an increase trend. After discussing in a seminar, the agreement was achieved. The final evaluations are shown in Table 4- 7. These evaluations were also discussed with some senior employees from Aosheng. They all agreed to these evaluation results.

For the purpose of more reliable measurement, the objective economic indicators were used to test whether the above evaluations reflected the reality of civilian market. The total final consumption can reflect the social economic conditions, at least to some extent. *Based on China Compendium of Statistics 1949-2004 and China Statistical Yearbook*, a figure that shows the annual growth rate of each year's total final consumption can be drawn (see Figure 4- 4). Apparently, the regression line in Figure 4- 4 gives strong support for the evaluations in Table 4- 7. It can also be seen that before the reform and opening up, the annual growth rate of the total final consumption slowly declined; since the reform and opening up to late 20th

century, the annual growth rate of the total final consumption significantly increased; in the 21st century, it has remained relatively stable (about 10%). This change, from some perspective, can also be seen as an indicator of good development of market. In short words, the evaluations are highly reliable.

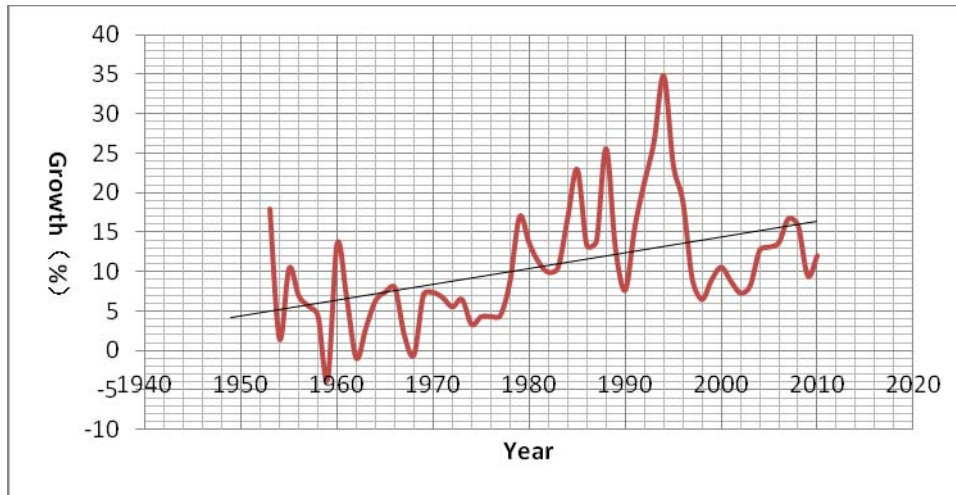


Figure 4- 4 Change in Annual Growth Rate of Total Final Consumption

4.4 Summary

In this chapter, the macro environment in which Aosheng Group's organization evolves has been analyzed in detail, including the changes in macro political, economic and market environment. It has been found that in the process of Aosheng Group's organizational evolution, its macro environment changes dynamically and periodically. The Macro political environment is mainly influenced by the central government's military-civilian integration policies, which consists of four distinctive stages. The beginning of the reform and opening up is the watershed of the macroeconomic environment which also has different features at different stages. The fluctuation in defense market minishes and tends to be stable. However, it also has distinctive features at different stages. The development of the civilian market is a process of transforming the economy from the complete planned economy to a market one. From the analysis, it can be seen that as a whole system, the macro environment changes consistently to some extent, e.g. there are something in common in the stage division of the political, economic and market environments. How the macro environment change is connected with the organizational evolution of the Third-front enterprises (such as Aosheng Group) will be further discussed in Chapter 6.

Chapter 5: Evolutionary Process Analysis

Organizational activities involve a great many activities domains, and it is required for research efforts on organizational evolution process study to identify those aspects which are vital to the organization, including those organizational activities which are particularly relevant to the survival and core competitiveness of the organization (Prahalad and Hamel, 1990; Romanelli et al., 1994). In view of this thought and the basic concepts of the theory of punctuated equilibrium, we shall focus on analyzing the strategic orientation, organizational structure, and its closely related organizational performance, pressure for changes, and organizational inertia during the process of organizational evolution from intra-organizational perspective. These factors are interconnected, which reflects the internal dynamic mechanism during organizational evolution, as is in line with the requirements for high relevance to the organization. Even though things like organization culture, division of power and hierarchy of control are also important (Romanelli et al., 1994; Tushman et al., 1985), we are not elaborating them for the time being, due to the limitation of time, efforts and data availability. In this Chapter, all materials from the interview and data collected from other sources, and the macro-environment analysis in Chapter 4 (P47) are based to identify the four stages of the organizational evolution of Aosheng Group, which are briefly described. Then specific analysis of the organizational structure, organizational performance, strategic orientation, pressure for changes and organizational inertia is made respectively, and their analysis results will provide data foundation for follow-up analysis.

For the purpose of guaranteeing the reliability and avoiding possible bias, some strategies were used. First, the appraisers who were asked to evaluate the variables in this chapter were not the same people who evaluated the variables in Chapter 4. If the same people evaluated both the external environment factors and internal factors, they may be influenced by previous appraisal experience. Second, different groups of five people were asked to appraise different variables such as organizational performance, strategic orientation, change pressure, and organizational inertia. That means one group only appraises one variable (construct). Fourth, all the appraisers were senior employees from Aosheng, and some of them were middle managers. Because all the variables in this chapter are internal factors, only those who are very familiar with the history of Aosheng can give proper evaluations. Finally, all

evaluations were compared and discussed in an organized seminar. This discussion can avoid some personal understanding deviation. The final results were discussed with senior managers from Aosheng. Some of the senior managers have been the top management team members, some of them are top leaders today.

5.1 Stage-wise Overview

The development history of Aosheng Group has been divided into four stages based on the interview findings, the corporate data and relevant report materials. The division is made by the author independently first, whose preliminary decision is then discussed in the academic team; relevant results are then communicated with the interviewee of Aosheng Group, to eventually find unanimously rational division. In this section, each stage is described.

5.1.1 Stage I (1950-1981)

To meet the demand for national defense, as directed by the State Development Planning Commission and the Construction Commission, the state-owned Aosheng Factory was built in Sichuan in 1950s. Aosheng started their pioneering work then under the guideline of “simultaneous capital construction, R&D and production”, and supported by the “Third Front Construction Program” policies, workshops and other plant buildings were successively built up, and with efforts made from modeling on imported equipment to trial production and to modification, they became a leading supplier of some military supplies and military air traffic control system. Their products in relevant fields were reputed of the highest technological level at home, and some products even were even the very firsts at home at that time.

During this stage, Aosheng shared common features with other Third-front enterprises in their early days, which specifically are: first, they were relatively small scale, low production value, and small organization scale; second, they had to handle excessive production assignments, mainly due to the strong demand by the military for national defense and under the international political status quo, when the government under the guideline of the Third-front strategy assigned a great many heavy production tasks to all military industrial enterprises, and demand they should make all efforts to fulfill; third, they are under the complete planning system, where the enterprises did not have to care about marketing and sales, but produced as required up to the assignments; fourth, in terms of organizational

structure, they were very much centralized, which worked to finish the production assignment, and embodied the planning system.

During this stage, the enterprise was relatively small in scale (by 1980s, the total output value was only 8million RMB Yuan), and in short this was the pioneering stage of Aosheng Group (R6) ¹¹.

During such a historical period, the Great Cultural Revolution was politically huge in the country, when political leadership was in command of everything (R8).

Under the historical background of the Third Line Construction Program, Aosheng, together with other enterprises under the Program, operated completely under the planned economic system, and shared characteristics with other similar enterprises, but had its own distinctive features (R1).

The military industrial enterprises then produced a lot of products, which did not only meet the demand for military construction, but also supported other countries like North Korea, Albania, Poland and other countries (R7).

At that time, the government directed assignments to those military enterprises, which could just work to organize and do production to fulfill the assignment (R6).

In such a case, the singular military industry system made the enterprise a typically military one (R1, R7, R8).

The decades' history under military background helped to shape up the typical corporate culture of "working hard tirelessly to win tough battles". (R1, R8).

This corporate culture played an important role in our follow-up corporate development, and drove to overcome all kinds of difficulties during the process of organization development. Besides, at that time the enterprise did not see any pressure of competition, and its fine performance induced considerable inertia for change, which worked to ensure efficient military products production and to some extent ensure the organization competitiveness.

¹¹ The interview data references used in this thesis are marked in the way as shown in Table 3- 3. e.g. R6 here means the data is from the interview record of interviewee numbered R6.

During this stage, the enterprise mainly featured scale expansion and operation efficiency, with the military as its target market; therefore, all efforts were made to fulfill the productive task, as is its core, or even only, objective.

5.1.2 Stage II (1981-1992)

By late 1970s, peace and development had gradually become a common view, and under not-so-intense international environment, the government brought forward the policy of transfer military technology to civilian use. The competent ministries and commissions in charge of those Third-front enterprises sometimes even deliberately disclosed some information which made those military enterprises feel they were encouraged by the central government to develop products for civilian use. At that time, the enterprises were also confronted with things like: On one hand, with less and less military orders, their production capacity (including personnel and equipment) became redundant; on the other hand, less military orders led to less corporate revenue, which affected the income of the staff, and lowered their living standard (let alone improved). In such a case, the enterprise had to make use of their existing resources for survival, as was critical to ensure their livelihood. At that time, in addition to handle military assignments, the enterprise also made some products for civilian use, mainly to have more income. Aosheng has been involved in making products for civilian use ever since.

Before then, the enterprise had manufactured products for military use only; some changes took place after 1978 (R6). Some enterprises under the leadership of the same ministry intentionally began to make some goods for civilian use (R7). In addition to handling military assignments, we also developed a phonograph, which was hand-operated initially, and changed to being power-driven, and was called electric gramophone (R1). Later on, we successively developed some products for civilian use like physiological recorder, electronic clock, electric fan, leather spray gun (for leather products fabrication), radio, and radio-cassette recorder (R8). In other words, we began our efforts to handle two tasks: products for military use, and products for civilian use (R1).

Of course, our efforts on military products are still fundamental, as products for civilian use at that time were not big deals, but only for more income. Making products for civilian use was just our part-time job so to speak

(R8).

We did these internally or unintentionally, which means we lagged behind theoretically. We made some sum-up later on and gave a lot of credit to our previous efforts (R1).

At that time, Aosheng tried to make products for civilian use, just meaning to generate income. While handling assignments of military products, it was good to make use of existing technology and equipment to develop some products for civil purpose, like radio, phonograph, electric fan and the like. Due to lack of market experience and underdeveloped national economy, all products we tried did not eventually work out as not supported by market demand. On one hand, our attempts to make products for civilian use failed somehow; on the other hand, we did see less and less orders for making products for military use, which actually challenged the previous development mode of military orientation. With changing national guidelines, and less military budget, military industrial enterprises had to survive such a crisis. Since 1980s, the government considerably changed its favorable policies for supporting military industrial enterprises, and provided one-off subsidy to most enterprises and urge them to seek their own business.

To make a living, some workers set up some vendor's stands around the plant, or made some wastes into fancy goods to sell and earn some living subsidies (R1).

In 1980s, the guiding thought at that time was to “develop national economy and private economy”; under such a guideline of Deng Xiaoping, we made two major efforts: On one hand, to reform and open to the outside world, and on the other hand, to develop economy. In terms of national defense, we disarmed the military force of over 1 million soldiers, and converted many military industrial enterprises into civil ones. Later on, this was called, “army-civilian combination” and further later on called “civil-military integration for better national defense”. In 1990s, we saw substantial change, beginning to covert the system. We did reform and convert. The one decade during 1990s actually saw very much substantial change. (R1).

Aosheng Group like other enterprises could not avoid the settlement by the government, with one-off subsidy of 500,000 RMB Yuan from the government which was not a small sum of money at that time. Nevertheless, it was such a critical decision on how to put such a sum

into good use. Thanks to their failure to come up with good products for civilian use at a large scale and little profits to the enterprise, opinions were quite divided at that time, as most people proposed they should simply distribute the money among the staff. The factory leadership headed by the director, however, had careful deliberation, and decided they could make it as long as good projects were identified thanks to their advantageous technical expertise.

At that time, it was quite hard for Aosheng to step forward, as in such a crossroad for survival. It would be a cul de sac to follow the previous path, while a new direction meant great risk. Under such circumstances, the corporate leaders made a huge decision to break their previous development mode, and mobilized the entire staff and converted them physiologically, and stepped on a track to produce products for civilian use for survival and development. After thorough investigation and research, they decided to make antenna for civil purpose, with some considerations. For one, the antenna industry at that time just took off; secondly, they enjoyed relevant technology foundation. They purchased a whole set of common antenna equipment in the United States with that sum of subsidy, and selected nearly one hundred technical personnel among those research personnel for military products, and made all efforts to develop 56-channel common antenna equipment, based on the equipment they bought from the United States. At that time, the industrial standard for common antenna at home was only 12 channels, and their products were so advantageous technologically. This advantage was vital to their follow-up products, as relevant departments even became an institute for civil products to research and develop products for civilian use. With the market of products for civilian use explored, and growing market share, the Group established the general strategy of orientation to products for civilian use. At that time, most workers requested to be transferred to relevant departments for products for civil purpose, and the departments for military products were not popular at all. To date, Aosheng Group had smoothly made its evolution from Stage I to Stage II, which made the organization onto the brand-new development stage.

By 1920s, Aosheng had obtained more than 50% of their general revenue from products for civilian use, which helped to stabilize the personnel team and at the same time provided necessary economic conditions for developing military products. And the group was also reshuffled into a limited liability company under modern corporate system, which marked a huge change in organizational structure correspondingly from the initial high concentration inverted T structure to the power-decentralized M structure.

5.1.3 Stage III (1992-2003)

After recent development for nearly two decades, Aosheng made huge progress in making products for civilian use, and gradually got on the track for rapid development. Aosheng at that time was confronted with a major decision: Shall they stick to the priority for making products for military use? No efforts on developing products for military use meant that they could invest more on research, development and marketing of products for civilian use, which was very conducive to developing products for civilian use and corporate performance.

In 1990s, we failed to retain most of our talents for developing products for civilian use, as they did not see decent income and found it was hard to make ends meet. Things did not turn better until 2000, when a historic opportunity was for the military industry by the government. (R4)

After thorough analysis and careful deliberation, the corporate leadership decided to have more investment on products for military use: first, to insist on the sacred mission of military industrial enterprises given by the state; second, to invest and enhance the competitive edge of their products in the market of military use as expected; third, to eventually support the development of their products for civilian use with more efforts on military ones, including stronger technical knowhow and better reputation, so as to lay a solid foundation for long term corporate development. From the end of the 20th century, Aosheng decided to take the general strategy of "basis on products for military use, aimed at development of products for civilian use", and set up the strategic objective of establishing "continuum business". While consolidating their presence in the military industry, they made every effort to develop products for civilian use, and entered onto the new stage of diversified coordinated development of products for military and civilian uses.

It turned out that they had made a wise decision. Thanks to the turn of international political and military presence, the government started to update and upgrade military equipment and facilities, with more and more orders for military products. This time, Aosheng Group which was at full clock took this opportunity and researched and developed various systems and military products which were procured by the military, and their presence in military products market rejuvenated, while those counterparts who were Pollyanna of products for civilian use only could do nothing but let such a good opportunity to pass by.

Meanwhile, Aosheng did not make it as expected in their attempts to make many

products for civilian use. For example, they made huge personnel and material input on fax machines, but ended up with failure, due to unproven technological expertise and the development of network technology. Some staff members for products for civilian use did not see any prospect of those products, and requested to return back the sector for military products. In the face of such a case, should they simply give up their efforts to develop products for civilian use? It seemed that Aosheng was confronted with another puzzle. Their careful deliberation helped to decide they should not give up. The whole group adjusted its strategy of “simultaneous development of products for military and civilian uses”.

5.1.4 Stage IV (2003-)

Under the circumstances where their presence in the market of military products, Aosheng Group, thanks to their several ups and downs, has come to realized that it is not simply an either-or choice question to decide on the “military” or the “civil”; it is not a matter whether or when to give up which one, but how to balance them dynamically, and build up a coordinated “military” and “civil” development system on the strategic level.

In view of the above, Aosheng put forward the development strategy of “civil-military integration, scientific development, basis on efforts for military use and more development of products for civilian use, to build up centennial business”. Under these strategic guidelines, the Group has further expanded their superiority in the sector of military industry, and began to expand their presence in the sector of products for civilian use.

In terms of the military industry, Aosheng has seized the new round of opportunities for developing the national defense industry, and making all efforts to expand their presence in the sector of military industry, courageous enough to compete with ten major groups directly administrated by the central government, and take market share from them, and succeed to expand the presence in the only one field of XXXX to eight major fields, as extended their space for development and laid solid foundation for their future development. During this stage, Aosheng Group became the only one out many local enterprises of products for military use in Sichuan, which simultaneously boasts of five core qualifications in the military industry, as he only one local military industrial enterprise which retains the core research capability in the military electronics industry. The company has assumed several developments and production assignment of several national defense “trump card” weapons, having overcome various technological huddles, created several records, and made huge contribution to national defense. In 2007, the Air Force called all officers and soldiers to learn from Aosheng Group

whose efforts and dedication in the military industry have made great impact in the military force and even the whole military industry system. Aosheng Group has become a model in the military electronics industry.

In terms of their products for civilian use, under the circumstances of relatively insufficient human, material, financial and other resources, Aosheng has speeded up the development of products for civilian use, with multiple strategies like listing, joint venture and merger and acquisition, as listing helps to settle financial problems for development, and obtain better brand effect, joint venture helps to obtain financial resources, as well as human, natural resources and corporate capability, and merger and acquisition on the other hand can help to access a new field not from scratch. In 2000, to seize the preferential opportunity for SOE's to be listed, and get their cable TV equipment business listed, Aosheng Group take relevant business out of the group, and put it under the newly incorporated company of Sichuan Aosheng Electronics Co., Ltd. In 2001, Aosheng Group and Korean Integrate Company set up a joint venture Dijiaotong Company, which marked their access to the digital TV STB industry; the same year, Aosheng Group purchased Jiangling Cable Work Factory, and established Sichuan Aosheng Group Cable Co., Ltd, which marked their access to the power cable and field cable fields. In 2003, Aosheng Group purchased a listed company "Sichuan Jianfeng", and obtained a financing platform as a listed company (which was renamed "Sichuan Aosheng Group" after reorganization in 2010). In 2004, it purchased the LED encapsulation business of Nanjing Lianchuang Optoelectronics Company, and set up Shenzhen Aosheng Group Optoelectronics Co., Ltd, and made their way to the LED encapsulation industry. In 2005, to ensure timely delivery of Aosheng Group's STB devices, Aosheng increased its capital and share of and became the controlling stockholder of Guangzhou Feitian Electronics Co., Ltd—a professional DVB contract manufacturers. In 2008, Aosheng Group and Zhidao Company established a joint venture—Aosheng-Zhidao Navigation Equipment Co., Ltd, which marked their access to the satellite navigation industry. In 2009, they competed and won the qualifications and assets of Tianren Mobile, and entered into the mobile phone communications industry. Moreover, Aosheng Group has upheld the operation strategy of internationalization from 2006, establishing overseas operating organizations in the Middle East, Western Europe, North America, South America, Hong Kong and other places, to expand their presence in the international market, to sell products around more than 100 countries and regions in the world. in 2011, they earned foreign exchange through exports up to \$ 474 million US dollars.

After endogenous development and a series of merger and reorganization, Aosheng Group has seen rapid development in both military products business and products for civilian use business, which helped to establish the industrial pattern of civil-military industrially-diversification of coordinated development, and the regional layout based on Mianyang, distributed around China and extending around the world. Their revenue from products for military use has exceeded 1 billion, and their business has extended from singular cable TV equipment to digital TV equipment, LED, the Internet of Things, optoelectronic cable, communications, satellite navigation and other industries, with revenue growing from 280 million RMB Yuan in 2000 to 10.68 billion RMB Yuan in 2011, a 38 times increase in 11 years. To this day, Aosheng has successfully shifted from a singular military electronics enterprise to a large scale high tech group of civil-military integration, and has accomplished remarkable economic and social benefits.

During its rapid development, the Group has rather effective control of products for military use in a centralized and unified manner, with unified raw material purchase, centralized material storage, centralized command and dispatching, and same plan, deployment, inspection and assessment. While saving costs, their products for military and civilian use complement each other, with shared technical knowhow and human resources. To date, the Group has been on the express way for civil-military coordinated development.

5.2 Organizational Structure

Organizational structure, which is of great significance to the survival of the organization, is an important concept in the research of the organization development and change (Romanelli et al., 1994). It reflects the organization strategy. It is one of the distinctive characteristics of the organizational evolution as well as one of the core concepts of the punctuated equilibrium theory (Romanelli et al., 1994; Tushman et al., 1985). At the different stages of Aosheng Group's organizational evolution, its organizational structure changed significantly in responding to the changes in its external environment and its business strategies. In simple words, it evolved into M-Structure from the initial relatively simple and highly centralized inverted T-structure, and then into H-Structure, and finally Multi-level M-Structure. The evolution process reflects how the enterprise adapts to the environment, and the organizational structure with different characteristics at different stages proves the "punctuated equilibrium" of the organization development.

Stage I, Inverted T-Structure

At this stage, Aosheng Group produced only a few kinds of products. Being in a complete planning economic system, what Aosheng needed to do was merely to organize the state-assigned production task. Besides, the external environment of Aosheng Group was very simple, too. It formed a direct and efficient inverted T-Structure (see Figure 5- 1), which has both the advantages of the efficient linear organizational structure and that of the functional organizational structure. In the inverted T-Structure, leaders of each level have their own corresponding function departments as staff agencies, e.g. the director and assistant director have planning department, human resources department, finance department and other corresponding departments as staff agencies, so that they can give full play to the professional management.

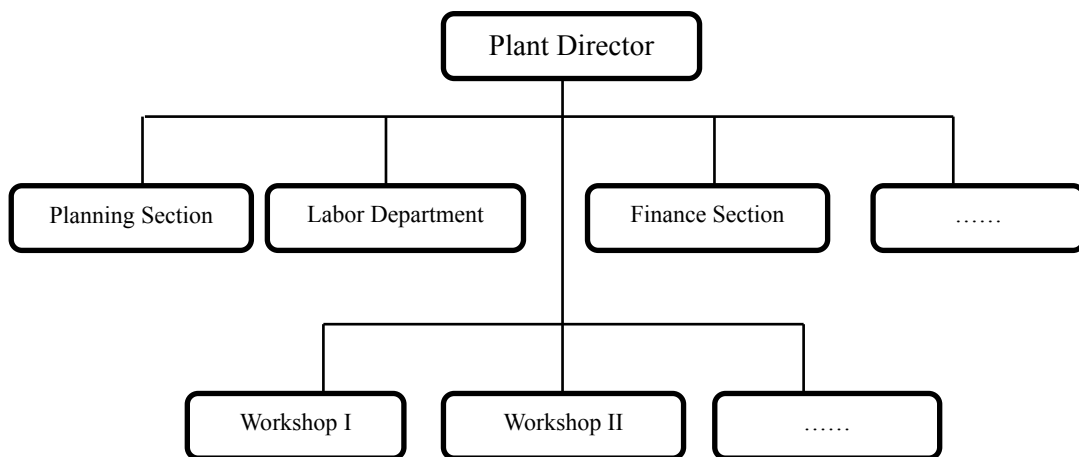


Figure 5- 1 Inverted T-Structure

In addition, each level of the management issues their command in a centralized and unified way, e.g. when the planning department works out a production-related plan, it doesn't directly issue to the production floor, but submit to the director working meeting. If the plan is approved, then it can issue it in the name of the factory. This structure is simple and it is conducive to unify command and clear responsibility. Since each department only needs to focus on what they need to do, it's very efficient, too. At this stage, Aosheng Group's products for military use enjoyed a stable market. Under the condition of a relatively stable external environment, the organization is of great stability and the inverted T-structure guarantees the operating efficiency of the organization. The highly centralized power provides the organization with a great control ability and good operating efficiency. However, it requires a long information transmission route and deprives the lower organizations of the rights to make their own decisions. If the environment of the organizational changes, it is not

conducive to collect information and make appropriate response.

Stage II, M-Structure

At this stage, due to the significant changes in the development strategy of the enterprises, the original inverted T-Structure evolved into an M-Structure with clear features of a business division (see Figure 5-2). As mentioned above, the change that the shift of national focus to economic development brought to the Third-front enterprises was the requirement of seeking their own survival and development. With the development and growth of Aosheng Group's products for civilian use, the product category expands significantly. However, the sales, quality control and the production organization of the civilian products are quite different from that of the military products. In addition, the external environment was no longer the complete planning economic system, but a complex and ever changing external market environment, which together with the hungry demand for lots of feedback led to the urgent need for the change of the original organization with highly centralized power since it could not facilitate the enterprise's development any more.

Aosheng Group adopted the M-Structure (see Figure 5-2), which stresses on the decentralized management of the diversified enterprises and usually establishes more than one division under the headquarters with regard to different business and regions. The specific function departments like R & D, production, purchasing, sales, finance, HR are set in the Business Division; the headquarters are mainly responsible for strategic planning, major investment and audit, which is an important control mechanism over Business Division. Since the decision-making power no longer lies in the hand of the top management, it solves the problem that the highly centralized organizational structure isn't able to respond to the external information promptly. In M-Structure, the business division is the profit center of the headquarters. It has its own products and market as well as management functions. It also has the comprehensive and unified power and responsibility to manage its products. e.g. Business Division A (see Figure 5-2) has its own independent products and markets. It takes the responsibility for the design, production and sales of the products. At the same time, it is accountable to the headquarters for the investment return and the added value of the assets. In M-Structure, the management system with well-defined power and responsibility fully stimulates the enthusiasm and creativity of the management teams under the headquarters. Appropriate separation of power ensures that each division has adequate power to make decision, which is conducive for the entire enterprise to make rapid response to the changes in the external environment.

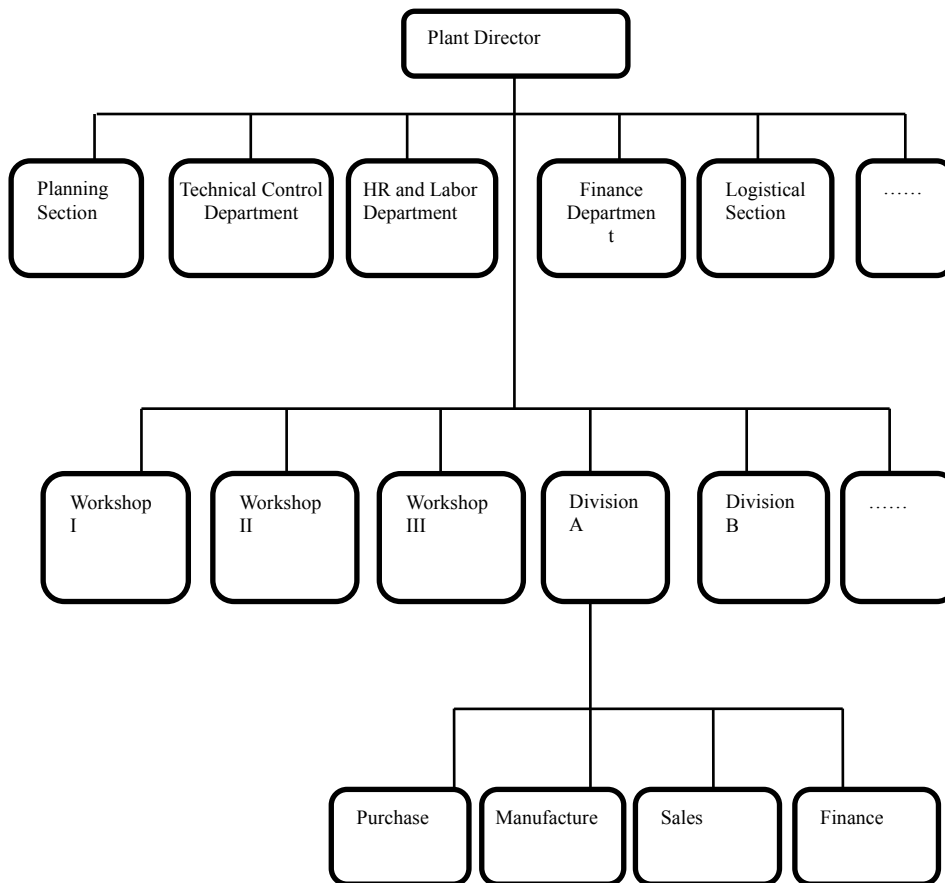


Figure 5- 2 M-Structure

Stage III, H-Structure

By the end of the 20th century, Aosheng Group had gradually established its own general development ideas of “developing products for civilian use on the basis of the products for military use” in balancing the two sectors. Following the development idea, Aosheng spared no efforts to expand its business in the military field. It extended to eight branches from the original single one, and each branch had a certain competitive advantage. As for developing the products for civilian use, it took a number of developing strategies, such as listing, joint venture and M&A to accelerate the development with limited resources. After a series of mergers and acquisitions and restructuring, Aosheng preliminarily achieved the industrial pattern of coordinated development of military and civilian sectors, and realized the strategic layout of taking headquarters as the center, establishing branches both at home and abroad.

Corresponding to the development process, the organizational structure of Aosheng Group changed, too. The original M-Structure gradually evolved into an H-Structure (see Figure 5- 3). In this structure, the whole group looks like a loose coupling body. The headquarters control and restraint its subordinate companies through the general meeting of shareholders, the board of directors and the board of supervisors. Each subordinate company

has its independent corporate capacity, with relatively independent decision-making and management power. The Group's headquarters directly administrate the R&D and the manufacture of the defense-related products, while the civilian use related businesses are run by several Group controlled sub-companies with independent corporate capacity.

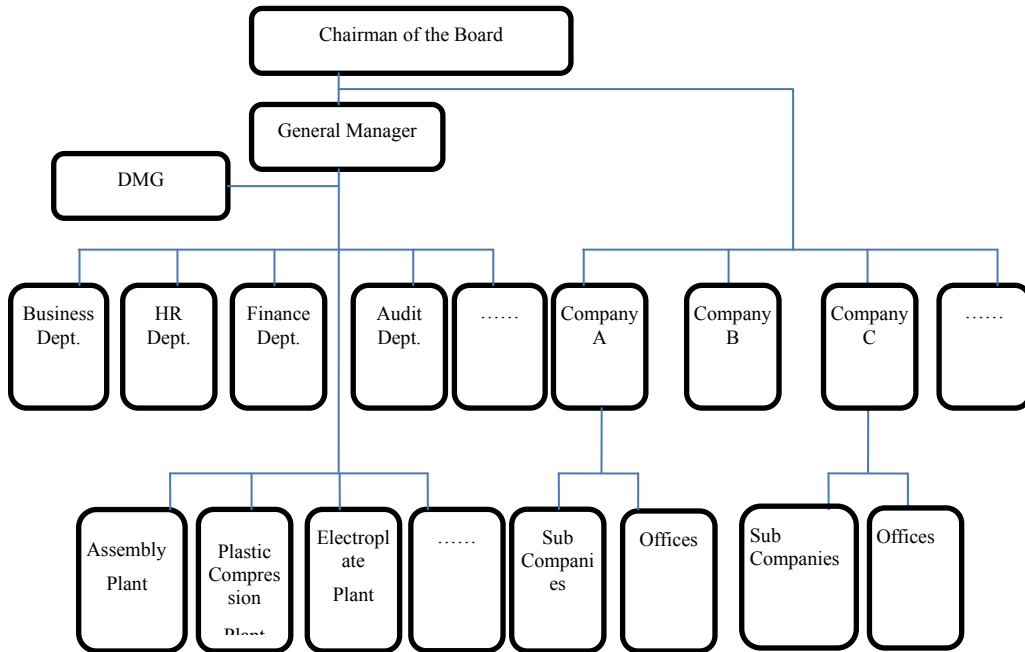


Figure 5- 3 H-Structure

Such structure perfectly presents Aosheng's strategic ideas of “developing products for civilian use on the basis of military-oriented products” at that time. While sticking to the basis of military products, Aosheng Group gave each sub-company which produces products for civilian use the maximum management discretion. Such structure also has the advantages of incentives and risk prevention. In this structure, each sub-company can go public independently to promote their own development by making full use of the external resources; at the same time, they take full responsibility for their own profits and losses. In this way, a "firewall" is placed between the headquarters and the sub-companies.

However, over decentralization of authority is likely to lead the sub-companies to concern too much of their own interests, which sometimes may undermine the interests of the Group as a whole and make it more difficult to coordinate the various sub-companies. The management that is dominated by the economic indicators based assessment may give rise to the problem of hostile decisions among each sub-companies and less concern about the sustainable development of enterprises, which will further affect the implementation of the Group strategy. Besides, having too many sub-companies increases the management difficulties and costs. All these may weaken the advantages of being a corporate group;

therefore, Aosheng Group readjusted its organizational structure at the new stage of development.

Stage IV, Multi-level M-Structure

With the further development of the enterprise, Aosheng Group established its new strategic goal, that is, to deepen the civil-military integration, to integrate the groups' resources and to exploit its advantages of group operation to the full. However, the disadvantages of Aosheng Group's previous H-Structure cannot be ignored. Therefore, Aosheng Group readjusted its organizational structure into a Multi-level M-Structure (see Figure 5- 4) which is based on the independent corporate capacity of each sub-companies.

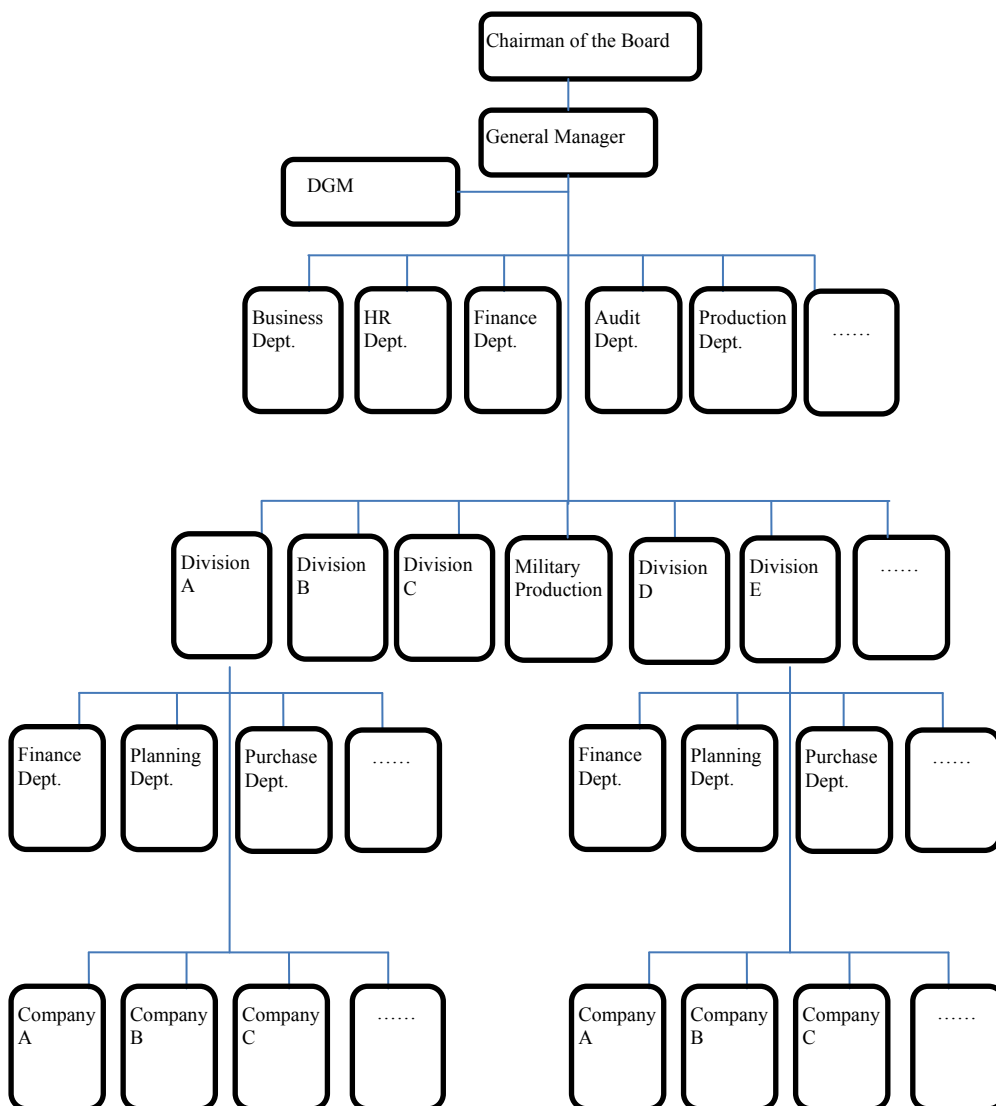


Figure 5- 4 Multi-level M-Structure

In Multi-level M-Structure, the sub-companies are integrated into different divisions according to the extent to which their business are related; the executives of each division take

positions in the sub-companies in order to control and manage them; the group headquarters are responsible for the appointment and removal of the senior management staffs as well as the major investment decisions; the persons in charge of each function department of the headquarters also work as the senior management staffs of each divisions; the group strengthens its control, establishes the mechanism characterized by centralized procurement and unified price negotiation, establishes civilian use research institute responsible for the research and development of the common, basic and key technology and strengthen the overall management and operation of the capital, collecting funds to the headquarters and then investing it into the strategic core businesses so as to exploit the advantages of group operation to the full.

From the previous analysis of Aosheng Group's organizational evolution we can find its patterns. First, the structure is getting more complex, from a simplest inverted T-Structure into a more complex Multi-level M-Structure. The organizational levels keep expanding and the departments have been subdivided into more units. Second, the degree of power centralization keeps dropping; the initial inverted T-Structure is characterized by high centralization of power, but the Multi-level M-Structure of the fourth stage features a relatively high degree of decentralization.

5.3 Organizational Performance

Organizational performance is the key question for organization management as well as organization research. A good organizational performance is the necessary condition for an organization to develop. Organizational performance usually refers to how well an organization completes its tasks in a certain time period, including quantity, quality and efficiency. Currently, there are three major ways to evaluate the organizational performance. The first one is the goal method, which evaluates the organizational performance by examining how well the organization achieves its goals. Number two is the system resource method, which takes the internal and external factors that are necessary conditions for the organization to survive as the evaluation indicators. The third is the supporter method, which evaluates the organizational performance by checking whether the supporters' needs are satisfied since it thinks the function of an organization is to meet numerous internal and external supporters (Dess and Robinson, 1984; Ford and Schellenberg, 1982). Different perspectives lead to the use of different indicators to evaluate organizational performance (Qi, 2011), e.g. profit (Sastry, 1997), investment return and share of market (Burrow and

Berardinelli, 2003), traditional financial indicators (Nkomo, 1987) and etc. In order to better evaluate the organizational performance, it is necessary not to take just financial indicators or to adopt subjective and arbitrary non-financial indicators. We should consider both of them (Qi, 2011); the combination of qualitative analysis and objective indicators can improve the internal validity and reliability of the analysis (Dess et al., 1984; Romanelli et al., 1994; Venkatraman, 1989). This thesis comprehensively evaluates the changes in the organizational performance of Aosheng Group through qualitative analysis of the information collected via interviews and other means. Meanwhile, it uses objective financial indicators to evaluate the organizational performance of Aosheng Group at the four stages. It tries to overcome the arbitrary nature of the qualitative analysis by a mutual authentication of the two ways so as to ensure the validity and reliability of the analysis. This thesis will evaluate the organizational performance mainly from the perspectives of organization development and employee benefits.

Specific to the analysis of Aosheng Group's organizational performance, two questions need considering: First, Aosheng Group is engaged in both military and civilian businesses and there might be trade-off between the two different businesses. Therefore, how to measure the relationship should be considered. Second, when we evaluate the organizational performance of Aosheng Group, shall we evaluate it as a whole, or evaluate the military and civilian business separately? Since Aosheng Group's business consists of two parts, the products for military use and products for civilian use. The markets for the two kinds of products are different in many ways, e.g. the military products are more likely to be influenced by policies while the products for civilian use are more sensitive to the market changes. In order to deeply investigate Aosheng Group's performance changes and how it relates to other factors, this thesis will analyze the performance changes in the military and civilian sectors separately. This thesis also hopes to find out that in the course of Aosheng Group's organizational evolution how the overall performance of the enterprise relates to the organizational change. Based on the separate evaluation of the military and civilian business, we can get the evaluation of the overall performance of the enterprise.

Qualitative Analysis

The greatest strength of adopting financial indicator to evaluate organizational performance is the avoidance of deviation caused by subjective judgment. However, the lack of data is a big problem; besides, a single or a few financial indicators is not able to help generate a comprehensive evaluation on organizational performance. Therefore, this thesis

investigates the changes in organizational performance through qualitative analysis of concerning data, while the financial indicators are used to testify the results of the analysis.

At the first stage, Aosheng went all out to complete its military production task. With sufficient orders, it didn't begin its civilian business. Such planning system has its own disadvantage----the production task is assigned by the higher authority and most profit is turn over to the higher authority, too. Therefore, although there're sufficient orders and huge profit, only a little part is given to the staffs. At the second stage, Products for civilian use started and developed, while the military business declined. Since the investment in military sector brought no reward, the civilian business became the focus of Aosheng Group. With the development of the civilian business, the salary of the staffs concerned was getting higher and higher. Even some staffs in the military sector wanted to work in the civilian sector. At the third stage, the expansion of the civilian business was thwarted. Aosheng failed in many products for civilian use it intended to develop. On contrary, thanks to its persistence, Aosheng took the opportunity of the national upgrade of military equipment. Its military business, after a period of downturn, began to thrive. At the fourth stage, Aosheng achieved a great progress. Having the previous experience, it focused on the development of both the military and civilian business and achieved significant results. Its military business expanded to 8 fields and its civilian business developed rapidly by adopting more than one developing strategies. Besides, a coordinating mechanism that enables civilian and military sectors to share resource and draw on each other's strength was established and remarkable economic and social benefits were achieved. The typical evidence for the organizational performance of each stage is shown in Table 5- 1.

Table 5- 1 Qualitative Analysis of Organizational performance

Stages	Typical evidence for qualitative analysis
Stage I	<ul style="list-style-type: none"> ◆ In the complete planning system, the production tasks were assigned by the government. What the enterprise needed to do was just to organize the production and complete the task as required. ◆ Although there're sufficient orders and huge profit, the higher authority took larger share of the profit. ◆ The military mission was saturated.

<p>Stage II</p>	<ul style="list-style-type: none"> ◆ There're few military orders, the research staffs and workers were out of work, and they had to make a living by running some small business. ◆ A product for civilian use was developed and it was much better than its counterparts. Customers were satisfied with it. ◆ Only a few people participated initially and later the majority of the people were in. ◆ The civilian products flourished and dominated the market.
<p>Stage III</p>	<ul style="list-style-type: none"> ◆ At the beginning, many attempts in developing products for civilian use failed. ◆ The military business was also in a downturn. ◆ Stuck to the strategy of “developing civilian business and maintaining military business”. ◆ Took the opportunity of “military equipment upgrade”, and a variety of self-developed systems and defense-related products were purchased by the military in large quantity. ◆ The military business was on the crest of a wave.
<p>Stage IV</p>	<ul style="list-style-type: none"> ◆ Further expanded the dominant military business and greatly expanded the civilian business. ◆ The military business was expanded to 8 major branches. ◆ The civilian business was expanded to a variety of industries. ◆ Owned five military core qualification and the core scientific research capacity in electronics. ◆ Carried out multiple developing strategies like listing, joint ventures, mergers and acquisitions. ◆ Civilian and military sectors were able to share resources and draw on each other's strength. ◆ Remarkable economic and social benefits were achieved.

In order to evaluate performances at each stage, several steps were conducted as describing below. First, five appraisers were asked to independently give their own evaluations of military performance and civilian performance for each stage, according to the qualitative evidences and the story of Aosheng. Second, all evaluations were collected and compared with each other. If the relative level of evaluations for the four stages were consistent, there would be no big problems. However, the differences like that one appraiser gave the evaluations like “+++ , +, +++++, +++++” while another appraiser gave an evaluation like “+++ , +, +++++, +” were discussed in a seminar organized to achieve consistent evaluations for the fourth stage, until an agreement was achieved. Third, the final consistent evaluations were discussed with senior employees from Aosheng to test whether they reflected the reality. Fourth, the whole

organization performance was derived from the evaluations of military and civilian business. This evaluation was conducted by a small group, under the common assumption that if both businesses showed good performance the whole organizational performance would be good. The final performance evaluations are shown in Table 5- 2.

Table 5- 2 Performance of Military and Civilian Businesses at Different Stages

Stages	Stage I	Stage II	Stage III	Stage IV
Military Performance	++	+	+++	++++
Civilian Performance	+	++++	+++	+++++
Organizational performance	++	+++	++++	+++++

Objective Indicators

This part will adopt some objective indicators to test the reliability of the above evaluations. The purpose is to guarantee the reliability of the evaluations. This test process included follow steps:

(1) The objective data of performance were used to test whether the evaluations of military and civilian performances reflected the real changes. The performances of Aosheng Group's military and civilian markets in terms of the growth rate of the output value were used for this test. Figure5-5 visually shows the annual growth rate of the output value. The performances of Aosheng's military and civilian businesses rise and fall alternately, which is consistent with the alternate changes in its military and civilian businesses. This change rules gave strong support to the evaluations of military and civilian business performances shown in Table 5- 2. For example, in 1985-1990, the civilian performance rose up to a record high level at the beginning and then fell down. At the same time, the military initially had a bad performance but it then dramatically rose up to a record high level when the civilian growth rate dropped to almost "zero". The phenomenon, on one hand, reflects the changing market environment and on the other hand shows how Aosheng Group constantly adjusts its strategies and organization in answer to the changes in the external environment. The early dramatic fluctuation in military performance was mainly caused by the changes in the military demands which are determined by government's policies; besides, the fact that Aosheng didn't have any successful or massive produced products for civilian use at the initial stage also contributes to the fluctuation. On the contrary, the fluctuation in civilian performance was, to a great extent, due to the pressure for survival and the macroeconomic environment. When the military orders decreased sharply and even threatened its survival, Aosheng had no choice but to save itself by developing products for civilian use. In addition, it can be seen from the figure that the growth curves of the military and civilian output values all tend to flatten after

a sharp fluctuation. It indicates that the development of Aosheng Group had embarked on a more coordinated and stable stage. On the one hand, it had strong competitiveness in both military and civilian sectors, and was able to seize market opportunities; on the other hand, it had gradually established a mechanism which enabled the military and civilian sectors to share resource and achieve coordinated development, thus ensuring the mutual support and common development of the military and civilian sectors. This can, from one perspective, support the result of continuous increasing organizational performance of the qualitative analysis.

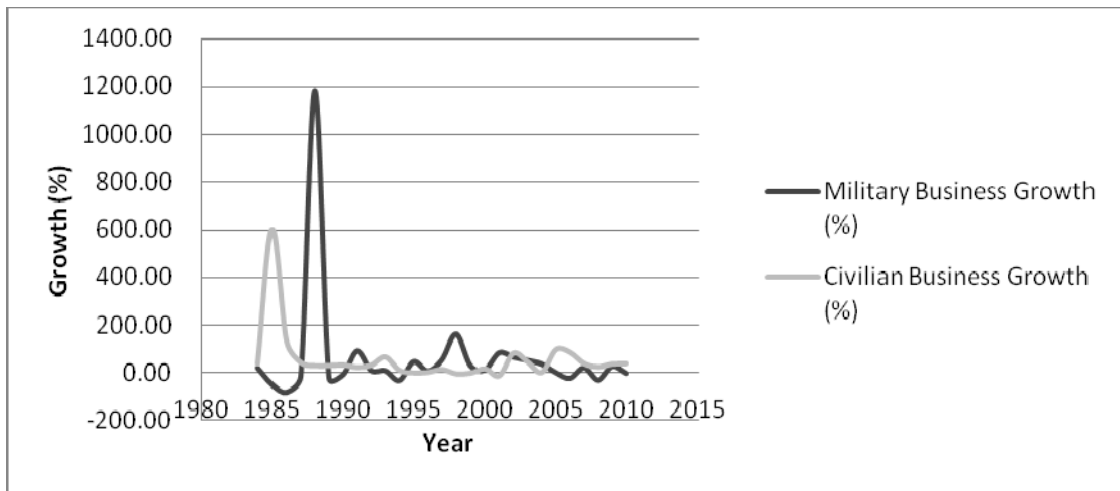


Figure 5- 5 Alternate Changes in Growth Rates of Military and Civilian Output Value

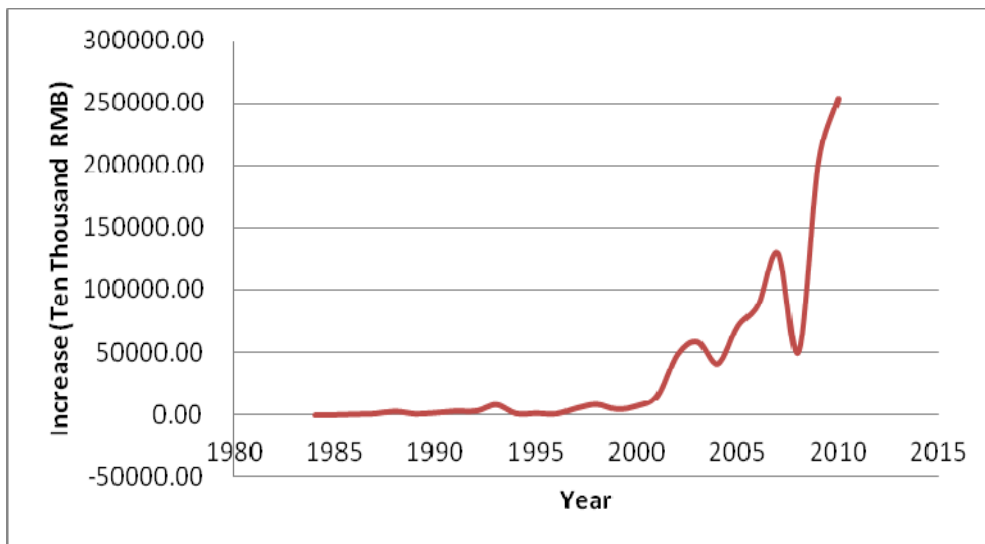


Figure 5- 6 Changes in Annual Amount of Increase of Total Output Value

(2) The data of the annual output value were used to test whether the evaluations of the whole organization performance in Table 5- 2 reflected the true changes. All available of annual output value were depicted as Figure 5-6. This figure visually shows the changes of the amount of increase with respect to the previous year's annual total output value. In general,

the annual output value of Aosheng Group displays an upward trend and grows rapidly at the later period. This rule gave strong support to the continuous increasing trend (see the last line of Table 5- 2) of organizational performance evaluated through qualitative analysis.

5.4 Strategic Orientation

Strategic orientation, referring to the core values and beliefs of an enterprise, as well as the changes in its products, markets and core technology, is one of the core constructs of the theory of punctuated equilibrium (Sastry, 1997). An organization tends to maintain its original model due to the inertia. However, it will have great pressure for changes when the strategic orientation cannot keep up with the environment changes. Given enough pressure for a change, strategic reorientation will take place. This step finished, the organization enters a relatively more perfect stage and a convergent period begins. Therefore, strategic orientation and its change are of great importance to organizational evolution.

Strategic orientation is also a core construct in strategic management (Mintzberg, 1994). Relevant researches hold the idea that strategic orientation is a multidimensional concept, and it can be measured from six dimensions, namely, aggressiveness dimension, analysis dimension, defensiveness dimension, futurity dimension, reactiveness dimension and riskiness dimension (Venkatraman, 1989). Sastry (1997) points out that it can be measured in terms of the features shown by the organization on these factors. Combining the specific condition with the evolution process of Aosheng Group, it can be seen that for Aosheng Group or the similar Third-front enterprises, the changes in the leading as well as the most important strategic orientation are reflected in its balancing of the military business and the civilian business (of course, it can be examined from other aspects, too), and this is of special significance to its organization survival and development. Therefore, this thesis studies the changes in Aosheng Group's orientation mainly through the investigation of its major target markets and products, that is, to study how Aosheng Group balance its military business and civilian business. Next, the changes in Aosheng Group's orientation will be analyzed from two aspects: First is to find out its emphasis on military and civilian businesses at different stages through the qualitative analysis of the collected data. Second is to study its strategic orientation at each stage by examining the proportion of the military and civilian businesses at different stages so as to test the reliability of qualitative analysis.

Qualitative Analysis

Following is a brief introduction to Aosheng Group's balance on military and civilian businesses.

Stage I, the major task for the Third-front enterprises was to produce products for military use to meet the national defense needs. Therefore, the strategy orientation was completely military business oriented and there's no business for the civilian use at all. Stage II, Aosheng suffered from the sharp drop in the demand for military products. In order to survive, it went all out to develop products for civilian use. The strategic orientation was obviously civilian business oriented. Of course, due to its original military background and the needs of the national defense, the military business was still important. Stage III, with the increase of the military demand, the military business was attached more importance. However, considering the limit of the defense market and the lesson learn from the past, Aosheng decided to stick to and increase the investment in civilian business though there're difficulties and frustrations. The strategic orientation was to attach more importance to the military business while continue to develop products for civilian use. Stage IV, after the first few stages of development, Aosheng had formed the strategic policy featuring military and civilian sectors' resource sharing and coordinated development. Aosheng actively exploited its markets in both military and civilian sectors. Besides, Aosheng no longer hovered between military and civilian business, but to stick to its role as a military enterprises and vigorously develop the products for civilian use.

The typical evidence for the strategic orientation of each stage is shown in Table 5- 3.

Table 5- 3 Evaluation of Strategic Orientation at Each Stage

Stages	Typical evidence for qualitative analysis
Stage I	<ul style="list-style-type: none"> ◆ The production tasks were assigned by the government. What the enterprise needed to do was just to organize the production and complete the task as required. ◆ Developed some trial products for civilian use. ◆ Due to the strong military demand, China assigned heavy production tasks for each military enterprise and they all went out to complete their tasks. ◆ Defense markets were Aosheng's definite target, and military products were its whole production goal. ◆ All products were for military use.

<p>Stage II</p>	<ul style="list-style-type: none"> ◆ China began to put forward the policy of converting military-oriented enterprises for civilian use. The departments of the central government in charge also deliberately sent out some message, hoping the military enterprises could sense its intention of developing products for civilian use. ◆ Due to the sharp drop in military order, the enterprise was forced to find a way out. ◆ Since 1978, the situation that the military orders account for all Aosheng's production began to change. ◆ Some products for civilian use were developed by taking advantage of the existing technology and equipment. ◆ Since the 1980s, the government offered Aosheng one-off subsidy and everybody was mobilized to change their ideas. Aosheng stepped on a road of surviving and developing through the development of products for civilian use. ◆ By the 1990s, the civilian business had contributed more than 50% of Aosheng Group's total income.
<p>Stage III</p>	<ul style="list-style-type: none"> ◆ Civilian business developed and gradually entered a rapid development period. ◆ Aosheng kept increasing its investment in military business. For one thing, it wanted to adhere to its sacred mission; for another, it intended to lay a solid foundation for its long-term development. ◆ China was upgrading its military equipment at a large scale, the well prepared Aosheng Group got more and more orders from the military. ◆ Compared with the military business, the civilian sector developed relatively slow. ◆ Put forward the group strategy of "attach equal importance to military and civilian sectors".
<p>Stage IV</p>	<ul style="list-style-type: none"> ◆ The group strategy emphasized on the construction of the system featuring military-civilian coordinated development. ◆ Adopting multiple strategies like listing, joint venture, merger and acquisition to develop military business and exploit a variety of fields of products for civilian use. ◆ The goal that the military and civilian sectors draw on each other's strength, share resources and develop coordinately was achieved.

As for the qualitative analysis, this thesis, adopting the evaluation methods and procedures introduced in Chapter 3, evaluates the strategic orientations of each stage based on the extent to which Aosheng Group focused on the civilian business. First, five appraisers were asked to independently give their own evaluations of the strategic orientation for each stage. Second, all the evaluations were collected by the author and were compared with each

other. Those different evaluations for the same stage were discussed in a seminar until an agreement was achieved. The final results are shown in Table 5- 4. Third, the final results were discussed with four senior management staff of Aosheng Group (2 of them are retired); they all thought that the results were of good reliability since they reflected the reality.

Table 5- 4 Evaluation of Strategic Orientation at Each Stage

Stages	Stage I	Stage II	Stage III	Stage IV
Strategic Orientation	+	+++++	+++	++++

Financial Indicators

In order to avoid being subjective and arbitrary in qualitative analysis, we can use such objective indicators as financial data to test the validity and reliability of the results of qualitative analysis. Based on the stages discussed in previous chapters and the financial data in 1984 -2010, we worked out the proportion of products for civilian use in the annual total output value in these years, which is taken as an indicator to measure how much importance was attached to the civilian business by the Group. The data before 1983 was inaccessible. With the relevant data, we can draw Figure 5-7, which displays three distinct stages with the alternating trends of up, down and up. At stage two, the Group preferred to develop the products for civilian use at the strategic level and the products for civilian use accounted for an increasing proportion of the Group's total output value. At stage three, the proportion of the products for civilian use declined significantly. At stage four, the proportion of the products for civilian use increased significantly. The changing trends perfectly match the results of the qualitative analysis, proving the validity and reliability of the results.

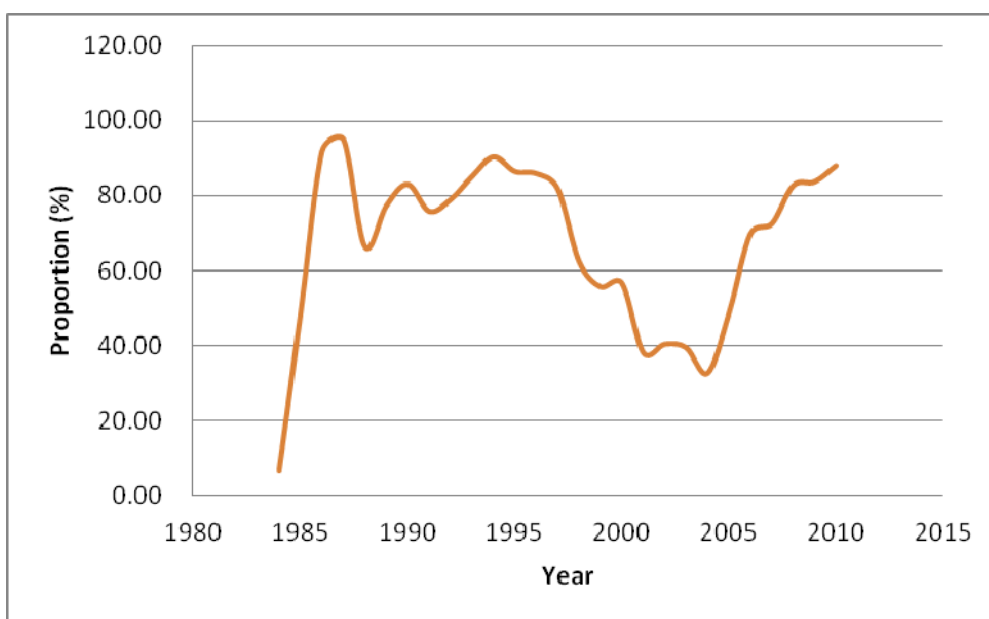


Figure 5- 7 Proportion of Civilian Products in Annual Total Output Value

5.5 Pressure for Changes

The pressure for changes usually comes from the survival pressure brought by poor performance and/or the expected needs for changes. It may also result from the continued poor performance or the invalid strategic orientation which are caused by the mismatching of the organization behaviors (Sastry, 1997). Performance pressure here refers to the urgent need for organizational changes resulting from the continued poor performance or the expected good performance. The expected needs for changes here refers to the fact that whether an organization needs changes based on its judgment on the environment so as to better adapt to the environment (Tushman et al., 1985). The heavier the pressure for change is, the more likely a strategic reorientation will be and eventually lead to a substantial organizational change. This thesis evaluates Aosheng Group's pressure for changes of each stage by combining the performance pressure and the needs for changes. Specifically, it firstly evaluates the pressure for changes resulted from the expected needs for changes through qualitative analysis of the relevant data; secondly, it testifies the qualitative analysis by calculating the financial indicators.

Qualitative Analysis

Stage I, in the complete planning system, the enterprises didn't need to worry about the orders or the markets. What they need to do was just to, following the established pattern, organize production, expand the size and improve the production efficiency. Therefore, there's little pressure for changes. Even if there's any, it would just be some technical modifications like production optimization. Stage II, the enterprise was in trouble and its staffs worried about their lives. The enterprise was bound to fail if it didn't change and the pressure for changes was extremely heavy. Stage III, the civilian business had developed to a certain degree and the military market was gradually getting better, so the pressure for changes decreased when compared with the previous stage. Stage IV, Aosheng gradually formed its development model featuring civil-military coordination and both its military and civilian business had achieved continued development and growth. It expanded its markets in both the military and civilian sectors, got better performance, so the pressure for changes at this stage further decreased when compared with the previous stage. The typical evidence concerning the pressure for changes of each stage is shown in Table 5- 5.

Table 5- 5 Evaluation of Pressure for Changes at Each Stage

Stages	Evidences
Stage I	<ul style="list-style-type: none"> ◆ It's a hard pioneering stage. ◆ In a complete planning system ◆ The orders were assigned by the government, what the enterprises needed to do was going all out to complete the production tasks.
Stage II	<ul style="list-style-type: none"> ◆ Due to the sharp drop in military order, the enterprise was forced to find a way out. ◆ The first trial in developing products for civilian use failed due to the lack of experience. ◆ All the staffs worried about their lives. ◆ The government gave Aosheng one-off subsidy, and it had to develop by itself. ◆ It's hard for Aosheng to step forward; the enterprise came to a crossroad of life and death.
Stage III	<ul style="list-style-type: none"> ◆ Civilian business developed and gradually entered a rapid development period. ◆ Giving up the military business would benefit the civilian business. ◆ Aosheng decided to maintain its military business and continue to invest. ◆ A variety of products for civilian use didn't match the expectation. ◆ The staffs in the civilian sector wanted to go into the military sector.
Stage IV	<ul style="list-style-type: none"> ◆ Aosheng realized that it is not simply an either-or choice question to decide on the "military" or the "civil"; it is not a matter whether or when to give up which one, either. ◆ Established the development strategy of "taking the military business as foundation and pursuing the development by exploiting the products for civilian use." ◆ Expanded the military business. ◆ Accelerated the development by adopting multiple developing strategies like listing, joint ventures, mergers and acquisitions.

Adopting the evaluation methods and procedures introduced in Chapter 3, five appraisers were asked to give their own evaluations independently based on how heavy the pressure that Aosheng Group has at the stage according to the organized qualitative data. Then, their evaluations were collected and compared. Any differences were discussed in a seminar to get consistent evaluations. The final results (See Table 5- 6) were discussed with four senior managers of Aosheng Group (2 of them are retired); they all thought that the results were of good reliability since they reflected the reality.

Table 5- 6 Evaluation of Pressure for Changes at Each Stage

Stages	Stage I	Stage II	Stage III	Stage IV
Pressure for Changes	+	+++++	++++	+++

Performance Pressure

In this section, financial data will be used to test whether the above qualitative evaluations reflect the reality. Generally speaking, when the growth of the organization's

financial performance is slowing down or a continuous low performance appears, the organization will face the pressure for changes; in addition, when the growth of the financial performance is negative, this pressure will become even large, leading the organization to re-examine its strategic orientation and resulting in the strategic reorientation. Although the performance pressure probably comes from the previous poor performance, it may also result from the expectation for a good performance in the future. Due to the limited data, this thesis will mainly discuss the pressure caused by poor performance. Following steps were used to calculate the indicators of performance pressure. First, we calculated the average growth rate of the total output value in 1984-2010 (the financial data before 1983 were usually inaccessible); then we subtracted each year's growth rate from the average growth rate; the bigger the difference is, the heavier the performance pressure the enterprise has. Figure 5-8 visually shows the annual performance pressure calculated above.

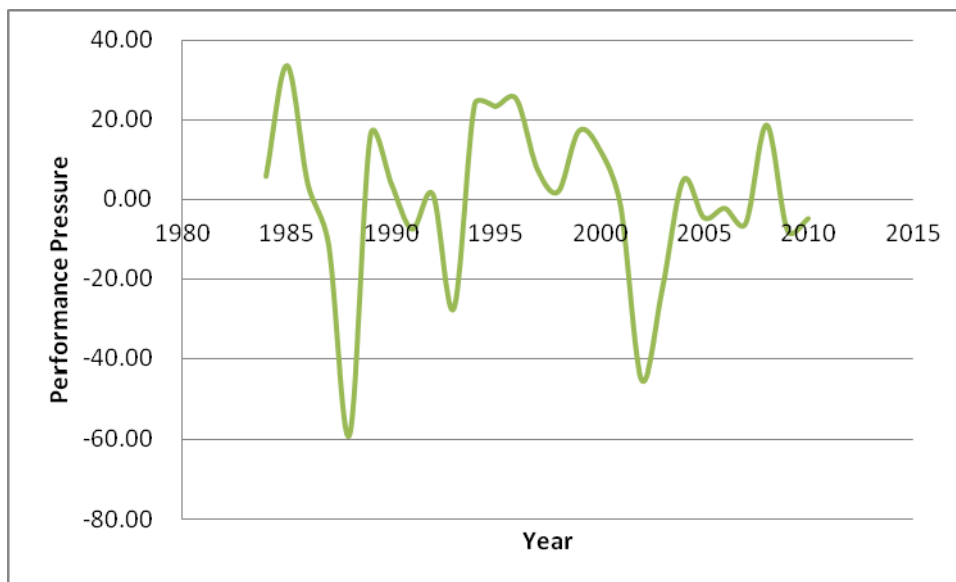


Figure 5- 8 Curve of Changes in Annual Performance Pressure

The figure gave support to the evaluations in Table 5- 6. According to the stages of Aosheng Group's development, the performance pressure index shows the changes in the performance pressure of the late three stages. It can be seen from the figure that (1) the performance pressure is fluctuating, (2) the amplitude of fluctuation tends to be smaller, (3) the performance pressure of the three stages shows distinct features, (4) the performance pressure at stage two and three is generally heavier than that of stage four. The trend is consistent with the quality analysis, to some extent. Of course, financial performance is only one of the resources of change pressure. So, there are no sufficient reasons to assume the performance pressure should be consistent very highly with the evaluations from qualitative analyses. It will be accepted if they are not sharp contradictory with each other.

5.6 Organizational Inertia

To reach a formal goal or to implement activities of an organization, a relatively stable condition is required. The institutionalized and standardized process will lead to organizational inertia (Barnett and Pontikes, 2008; Hannan and Freeman, 1984; Kelly and Amburgey, 1991). A certain degree of organizational inertia is conducive to maintaining the continued existence and development of the organization. This thesis regards organizational inertia as a concept which has two different facets, the one stresses on “the fixed model that is unlike to change” while the other emphasizes “self-reinforcing and path-dependence” (Bai, 2009). Scholars have put forward many relevant concepts, such as cognitive inertia (Hodgkinson, 2003), action inertia (Sull, 1999), structural inertia (Hannan et al., 1984; Schaefer, 1998), and etc. Tushman & Romanelli(1985) and Sastry(1997) point out that organizational inertia refers to the curing power of the existing organizational patterns and the relationships of stakeholders embedded in the existing organizational patterns, which expands into an institutionalized and standardized commitment of the internal members; organizational inertia will not hinder the incremental organizational change, but will hinder the radical organizational change; a high degree of organizational inertia will weaken the ability of the organization to evaluate its environment, thus hindering the organization's substantive changes in its social relations and structures; the possible assessment is to measure it through the evaluation of the relationship between the organization and the related organizations or measuring the strength of the organizational culture and norms. Researches reveal that the sources of the organizational inertia consist of performance, size and dependence, which can be used to evaluate organizational inertia (Dean Jr and Snell, 1991). Generally speaking, in the event of poor organizational performance, management staffs will be faced with the pressure to change the current organizational practices, meanwhile, the poor organizational performance will signal its needs for an organizational change while the good organizational performance will lead the members as well as the management staffs of the organization to believe that the current activities of the organization mode is reasonable, and thus there is no motivation to do any changes (Dean Jr et al., 1991). The bigger the organization is, the greater the inertia will be and the longer the history of the organization is, the greater the inertia will be (Ranger-Moore, 1997).

Based on the relevant theory (Hannan et al., 1984) and researches (Dean Jr et al., 1991; Guillén, 2002; Hodgkinson, 2003; Schaefer, 1998) on organizational inertia, this thesis adopts

a qualitative method to evaluate the inertia of Aosheng Group at different stages. The inertia at the first stage was the greatest one. This is because Aosheng didn't need to worry about the market competition in the complete planning system; what it needed to do was merely to organize its production; besides, the environment was also relatively stable, therefore, the organization tended to maintain its activity patterns. At the second stage, the military orders decreased dramatically and the organization was faced with the problem of survival; the previous active patterns were challenged and the organization was strongly motivated to change its active patterns in order to survive, therefore, the organizational inertia was low. With the development of the organization, the success in the products for civilian use and the recovery of the defense market, the organization had adjusted to a good development pattern and the organizational inertia increased. At the fourth stage, Aosheng's expansion of its market share in both the civilian and military sectors, the implementation of the development strategy of "developing the military and civilian businesses in coordination" and the establishment of the mechanism for technology and talents sharing led to a "flexible and coordinated" cultural atmosphere, therefore, the organizational inertia was low. The evidence for the qualitative analysis is presented in Table 5-7.

Table 5- 7 Evaluation of Organizational Inertia at Each Stage

Stages	Evidences
Stage I	<ul style="list-style-type: none"> ◆ Sufficient orders ◆ Good performance led to great organizational inertia. ◆ The size of the enterprise kept expanding.
Stage II	<ul style="list-style-type: none"> ◆ Due to the sharp drop in military order, the enterprise was forced to find a way out. ◆ All the staffs worried their lives. ◆ The staffs in the civilian sector wanted to go into the military sector.
Stage III	<ul style="list-style-type: none"> ◆ The development of the products for civilian use gave rise to a question: is it necessary to continue the military business? ◆ A variety of products for civilian use didn't match the expectation.
Stage IV	<ul style="list-style-type: none"> ◆ Simultaneously expanded the military and the civilian businesses. ◆ Managed and controlled by the Group ◆ Military and civilian sectors shared the technology and talent resources to a great extent so as to reduce the cost.

This thesis will give more emphasis on the connotation of the organizational inertia of "to what extent the organization depends on the practices and existing active patterns". Adopting the methods and procedures introduced in Chapter 3, following steps were conducted to achieve consistent evaluations for each stage. First, five appraisers were asked to read the organized qualitative data about organizational inertia, and independently gave their

evaluations without discussing with each other. Second, these independent evaluations were compared to identify the differences which were discussed in a seminar to achieve a consistent evaluation (see Table 5- 8). The final results were discussed with four senior management staff of Aosheng Group (2 of them are retired); they all thought that the results were of good reliability since they reflected the reality.

Table 5- 8 Evaluation of Organizational Inertia at Each Stage

Stages	Stage I	Stage II	Stage III	Stage IV
Organizational Inertia	+++++	+	++	+++

For the measurement of organizational inertia, quantitative test was not used to test the results of qualitative analysis. The main reason is that no quantitative data which can be used to measure organizational inertia. In fact, existed researches just examine the resources of organizational inertial instead of measuring it directly (e.g. Snell, James, and Dean, 1994; Stainback, Tomaskovic-Devey, and Skaggs, 2010). From the test of evaluations of organizational performance, strategic orientation, change pressure and organizational inertia, it is reasonable to accept the reliability of qualitative evaluations about organizational inertia.

5.7 Summary

In this chapter, we first divided the organizational evolution of Aosheng Group into four stages and each stage was briefly introduced. Based on the division of the four stages, the changes in organizational performance, strategic orientation, pressure for change, and organizational inertia at each stage were analyzed mainly through qualitative analysis together with the relevant quantitative indicators such as financial data. The evaluation provides data for the next analysis.

Chapter 6: Patterns of Evolution

As described in Chapter III, in accordance with the selection criteria of "being typical" and "being successful", Aosheng Group has been selected as the study case. By doing so, I aim to get insight into the rules of the development of Third-front enterprises. Some theoretical propositions about the organizational evolution of successful Third-front enterprises will be proposed through the case of Aosheng Group's organizational evolution. In previous chapters, the macro-environment and many internal factors within the organization, including strategic positioning (this concept and strategy orientation are used interchangeably), organizational structure, organizational performance, change pressure, and organizational inertia have been analyzed. The changes of these factors between different stages have been described from the longitudinal perspective. However, these isolated analyses only reveal changes of these factors, not yet reveal their interconnections which influence the organizational evolution process of Aosheng Group. Therefore, in this chapter the relationships among these factors will be explored based on the above evaluation results. Then, the corresponding propositions have been proposed. At first, the evaluation results in Chapter 4 and Chapter 5 are summarized in Table 6- 1 for following analyses.

Table 6- 1 Evaluation Results for Four Stages of Aosheng Group

Constructs and dimensions		Stage 1	Stage 2	Stage 3	Stage 4
Macro environment	Policies and their changes	++	+++	++++	+++++
	Macro economy	++	+++	++++	+++++
	Military market	++++	++	++++	+++
	Civilian market	+	++	+++	++++
Strategy orientation	Importance of civilian business	+	+++++	+++	++++
Performance	Organizational performance	++	+++	++++	+++++
	Military performance	++	+	+++	++++
	Civilian performance	+	++++	+++	+++++
Change pressure	Urgency of change	+	+++++	++++	+++
Inertia	Dependency on routines	+++++	+	++	+++

According to the punctuated equilibrium theory (Romanelli et al., 1994; Sastry, 1997; Tushman et al., 1985), the reorientation period of organizational evolution is very important because it breaks a longer convergent period and leads the path to a new stage which is qualitatively different from the former stage. Therefore, the analysis in this chapter start from the strategic positioning followed by the logical relationships between strategy positioning and other key concepts referencing to punctuated equilibrium theory (Romanelli et al., 1994; Sastry, 1997; Tushman et al., 1985). Based on the above principles, the changing relationships among the variables in Table 6- 1 are carefully examined to discover the rules which may exist in the organizational evolution of Aosheng Group. The important patterns and rules emerged from Table 6- 1 are proposed as theoretical propositions which reflect important evolution mechanism of the Third-front enterprises.

6.1 Roles of Macro Environment

In Chapter IV, we found that the macro environment of Aosheng were always in dynamic changing, from the establishment of Aosheng to the present. Political environment, economic environment and market environment have shown they were changing stage by stage. The stages of the change of macro environments and the evolution of Aosheng Group are summarized in Table 6-2.

Table 6- 2 Stages Comparison between Macro Environment and Organizational Evolution

Stage	National policy	Provincial policy	Macro economy	Military market	Civilian market	Aosheng's evolution
First	1949-1978	1950s-1970s	1950-1976	1950-1981	1950-1976	1950-1981
Second	1978-1990	1970s-1990s	1976-1994	1981-1994	1976-1994	1981-1992
Third	1990-2001	1990s-2000s	1994-2002	1994-2003	1994-1999	1992-2003
Fourth	2001-	2000s-	2002-	2003-	1999-	2003-

Before analyzing the roles of macro environment, one question that why the seemingly different time periods can be compared should be answered. Two important reasons will be given below. First, the data in Table 6- 2 shows considerable consistency. In order to see this consistency more intuitively, the time periods are vividly shown in Table 6-1 which shows that the consistency is considerably high. The consistency will be higher if we exclude the influence of using decade as the units to divide time periods of provincial policy. We can also think about this from another perspective that if the unit is changed from year to decade, the time periods will be no differences. Second, the differences between the time periods of these

variables are too small to influence the rules emerged from the whole process of several decades. We know that the measurement errors based on the same unit may have different influences on different researches in different research fields because their research objectives are very different. For example, when conduct researches on the changes of stock prices, day is always used as time unit, even minute is often used for researches on high frequency trading; for historians who are interested in the history of China, century may be much more proper to be used as time unit than day; while those biologists who focus on the evolve history of ancient creatures always use several million years as time unit. The current research aims to examine the evolution process of Aosheng Group; the difference of a few years will be insignificant. In conclusion, though these time periods show some little differences, a good consistency can be found between these environmental changes and stages of organizational evolution of Aosheng.

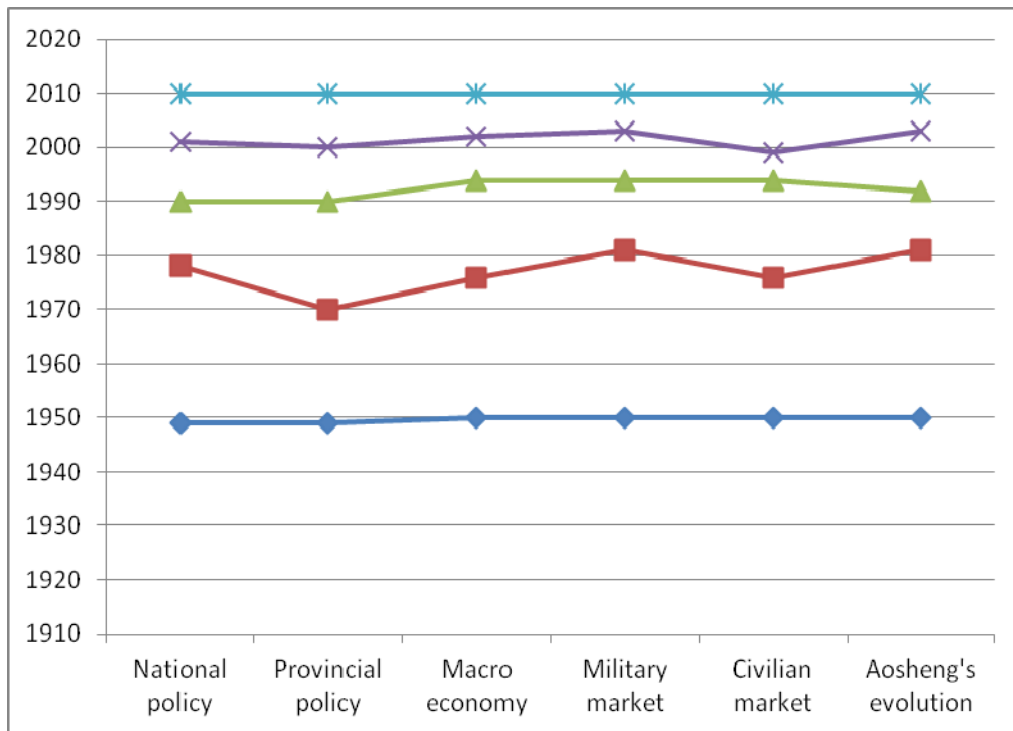


Figure 6- 1 Comparison of Time Periods

The strategic positioning is a concentrated expression of the organization's reaction to environmental changes. Only when the organizational strategy and the external environment match with each other, can the appropriate organizational activities achieve the established results. For Aosheng group, as mentioned above, its strategy orientation is reflected primarily in how much attention is given to its civilian business. Thus, the importance of civilian business is used to measure strategy orientation in Table 6- 1. Through comparing the dimensions of macro environment and strategy orientation, we can see: (1) the more favorable the civilian

market environment, the more attention Aosheng Group pays to the development of products for civilian use, its strategic positioning and civilian market changes in the environment showed a highly consistent change trend; (2) the better the macroeconomic environment, the more Aosheng focus on the development of products for civilian use, its strategic positioning and the macroeconomic environment change in a consistent trend; (3) the more the macroeconomic policy and supporting policy are favorable, the more attention the Aosheng pays to the development of products for civilian use. For example, in the second evolution stage started at the beginning of the reform and opening up, reform and opening up policy drove the rapid development of the national economy, and promoted the expansion of the civilian market, thus provided a good opportunity for the development of products for civilian use for Aosheng Group; On the other hand, the sharp drop of the military orders forced Aosheng Group to emphasize civilian business program. This kind of connection shows that when the organizational environment changes, strategic positioning changes accordingly.

The analysis of the relationship between macro-environmental dimension and strategic positioning can offer more in-depth insight. The most direct influence come from external environment is the market pressure derived from market changes. This is reasonable considering that Aosheng is an enterprise. And this is also supported by the data in Table 6- 1. The data show us that the changes of the military market and the civilian market present alternating ups and downs. In order to describe this change rule vividly, the data about military market and the civilian market are plotted as Table 6-2. The figure shows that the civilian market is relatively worse when the military market tends to be more positive. Of course, this is only a relative trend, because it also reflects how top management team members understand these market changes. We can see that when the military market is not good and the civilian market demand increases, the Aosheng pay more attention to develop civilian business. While, when the civilian market is not good but military markets demand increases, Aosheng adjusts its strategic direction accordingly. Therefore, its strategic positioning shows a high degree of consistency with the change of civilian market, and an inverse relationship with the change of military market. Aosheng balances its strategic choice of “military or civilian” which is, to some extent, influenced by the change of market environment.

Considering the nature of the Chinese military system that it is a closed and planned system, the observed connection between the changes of the market and Aosheng's strategic choice actually reflects the important impact of national policies on Third-front enterprises. For Third-front enterprises, their products are closely related to the national

security, so the national policies have more direct, greater impact on its organizational evolution. The start and end nodes of the four stages of Aosheng Group's organizational evolution and the start and end nodes of the national political environment change stages are very consistent, if we take the hysteresis effect of the business-related policies into account. There are many reasons for this phenomenon. The first and foremost reason is the military background of the Third-front enterprises. For most Third-front businesses, the military business is its lifeline (at least in the early and mid-period in their lives). National policy dominates the ups and downs of military enterprises because of the very mandatory planned system of military procurement. After several years of implementation of military and civilian integration, a considerable part of Third-front enterprises have developed their civilian businesses in varying degrees, but they are not willing to give up more lucrative military business. Both for national security needs and corporate self-interest, most of them want to be able to seize any opportunities come from military demand growth. But on the other hand, these Third-front enterprises face the contradiction between their development goals and the actual situation. Enterprises must pursue survival and sustainable development as its long-term goals. However, like Chinese state-owned enterprises in other industries, most of the Third-front enterprises have the defect of "too large" that an enterprise is a microcosm of a society. They have undertaken a variety of social responsibility which should be undertaken by governments. So, these enterprises must take appropriate solutions to ensure their survival and the lives of all employees in the doldrums period. Therefore, when the national policies change directionally Third-front companies must adjust their strategic directions primarily reflected in the continuous adjustment between the military and civilian.

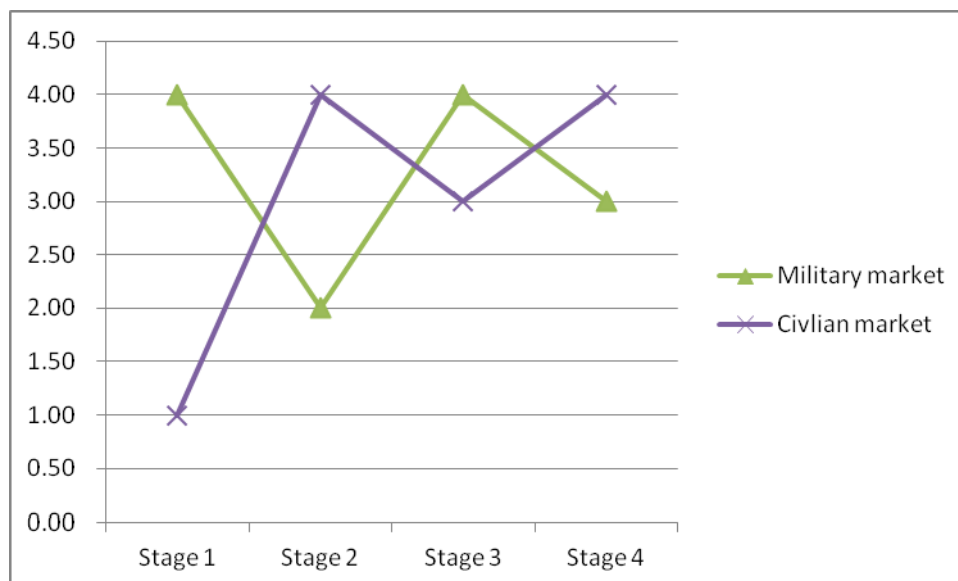


Figure 6- 2 Military Market and Civilian Market

This finding is consistent with the proposition that the change of environment makes organizations break the equilibrium status of one convergent period and leads to a short reorientation period in which the patterns of organizational activities change qualitatively (Sastry, 1997). The finding is also consistent with those conclusions of other studies which address the importance of environment on organizational change (Koberg, Detienne, and Heppard, 2003) and the idea of coevolution of environment and organizational strategy (Tan et al., 2005). Here, one point must be addressed that the national policy dominates the change of environment in the process of organizational evolution of Third-front enterprises. So, the Third-front enterprises as other enterprises and social organizations must be influenced by macro environment, but the strongest and most powerful factors are those political factors especially the national policy.

The data in Table 6- 2 also inspire us that the national policy put decisive effect on the organizational evolution of Aosheng, through provincial policy, macro economy, and military and civilian market. Based on the discussion above, the following proposition is proposed

Proposition 1: Macro environment influence the organizational evolution process of Third-front enterprises and decides their evolutionary process; the political factors especially the national policy dominate the organizational evolution process of Third-front enterprises.

6.2 Relationships among Internal Factors

Macro environmental factors has very important impact on the organizational evolution of the Third-front enterprises, to some extent determines the stages of their development. However, environmental factors considered herein only provide necessary but not sufficient conditions for organizational evolution of Third-front enterprises. Many factors within the organization have very important significance for the process and outcomes of the microstructural organizational evolution. In this section, I will take the internal perspective to analyze the process of organizational evolution of Aosheng, and propose some relevant propositions.

6.2.1 Strategic Orientation and Organizational Performance

The alignment (sometimes using fit or match) between strategic positioning and their environment has a decisive role to organizational performance (Venkatraman and Prescott, 1990); it is also a necessary prerequisite to determine organizational sustainable development

and evolution. When make strategies, organizations usually take environmental factors into consideration, including the general environmental factors and task environment factors (Bourgeois, 1980). Let's examine Aosheng in detail. In the first stage, under the completely planned system of military products, the main task of Aosheng was to complete the military tasks given by central government or the Central Military Commission, especially facing the tensions of international political and military situation. In the second stage, Aosheng suffered significant decrease of performance caused by massive reduction of military orders and related demands. Although Aosheng Group started to develop and produce civilian products, the infancy civilian business cannot make up the losses from the reduction of military orders. As the importance of civilian business became a kind of share understanding, more and more resources were put into civilian business for pursuing the survival of Aosheng. In the third stage, Aosheng Group began to implement the development strategy of the military-civilian coordination to better match the change of the military market and the development of civilian market. Aosheng Group achieved good organization performance supported by this kind of "walking on two legs" strategy. In the fourth stage, Aosheng Group further promoted military and civilian integration strategy and accumulated more experience to establish an effective management and control system at the Group level to balance the military and civilian business. This system promoted the expansion of its military and civilian business and achieved more impressive organizational performance.

Follow the above qualitative analyses, the data in Table 6- 1 can give a more vividly description of the connection between environment and strategy. Here, the concept of alignment is used for this connection. In order to get the overall evaluation of the alignment between environment and strategy, the average of the macro-environmental dimension is calculated, then, the absolute value of the difference of the average value and strategic positioning value (the importance of civilian business) is used to measure this alignment. Apparently, the less the absolute value, the better the alignment is. In order to change this direction, the result of 5 subtracting the above absolute value is used as the final result of strategy and environment alignment. This alignment and organizational performance are depicted as the graphs shown in Figure 6-3.

This figure shows that the better the alignment, the better the organizational performance is accordingly. Environmental strategic alignment and organizational performance show a considerably consistent variation. The connection demonstrates that organizational performance is not decided only by the strategic positioning, instead the match between

environmental and strategy has much more power to predict organizational performance. This is consistent with traditional strategic management perspective (Tan et al., 1994; Venkatraman et al., 1990). One may question the lower performance coexists with better alignment in the first stage shown in the figure. Yes, this is different from the change trend in the next three stages. I think that this is caused by China's special political environment at that time. As mentioned earlier, the Third-front enterprises have been entirely in planned system. In the first stage, Aosheng had to try best to produce military products, without other choices. They may achieve high efficiency and good effect. However, the profits and the allocation of resources were completely in planned system, the operation of the entire organization was followed superior instructions. Therefore, the organization had no right to improve the income level of employees. From the view of organizational development and the interests of employees, it is reasonable to draw conclusions of low organizational performance at that time.

Thus:

Proposition 2: Third-front enterprises must strive to adjust its strategic positioning in order to better adapt the environment change, so as to obtain good performance; the strategic environment alignment is an important mediating variable in the relationship between strategy and environment and organization performance, this is particularly important for Third-front enterprises.

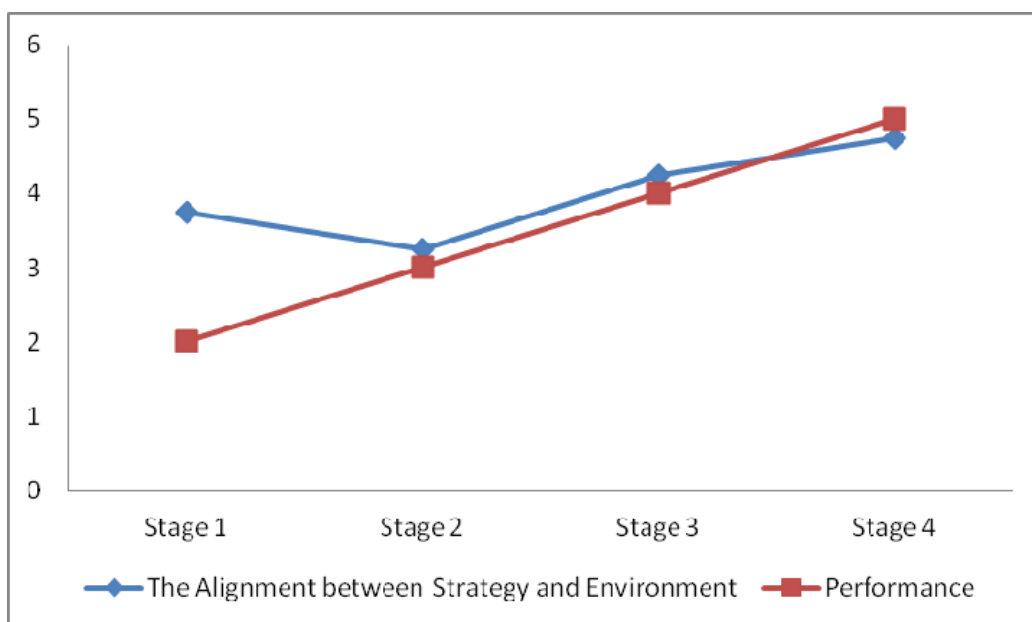


Figure 6- 3 Performance and Alignment between Environment and Strategy

6.2.2 Organizational Performance, Inertia and Change Pressure

Good performance is a necessary condition for sustainable organizational development. Extensive researches have argued that performance has a tight connection with organizational inertia and change pressure. These connections will be analyzed based on the data in Table 6-1 using Aosheng as the case.

When organizational performance gradually increases from the second stage (from 3 to 5), and the corresponding pressure for change is slowly getting smaller (from 5 to 3). When facing better performance, organizations tend to strengthen its current patterns of organizational activities, and thus have no incentive to discover and find possible alternatives and optimized patterns. Under this context, organizations face less pressure to change, and show a greater organizational inertia tending to keep the current activities patterns. For example, in the first stage, the military business was good, Aosheng faced less pressure to change; in the second stage, despite the performance of civilian products was becoming better and better, the poor performance of military business caused the great increase of the change pressure; in the third stage, a substantial increase of the military business performance made the change pressure decline; in the fourth stage, the military performance and civilian performance have been better and better, accordingly the change pressure also fell more.

The data also show that organizational inertia and organizational performance connect with each other tightly. The better the organizational performance, the greater the organizational inertia is. When organizational performance is good, the expectations of pursuing good performance will strengthen the currently activities patterns, so that the organizations have a greater inertia; when facing poor performance, the organization may suspect the current patterns of the organizational activities, and actively look for alternative activities patterns, so that the organizational inertia gradually become smaller and smaller. For Aosheng Group, when poor organizational performance threatened the survival of the organization, the lives of staff cannot be guaranteed, the organizational inertia is smallest; with the gradual improvement in organizational performance, the organization and its members may perceive that the current activities patterns may lead to better performance, so that organizational inertia became stronger and stronger slowly. Examined from the military and civilian business separately, the organizational inertia connected with the military performance more tightly. When the military performance is better, organizational inertia is relatively larger. When the special nature of the Third-front enterprises is taken into account, it is easier to

understand that this relationship is not purely linear. Third-front enterprises only produced military products in early period of their history. This background has a deep-rooted influence on employees' values, corporate culture, and so on. In many cases, employees pursue jobs in military departments not only for the simple pursuit of economic interests, but out of the psychological needs of a certain social role, because the jobs in military departments mean higher sense of social accomplishment. This is true especially in those Third-front enterprises with long successful history. Even now, the staffs of the Aosheng are usually more willing to work in the military sector. Therefore, the performance of the military business has a greater impact on the organizational inertia. Civilian products business originally existed as amateur production activities cannot replace the basic status of military business, even if it had been the straw to save Aosheng Group. Besides, in the organizational structure of Aosheng Group, the military department has always belonged to and managed directly by the Group's headquarter, while other management forms like holding shares are used to manage civilian departments. Therefore, civilian performance has relatively smaller impact on organizational inertia.

Organizational inertia and pressure for change must have close connection and relationships. Examining from their definitions, the former is based on the cognitive acceptance of the current organizational activities patterns and modes. This kind of cognitive acceptance means and requires a force to maintain the existed patterns. While the latter is a mixture of skepticism and challenges of the current organizational activity patterns, tends instead to use another alternative pattern to replace the current activities pattern. Therefore, in essence, the two are fighting each other, mutually contradictory. In terms of Aosheng, we can see from Table 6- 1, the relatively lower pressure and relatively higher organizational inertia are closely linked.

Thus:

Proposition 3: In the organizational evolutionary process of Third-front enterprises, the performance of military business has more significant effect on organizational inertia and change pressure; organizational inertia is a key mediating variable in the relationship between organizational performance and change pressure; change pressure is a key mediating variable in the relationship between organizational performance and organizational inertia.

This proposition is consistent with the idea that performance pressure is one of the key resources of change pressures (Romanelli et al., 1994).

6.2.3 Change Pressure and Strategy Orientation

When the change pressure is large enough, the organization must change the pattern of the current activities of the organization, to adjust their strategy, culture, structure and other key elements, so that the activities of the organization can re-achieve a good alignment with the environment, to promote the organization into a new stage of development. From the data about change pressure and strategic positioning in Table 6- 1, we can see that some rules for Aosheng Group. In the first stage, Aosheng organized its organizational activities in the completely planned system. The change pressure was very small because of relative technological advantage. Aosheng just had expanded production scale within the established mode for a long time. Its strategic positioning was kept unchanged. But in the second stage, the sharp drop in military orders brought Aosheng unprecedented change pressure. The reduction in military orders led to a sharp decrease in profits, even the staff's lives cannot be guaranteed. That crisis is seen as "life and death moment" by some interviewees. The unprecedented change pressure forced the organization to alter their strategic positioning. Although accustomed to the planned mode of operation, Aosheng still decided to put resources to civilian business which had not been the Aosheng's primary businesses.

We can also see, the greater the change of change pressure, the greater the change of strategic positioning is. In the case of Aosheng, the greatest change pressure led to the biggest change of the organizations strategic positioning reflected in that the most attention was put on the civilian business and the output value of civilian business accounted for the greatest proportion of the total output value of the whole group. Connecting with the previously discussed relationships among environment, performance and change pressure, the change pressure can be understood as a reflection of the impacts from organizational performance and organizational environmental change. From the perspective of change pressure, only when the alignment between the strategic positioning and environment is achieved, can organizations face less change pressure. Only when organizations face less change pressure, can they maintain the current activities patterns to adapt to the requirements of the environment, and achieve good organizational performance, finally achieve sustainable development. Therefore:

Proposition 4: In the organizational evolutionary process of Third-front enterprises, change pressure is key mediating variable in the relationship between environment, performance and strategic positioning.

6.2.4 Roles of Leaders

Punctuated equilibrium theory also places great emphasis on the important role of the organization's senior leadership in the organizational evolution process (Tushman and Romanli, 1985; Sastry, 1997). Only the senior managers have the power and rights to balance the organizational activities between the steady state and the need for change, and decide whether to change the strategic positioning of the organization. The different roles of executives are emphasized in different organizational evolution periods. For example, in the convergent period, the responsibilities of executives are primarily to remain stable and orderly activities of the organization, while let the middle and lower manages complete some incremental changes which focus on the improvement of organizational efficiency of daily activities. In the reorientation period, executives need to make a strategic choice, and change the power distribution, the organizational structure, the distribution of benefits, and control system. Judging from the entire evolution of Aosheng Group, the top leadership plays a vital role in its evolutionary process. For example:

Aosheng developed very well as a key military products provider in its early life. However, the sudden change in government policies brought it with serious problem. The fully planned management of military enterprises was changed. All Third-front enterprises were given a one-time grant, and then were asked to find their own ways to survive. In the context of such a policy change, a few Third-front enterprises were forced to declare bankruptcy. When Aosheng received the one-time grant of ¥ 500,000 million, many people were in favor of "to give the average to each person". This idea was supported strongly because the development and marketing of some civilian products had failed before. At that time, Aosheng can be said to be facing a crossroads, and no one knew where to go. In this challenging situation, the bold and vigorous spirit and ability of the leadership played a key role. Based on rational thorough analysis, the Group leadership made a decision to survive by putting all the money to develop civilian products. The strategy and tactics were made carefully by top management team. All workers were mobilized to change their inherent ideas and transform their mindset. About 100 technicians were selected from the military researchers to develop a full channel antenna which was far ahead of the industry average, through learning a shared antenna technology from the United States. All employees worked together to expand the market, Aosheng successfully ride out the most serious crisis in the process of development.

When the development of civilian products was becoming better and better, how to deal with military business became a question which Aosheng and its top executives must answer.

The Group leader team agreed that volatility characteristics of military market meant that there would be higher market demand after the current period of lower demand. The single civilian product at that time was still not strong enough to make the Aosheng develop well without military business. Anymore, military department actually gave strong support for the development of civilian products. The conclusion was that Aosheng must adhere to the military research and development no matter how well the civilian products developed. They even put the profits from civilian products into military department. It is a great challenge of boldness and ability of the leadership because the development of civilian products was booming while the military market was still bad. Later, the fact proved the importance of this decision. Due to changes in the international situation, the country began a wide range of updates and upgrades of military equipment which led to the growing of military market demand. Based on their accumulated technological advantages, Aosheng successfully got a great amount of military products orders. Meanwhile, many Third-front enterprises regretted that they were blindly optimistic to civilian products and abandoned their military businesses because they did not catch the opportunities of military market.

In interviews, the importance of leaders was reported repeatedly by interviewees. For example:

The chairman of our enterprise had great boldness and led us to do a lot of things to promote the development of Aosheng. (R2)

Those important things such as important decisions, important investment, and important personnel arrangements were all decided by the top leaders. High efficiency and good effect were guaranteed by this mechanism, especially in the start period of developing civilian products. This arrangement embodies the idea of managing one enterprise as one who plays a game of chess. (R1)

These examples fully demonstrate that the important role of the senior managers is to correctly judge and make the right strategic decisions in the evolutionary process of organizations. Thus:

Proposition 5: For Third-front enterprises, the cognition and ability has the decisive effect on the organizational evolution; specifically, the leadership moderates the relationships among organizational performance, change pressure, and organizational inertia; the leaders decide the direction and process of strategic reorientation.

6.3 Evolution Model

The organizational evolutionary model of Third-front enterprises is shown in Figure 6-4 derived from synthesizing these propositions based on the case of Aosheng Group. In this model, one Third-front enterprise evolves slowly from a relatively simple organization to a complex organization through the process of “the strategic environment alignment-organizational performance - pressure to change - strategic positioning - strategic reorientation”. In this process, every occurrence of the strategic reorientation means some substantial changes occurred in many areas of organizational activities, so that the pattern of organizational activities of the organization undergoes a fundamental change. This model is logically consistent with the previous model derived from the paradigm of “context-structure-performance” (Lin and Germain, 2003).

In the evolutionary process of the Third-front enterprises, when the alignment between environment and strategy is high, organizations may obtain good organizational performance easier. Meanwhile, changes pressure will be very low and there is no need for strategy reorientation. Organizations just undertake gradual improvement of the organization's activities. Under established strategic orientation, the organization will gradually form a great inertia to strengthen the practice routines to improve the efficiency of organizational activities. By doing so, the competitive advantages and organizational performance are improved. Relatively high performance means less pressure for change which will definitely increase the organization's inertia because the higher performance can prove that the current pattern of organizational activities is close to the best. Only by strengthening the current routines, can organizational practice be consistent with the demand of the pattern of organizational activities. Under the assumption that the alignment of environment and strategy has not changed much, this inertia is conducive to the efficiency of organizational activities, the organizational capacity, and the improvement of organizational performance. This process demonstrates the convergent period in the punctuated equilibrium theory (Tushman and Romanli, 1985; Sastry, 1997). In this period, the organization may implement some incremental changes in some domains of organizational activities to improve the efficiency of the current activities of the Organization. Take Aosheng as an example, in the early stage of its development, the organization's strategic positioning points to the military market that military R & D and production are the only tasks in a completely planned economy system. Accordingly, incremental changes are the primary forms of organizational evolution. These

incremental changes are mainly around the military mission to expand production scale and improve the ability to fulfill military orders.

This model also shows that the essence of convergent period is a game of the change pressure and organizational inertia within the organization. When the change pressure and organizational inertia can be harmonious within a system to a certain extent, the radical and discontinuous change will not occur, i.e. the strategic reorientation will not happen. Only when the pressure for change is large enough to offset organizational inertia which is a force to maintain the original organizational activity pattern, can the pressure for change lead to a radical change.

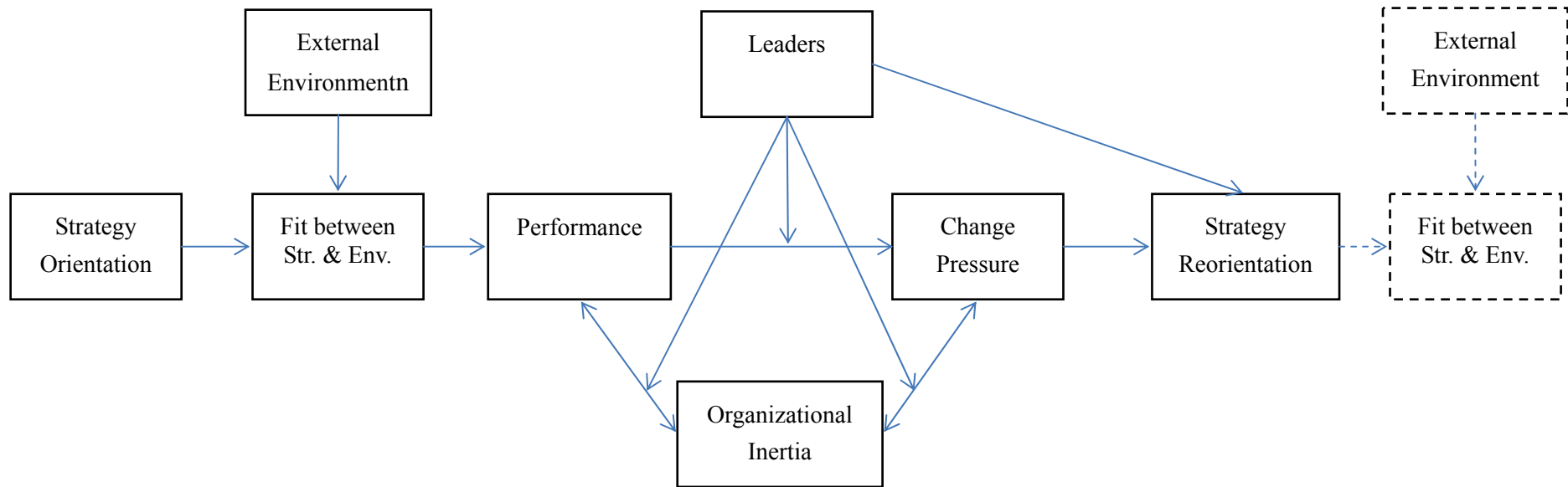


Figure 6- 4 Organizational Evolutionary Model of Aosheng Group

Notes: Str. stands for strategy; Env. refers to environment.

With the changes in the external environment, the alignment between strategic positioning and the environment may become poor. The organizational performance may be worsened, and the change pressure may become greater and greater, eventually forces the organization to examine its strategic positioning and make a substantial adjustment. Through this process, the organization step into the reorientation period of evolution (Tushman and Romanli, 1985; Sastry, 1997). For example, in the start of the second stage, the international political and military situation has changed, which led to the change of government policies about Third-front enterprises. With the implementation of disarmament, the military market began to shrink. The strategic positioning of Aosheng did not match the changed environment any more. The military orders plummeted. Even the lives of employees could not be guaranteed, so that some employees began to set up stalls in order to support their family lives. The change pressure from survival demand is unprecedented great, because the only road is to die if not change. This great change pressure forced the senior executive of Aosheng to analyze the prospects of the enterprise, and substantially changed the strategic positioning. This substantial strategic change improved the alignment of environment and strategy and improved organizational performance ultimately. Through this process, Aosheng achieved a qualitative leap - reorientation.

Another factor that must be emphasized is the awareness and ability of the executive. The keen awareness and strong ability are necessary conditions for organizational development. Here the awareness and ability should be differentiated. The awareness is defined as a cognitive ability, while the ability is defined as the ability to execute. The relationships among those factors in the model of is heavily influenced by leaders. For example, when organizational performance is continuously at lower level, organizations face the problem of strategic reorientation under strong change pressure to change. However, how to adjust the organizational strategy to improve the alignment of environment and strategy in order to improve organizational performance is heavily dependent on the leaders' scanning, analysis and judgment on the environment. Only when the leaders correctly understand the requirements of the environment, can they make the right strategic adjustment as shown by Aosheng Group. When encountered sharp drop of military orders, they made the right choice to develop civilian products. When the right strategy is made, the abilities of leaders are very important because the strategic reorientation necessarily implies substantial changes and the redistribution of power and interests. So, high level of leadership skills and executive ability are critical for leaders, especially for leaders of Third-front enterprises.

6.4 Chapter Summary

In this chapter, the relationship between external macro environment and the process of organizational evolution of Aosheng and the relationships among strategy orientation, organizational structure, organizational performance, change pressure and organizational inertia are analyzed based on the evaluation results in chapter four and chapter five. The evolution pattern emerged from the data are described and five theoretic propositions are proposed accordingly. All the findings are integrated into an evolution model as shown in **错误! 未找到引用源。** 6-4. This model explains the punctuated equilibrium evolutionary mechanism of Third-front enterprises in China from the complex relationships between environment and organizations as well as relationships among key elements within organization.

Chapter 7: Discussions and Conclusions

There are many problems concerning the development of the Third-front enterprises due to their special historical background, including the special production purpose, unique locations and specific market. Although a great number of researches have been done on the Third-front enterprises in China, few of them accessed to the inside of a Third-front enterprise's organization to investigate its evolution law and process. At the same time, there're a lot of researches on organizational evolution and the theory of punctuated equilibrium has been applied in many situations. However, owing to the specific history of the Third-front enterprises and the special background of China's transitional economy, it is adventurous to adopt the research fruits from other countries and the theories that are based on the mature market economic system. Therefore, the following questions are of great theoretical and practical significance: What regularities are there behind the organizational evolution of Third-front enterprises? What are the main internal factors in the organizational evolution and what interactions do they have? What interactions do these factors have with external environment factors? By answering the above questions, we can draw experience from the successful Third-front enterprises and even make theoretical discovery, which can be used to guide policy making as well as practice of the enterprises. The goal of this thesis is to find the patterns and regularities lying behind the successful organizational revolution of the Third-front enterprises so as to provide possible resolution to the problems faced by Third-front enterprises.

7.1 Findings

In order to explore answers to the research questions, the current research applies an in-depth analysis on the changes of both internal and external factors and their interactions in the organizational evolution of Aosheng Group. Aosheng Group's environment, strategic orientation, organizational performance, pressure for changes, organizational inertia and organizational structure at each stage were analyzed in detail. By comparing the changing regularities, it put forward five propositions concerning the organizational evolution of the Third-front enterprises.

- Proposition 1: Macro environment influence the organizational evolution process of Third-front enterprises and decides their evolutionary process; the political factors especially the national policy dominate the organizational evolution process of Third-front enterprises. 108
- Proposition 2: Third-front enterprises must strive to adjust its strategic positioning in order to better adapt the environment change, so as to obtain good performance; the strategic environment alignment is an important mediating variable for strategy and environment to influence organization performance, this is particularly important for Third-front enterprises.110
- Proposition 3: In the organizational evolutionary process of Third-front enterprises, the performance of military business has more significant effect on organizational inertia and change pressure; organizational inertia is a key mediating variable in the relationship between organizational performance and change pressure; change pressure is a key mediating variable in the relationship between organizational performance and organizational inertia.112
- Proposition 4: In the organizational evolutionary process of Third-front enterprises, change pressure is key mediating variable in the relationship between environment, performance and strategic positioning.113
- Proposition 5: For Third-front enterprises, the cognition and ability has the decisive effect on the organizational evolution; specifically, the leadership moderates the relationships among organizational performance, change pressure, and organizational inertia; the leaders decide the direction and process of strategic reorientation.115

These propositions comprehensively present the findings of this research, and provide empirical research propositions for the follow-up researches. They also give answers to the research questions proposed in Chapter 1.

The model shown in Figure 6-4 depicts the pattern of Aosheng's organizational evolution process. This model depicts how Aosheng have evolved from one period to another. This model addresses six internal factors which play important roles in the process of organizational evolution. For each period, the different level of fit between strategy

orientation and external environment leads to different organizational performance. Performance put key influence on change pressure and organizational inertia. If the performance is good the existing organizational acidity patterns will be strengthened, otherwise the change pressure will be increasing. If the change pressure is strong enough, strategy orientation which changes the level of fit between strategy and environment will happen. By this way, Aosheng Group evolved stage by stage.

In this process, two internal factors (leaders and organizational inertia) seem to be more important for Third-front enterprises than for common enterprises. Third-front enterprises are a kind of SOEs. Besides all the problems that state owned enterprises have, their pure military background may bring them more organizational inertia. Employees worked for Third-front enterprises had never thought about that one day they would survive only by producing for civilian use. The leaders play key roles in the evolutionary process. They must scan environment for information, make correct strategy decisions, and take rational tactics to implement decided plans. Their roles are more important because Third-front enterprises were under planned system, the management system has a kind of military style, and meanwhile they have those characteristics of SOEs.

The model addresses the important interaction of strategy and external environment. Strategy environment fit is a key factor which connects internal factors and external factors. The fit is key concept in both punctuated equilibrium theory (Sastry, 1997) and other management literatures like strategy management (Tan, 2005). Specific dimension of strategy may be tightly connected with one or some dimensions of external environment. Take Aosheng as an example, the balance between military business and civilian business was decided, to a great extent, not by the organization itself but by macro environment including political changes, economic development and external markets.

7.2 Theoretical Contributions

The existing theoretical guidance will be beneficial to the directionality of the case studies, and help to improve the external validity of the single case study (Yin, 2009). The fundamental idea and construct of the punctuated equilibrium theory (Romanelli et al., 1994; Sastry, 1997; Tushman et al., 1985) have been adopted to guide the case study in this thesis. By reviewing the researches concerning organizational evolution and the theory of punctuated equilibrium, this thesis believes that the theories on organizational evolution provide us with a

weapon to realize the internal mechanism of organizational development, and the punctuated equilibrium theory helps people to better understand the organizational evolution. However, although the punctuated equilibrium theory has been applied in many fields (e.g. Baumgartner et al., 2009; Boushey, 2012; Breuning et al., 2006; Jones et al., 2003; Jordan, 1999; Robinson, 2007), most researches on organizational evolution (e.g. Chimhundu, 2011; Gersick, 1991; Lant et al., 1992; Romanelli et al., 1994; Sabherwal et al., 2001; Wollin, 1999) are based on the developed market economies of the west. Little attention has been paid to the organizational evolution under the circumstance of transitional economy. This thesis can help to change the situation.

Concerning theoretical contributions, Whetten (1989) held that three key issues need discussing: (1) What are the building blocks of theory development? (2) What is a legitimate, value-added contribution to theory development? (3) What factors should be considered in judging theoretical contribution? He pointed out that, a complete theory must include four necessary factors, i.e. what, how, why and who, where and when, and he also further proposed how to judge the theoretical contribution of a research. According to Whetten and other scholars' ideas, this thesis has made certain contributions to theory development in the following aspects: (1) the explanatory ability of punctuated equilibrium theory has been verified in the context of China's Third-front enterprises; (2) based on the case of Aosheng Group, it found the negative change in the relationship between pressure for changes and organizational inertia, which has somewhat developed the model proposed by Sastry (1977); (3) it has promoted the researches on the Third-front enterprises from a normative and macro level to a micro level---the inside of the organization; besides, it also incorporated the influence posed by the changes in the external environment into the model. This relevance will be detailed below:

7.2.1 Theory Testing

The punctuated equilibrium theory of organizational evolution is applied in this thesis to China's context, especially for Third-front enterprises. The changes in all factors during the evolution of Aosheng Group, as expounded hereinabove, suggest that the organizational evolution of China's Third-front enterprises shows obvious punctuated equilibrium. The evolution model shown in Figure 6-4 describes the organizational evolution at one stage. This model has the same logic like those in extant literatures on punctuated equilibrium theory (e.g. Sastry, 1997). Thus, the explanatory ability of punctuated equilibrium theory has been

verified.

Some researchers noted that, during organizational evolution, path dependence and punctuated equilibrium occur simultaneously (Feder-Bubis et al., 2010). Despite no research in this thesis into the evolution of Aosheng Group from the perspective of path dependence, it is possible to infer from Aosheng Group's persistence in the strategic orientation of "taking military business as the foundation" that path dependence also exists in its evolution. That is to say, the theory of path dependence and that of punctuated equilibrium are not contradictory during the complex process of organizational evolution; the two have complementary explanatory abilities.

7.2.2 Theory Development

The model eventually obtained in this thesis (Figure 6-4) has somewhat developed the model proposed by Sastry (1977). For China's Third-front enterprises, the conclusions on the effect of organizational performance on the pressure for change and organization inertia are identical to those in the existing literature; however, it is discovered in this paper that the impact of military business performance on the pressure for change and inertia is more obvious. The original punctuated equilibrium model of organizational evolution neglected the impact of the pressure for change on organizational inertia (e.g. Sastry, 1997). Based on the case of Aosheng Group, it is discovered in this thesis that the pressure for change somewhat weakens organizational inertia. Organizational inertia tends to consolidate or follow the existing organizational activity mode and thinking pattern, and yet the pressure for change (wherever it originates) obviously affects organizational inertia in a direct way. As the pressure for change increases, organizational members tend to recognize a new alternative activity model and thinking pattern so as to shake the organizational inertia, based on which the proposition that the pressure for change and organizational inertia are intervening variables to each other is suggested.

The relationships among performance, change pressure, and organizational inertia may be more complex than we have known. Organizational inertia has two-direction mediating effect between performance and change pressure. Change pressure may be a key mediator between performance and organizational inertia. On the one hand, these relationships can improve our understanding of the internal process of organizational evolution. On the other hand, these relationships can improve our understanding of why so few Third-front enterprises can be successful.

7.2.3 Promotion of Researches on Third-front Enterprises

The review of the researches on the Third-front construction show us that most studies on the Third-front construction in China are from a historical perspective, reviewing, summarizing and evaluating its decision making process, executive process, results and influence or discussing its impacts on the economic and social development of the provinces or cities concerned. These studies can provide us with valuable experience, which are good references for decision and policy making in the future. However, these studies are far from flawless since they all neglect the individuality of the Third-front enterprises, including their culture, history, leadership, etc., and simply regard the enterprises and their organizations as a black box, not taking a further step to investigate the evolution mechanism of the organization. Therefore, they are of limited significance in guiding individual organizations. Theoretical explanation on how the Third-front enterprises evolve is not sufficient, either. Foreign researchers also paid less attention to Chinese Third-front enterprises because they were not familiar with China, especially the causes and effects of some historical issues (Van de Ven et al., 2011). What's more, China didn't open to the outside world until the 1970s when the outside world began to know China's development (Naughton, 1988). It can be easily seen that most studies on the Third-front construction, abroad or at home, are macroscopic, usually at the country level or province level and from a historical perspective.

As described above, most existing researches on Third-front enterprises are essentially historical retrospection, either describing and analyzing the historical process of Third-front construction and pointing out the staged nature of this process and its characteristics, or providing positive or negative remarks on Third-front construction from a macroscopic perspective (See the literature listed in From the historical evolution of the Third-front construction policy we can see that the evolution of Chinese Communist Party's regional development theory influences the third construction policy and historical process (Zhong, 2011) (仲海涛, 2011). Zhong Haitao (2011) points out that the social, historical, political and economic conditions at home and abroad varies at different periods. So do the ideas on China's regional development. The Third-front construction largely represents Chinese Communist Party's ideas on regional development.

Table 2- 1 Research on the Third-front Construction in China). Different from those researches, this thesis is based on the punctuated equilibrium theory of organizational evolution and promotes the researches on Third-front enterprises into inside Third-front enterprises. The ten propositions obtained herein intensively expound the regularities of

organizational evolution of successful Third-front enterprises. The model established herein (Figure 6-4) provides theoretical propositions for further empirical researches, which will advance the relevant researches to be closer to the normal form of empirical researches so as to be more rigorous and profound. The model also can enable us to advance our research from the macro level into the interior of an organization, to extend our research from a single perspective to a comprehensive perspective which takes both the internal and external factors into account. The research results can promote the researches on Third-front enterprises from the macroscopic and policy level to the organizational and verifiable level. All these can promote the research on the Third-front enterprises to a record high level.

7.3 Suggestions for Policy Making

Another important relevance of this research lies in that it may provide some highly valuable suggestions for the government to make policies on Third-front enterprises. As described hereinabove, the organizational evolutions of numerous Third-front enterprises differ significantly. Some Third-front enterprises went bankruptcy long ago; some have developed into enterprises specialized in products for civilian use. Another type, with Aosheng Group as its representative, developed well in combining the military business and the civilian business. Therefore, the above case analysis of Aosheng Group will provide beneficial experience and lessons for the subsequent policy-making and development of the Third-front enterprises.

On the basis of the findings, this thesis has put forward some suggestions on policy making: 1) Government should attach importance to the complexity and long-term nature of the Third-front enterprises' organizational evolution and avoid being "short-sighted" and "anxious to achieve quick success and get instant benefits"; (2) since the awareness and abilities of corporate leaders are of great importance and helpful to corporate development, it is suggested to train corporate leaders with strategic insight and enterprising spirit for the Third-front enterprises (Groups). The following two sections will discuss these two in detail.

7.3.1 Considering Complexity and Long-term Nature

Results of the above case analysis of Aosheng Group show that, the organizational evolution of Third-front enterprises is the dynamic result of interactions between large numbers of external and internal factors. It can be observed in the relationship between the

macro-environment and the organizational evolution of Aosheng Group that, the effect of governmental policies is obvious and tremendous on Third-front enterprises represented by Aosheng Group. On the one hand, policies have provided a general background for enterprises to obtain resources, including their legitimacy; on the other hand, policies have actually provided space for existence and development for Third-front enterprises due to their particularity.

The development of China's Third-front enterprises, especially the implementation of the strategy of combining military-oriented technology with the civilian use, was undergoing without any guidance of successful case; thus, it is essentially a kind of exploration, much resembling "wading across the stream by feeling the way". This nature of exploration is obviously shown in the national-level macro-policies and the coping strategies of specific military enterprises. Since the foundation of the People's Republic of China, it has always been an important issue focused on by the central government to better utilize the resource advantages (including equipment, technologies and talents) of military enterprises to promote the development of national economy, on the premise of guaranteeing the building up of national defense. A series of subsequent changes, including institutional establishment and changes and policy amendments, all demonstrate that the national-level macro-policies are also adjusted correspondingly according to the implementation information. A specific military enterprise faces uncertainties in three aspects: Firstly, the uncertainty in national policies: Despite the determination of the general direction of "combining military-oriented technology with the civilian use", specific implementation and operation policies have not been, and are unable to be, correspondingly established and improved. Secondly, the uncertainty of military business market: Relatively closed as the military business market is, the market changes caused by the fluctuation of overall military expenditure are unavoidable, and the change of military business purchasing system has been slowly put onto the agenda. Thirdly, the uncertainty of civilian product market: Although there are no rigorous regulations on entering the civilian product market or high barriers to entry, and the military enterprises also possess considerable resource advantages (including policy, equipment, technical and talent ones), those factors, however, may need a complex and long-time process to be correspondingly converted into competitive advantages under open and competitive market conditions.

China's economic development is with obvious regional imbalance (Shen, 2008; Shi, 1998; Yang, 1994). The regional imbalance of economic development may come from impact

of factors in many aspects, including natural, geographic, historic, and ethnic and policy ones. China owns a wide territory, with dramatically varied regional environments; resources are geographically highly unevenly distributed. The Bohai Rim Circle in East China, for instance, abounds in mineral resources like petroleum, iron & steel and coal, blessed with natural conditions highly favorable to farm crops and economic crops growth; by contrast, West China owns relatively poor climate and water and soil resources; North China is with serious desertification and Southwest China's soil is relatively barren. The policy factor, as a human factor though, plays an even more important role. If a policy favors unbalanced regional development, then the unbalanced regional development will become much worse. Before China began to adopt the open and reform policy, when the Third-front construction was carried out extensively, large quantities of resources were input into Central and West China, somewhat narrowing the gap between Central and West China and coastal East China. After that, investments tended to be input into the coastal East China, aggravating the inter-regional imbalance. To be specific, late in the "Fifth 5-year Plan Period" (1976-1980)¹², the aggregate investment of fixed assets in the coastal areas made up the highest proportion (42.2%) throughout China since the foundation of the People's Republic of China; in the "Sixth 5-year Plan Period" (1981-1985), the special zone policy and the strategy of giving development priority to the coastal area were further promoted, and the capital construction investment in East China exceeded the sum of that in Central China and that in West China; later, in the "Seventh 5-year Plan Period" (1986-1990) and the "Eighth 5-year Plan Period" (1991-1995), the aggregate investment in East China occupied an increasingly high proportion in China. Meanwhile, financial, taxation, foreign investment, price and credit policies and so on also more favored coastal East China. Policies showed some favorable considerations to Central and West China and ethnic minority areas in the "Ninth 5-year Plan Period" (1996-2000), but huge gaps still objectively exist. The regional imbalance in economic development objectively brought about many difficulties to the development of Third-front enterprises.

As expounded above, most Third-front enterprises are located in geographically remote

¹² The Five-year plans refer to the major plans that are drawn up for the major national construction projects, allocation of productive force and important proportional relations of national economy on a five-year basis under the leadership of the central committee of the Communist Party of China; it sets objectives and directions for the long-term development of the national economy; they are part of China's national economic plans. China's 1st Five-Year Plan (1953-1957) started in 1953. So far, 12 "Five-year Plans have been drawn up, and China is now in the period of the 12th Five-year Plan (2011-2015).

areas in Central and West China; most of them are in mountainous areas. Despite a small number of military enterprises in coastal areas and Beijing etc., the quantity of them only occupies a very small proportion in the entire military business system. A large number of cautions have led to the low economic development in Third-front areas, represented by low economic aggregates and GDP per capita; moreover, the manufacturing industry in those areas plays a pillar role in the entire economy, in which the proportion of military enterprises (Third-front enterprises) is very high. Low economic development means lack of favorable market environments, including the total market scale and the market quality. The local market cannot consume products of Third-front enterprises, even if they are with relatively advanced technologies and products. Besides, the effects of driving factors of economic development on the Third-front enterprises are also significantly limited due to geographic conditions. For example, the foreign direct investment (FDI) in China grows rapidly as the progress of reform; those FDIs have brought, in addition to direct capital input, spill-over effects to the host country (area) (Hu and Jefferson, 2002), like technologies (Cai, 2010), knowledge (Qi, Fang, and Li, 2011; Yuan and Lu, 2005), and innovations (Cheung and Lin, 2004; Xian and Yan, 2005); they may also drive the local economic development (Sui, 2011) and affect the development of local enterprises (Helpman, 2006). The FID into the Third-front areas, however, is much lower than those across the country, and it was even zero in some years in some provinces, which objectively restricts the possibility of FDI's promotion of Third-front enterprise development.

Therefore, when drawing up policies concerning Third-front enterprises, the government (especially the central government) shall comprehensively consider all factors and take the long-time nature and complexity of policies and plans into consideration, avoiding trends like "seeking quick success and instant benefits". Needs for national security and national economic construction as well as industry development and individual enterprise development shall all be taken into consideration in a holistic way.

7.3.2 Leaders Selection and Training

The case of Aosheng Group shows that, the awareness and abilities of corporate leaders are of great importance and helpful to corporate development. At many crucial moments, the role of leader is vital, even decides the existence or death of a company (as shown in Proposition 5). As a result, for developing Third-front enterprises, the government shall intentionally train Third-front enterprise leader groups, especially major corporate leaders,

with strategic insight and reform courage. Only when the main corporate leaders are with strategic insight can they correctly observe the corporate development direction. Only when main leaders have the courage and abilities to stand pressure can they determine correct strategic directions, properly make strategic arrangements, lead subordinates to smoothly achieve the anticipated objectives and shoulder the heavy task of leading corporate development.

The case of Aosheng Group demonstrates that correct strategic positioning plays a vital role in the organizational evolution of a Third-front enterprise. During the organizational evolution of Aosheng Group, the group leaders must comprehensively consider factors and balance them. When should civilian products be emphasized? When should the input into military products be increased? How should the relationship between military products and civilian products be balanced? How should resource allocation and benefit allocation be coordinated? After solving those strategic problems, the brave men in Aosheng Group went through various difficulties and have eventually stepped into a stage of good coordination and development. All of those problems cannot be simply treated; they greatly rely on the leaders' correct mastery of environmental information and their prospective thinking about future development trend. Only by this way, can they make policies that are favorable to the current existence and also long-term development of the enterprise. For example, if Aosheng Group gave up R&D and input into military products when quite smooth and successful in civilian products, it would be unable to grasp opportunities of military products when their demands are on the increase; considering the setback in development of civilian products then, Aosheng might have collapsed then. It was because the leaders then realized the dynamic nature of environment and persisted in continuous input into military products that Aosheng grasped the opportunity of military product market expansion so that it smoothly went through difficulties in civilian products setbacks.

In terms of strategies of reformation, high requirements were also raised to leaders. Early at the second stage, orders for military products to Aosheng Group had been very few, which led to insufficient factory operations, linear decrease in profits and even initial threats to employees' daily necessities; meanwhile, trials in civilian products suffered some setbacks. On a large sum of money as subsidies from the central government, the majority of people insisted on equally dividing it to everyone. Although the leaders thought this sum of money should be used for investment to finally save Aosheng Group, the view of dividing the money to everyone might have swallowed up all Aosheng Group would achieve subsequently, if

there was no various strategic arrangements taken by the leaders then, including exciting speeches, successful descriptions of wishes and active individual mobilization.

In the case of Aosheng Group, some interviewees happened to mention that:

I feel that leaders are key factors to the development of an enterprise. Their determination, view and thoughts are very important, as well as how to build a management team around them. In recent year, Aosheng Group has been revolving around the core of our chairman. His views and his thoughts are influencing the development of the entire group. (R5).

Our chairman also has great courage and boldness and has led us to achieved so much. (R2)

The particularity of Third-front enterprises, including its historic accumulation, organizational cultural features, local regional features and task particularity, requires Third-front enterprises leaders to be with more management skills and art (compared to pure private enterprises). Therefore, when appointing main leaders of Third-front enterprises, the government should apply the corresponding theory of human resource management, select personnel with potential quality, and intentionally foster and train them to finally become the core strength of leading the corporate development. Training and learning of relevant personnel should also be emphasized; a long-term and long-effect learning mechanism shall be established to avoid apparent training and learning and to really improve their leading abilities and art.

7.4 Implications for Similar Organizations

Since organizational evolution is a long historical process, a dynamic and complex process with many interactive factors, theoretical instructions and practical suggestions will be very helpful for other Third-enterprises to direct their strategy and manage the change process. The design of the current research has taken this into consideration. The case-based study method is more suitable to explore the exact process of some events (Yin, 1989, 2009). So, the detailed organizational evolution process can be a good example for similar organizations. Theoretic sampling method (Coyne, 1997) in which the extreme cases are chosen in order to highlight the regularities behind the phenomenon (Eisenhardt, 1989) also provide enough reasons for other Third-front enterprises to take Aosheng as an example and

learn relevant experience. In order to choose an appropriate case from a large number of Third-front enterprises, followed the standards of "extreme cases" to examine the development of the enterprises in the past decade, including the asset growth rate, the technical level, the major projects assumed and etc. and considering the availability of information (such as whether it is possible to interview the senior management staffs of the enterprise and to access the company's internal information, etc.), finally we chose Aosheng Group as a case. This rigor selection process is also good reason for similar organizations to take the suggestions proposed here. In one words, the findings provide solid foundation to give practical suggestions.

Based on the findings discussed above, three practical suggestions are proposed here. Briefly speaking, (1) the Third-front enterprises should see the opportunities and challenges lying ahead so as to overcome the blind pessimism and optimism; (2) the Third-front enterprises should strive to enhance their employees' sense of urgency for changes through a variety of means and methods, thus weakening the resistance to change; (3) leaders should take the responsibility to promote successful organizational evolution. All these suggestions will be detailed below.

7.4.1 Overcome Blind Pessimism and Optimism

The study results show that the organizational evolution of Aosheng Group has been through effects of various internal and external factors, among which the external environmental factors, such as macro-policy, economic environment and market environment, play a very important role. It is held in this thesis that the environment encountered by the Third-front enterprise means opportunity and challenge from the relationship of the enterprise and the external environment. The enterprise shall avoid blind pessimism and optimism from the internal of the enterprise. It shall identify the opportunity and danger in the environment through scientific assessment and avoid the fatal blow due to variation of some factor in the environment.

In terms of the external environment, China's increasingly market-oriented economy brings good developing opportunity to the Third-front enterprise. Meanwhile, the Third-front enterprise also faces various threats and challenges. On the one hand, the high-speed increasing macro-economy means opportunity to any organization running in it. Aosheng Group case is just a good illustration. The domestic and international markets are expanding quickly while the entire economy accelerates development, which provides broader

commodity market for the enterprise. At the initial period of reform and opening, some Third-front enterprise began to research and develop advanced civilian industry products, but they finally failed because the products were too advanced and expensive so they were not suitable for the development level of the whole country. When the economy is developed and the revenue is increased and the market scale is expanded, many products take their place in the market and begin earning profits. Throughout history, in the data shown in Table 7-1, except in 1999 when the growth rate was at the second place, China's GDP growth rate has always been at the first place for six years and much higher than the second place; for instance, the growth rate in 1985 was almost double of the second place. To some extent, it can be assumed that one of the most important reasons for some successful examples of combining military-oriented technology with the civilian use appearing in late 1980s is the high-speed increasing macro-economy. It can be held that the high-speed increasing macro-economy offers a good economic environment and policy environment for the successful development of Aosheng Group.

Table 7- 1 Comparison of Economic Development Rates of China and Other Countries
(Annual GDP Growth Rate)

	China	Russia	Canada	Brazil	Germany	Sweden	USA	India	Japan
1980	7.8		2.2	9.1	1.4	1.7	-0.3	6.7	2.8
1985	13.5		4.8	7.9	2.3	2.2	4.1	5.2	5.1
1990	9.2	-3	0.2	-4.3	5.3	1	1.9	5.5	5.2
1995	10.9	-4.1	2.8	4.4	1.7	3.9	2.5	7.6	1.9
2000	8.4	10	5.2	4.3	3.1	4.5	4.2	4	2.9
2005	11.3	6.4	3	3.2	0.7	3.2	3.1	9.3	1.9
2010	10.4	4	3.2	7.5	3.7	5.6	3	8.8	4

Note: ①The data in the table are in percentage, representing the year-on-year growth rate;

②The bold figure indicates the highest growth rate of the year;

③The data come from the database of the World Bank¹³.

However, on the other hand, China's sustained growth of macro-economy caused giant pressure and challenge to the Third-front enterprise, and sometimes even limits the development of the Third-front enterprise. As the civilian product market and the military product market are two totally separated markets and the reform and opening lowers the entry to the market, the civilian product market faces much more intense competition. Economically, the intense competition indicates that if the product price cannot cover all costs, the

¹³ Website: <http://data.worldbank.org.cn/indicator>

manufacturer must lower the price or recede from the market. The costs herein include the fixed costs and the variable costs. Even if the fixed costs to the Third-front enterprise (including equipment and technical reserve) as the sunk cost can be neglected, but if the enterprise suffers long-run loss due to some product because the acquirable market price is insufficient to cover all variable costs, the enterprise has to give up this product to avoid more loss at last. Many Third-front enterprises show obvious maladjustment to the quickly varied market, for the Third-front enterprise has been used to the closed and planned military products system. It can be seen that without special policy preference, it is very hard for the military products enterprise entering the civilian product market to occupy dominant market place at initial period, although they are in leading position of technology. From the perspective of all levels of government, all of them try to avoid the bankruptcy of the Third-front enterprise (as typical state-owned business). The government would raise the subsidies for the Third-front enterprise suffering losses, or influence the market competition through police influence to provide them comparatively favorable competitive environment. However, the bankruptcy of Third-front enterprises due to poor operation is nothing new (Cai, 2010). The possible reasons include: first, the advancement of society, economy and technology emphasizes more on technical competition and research and development capability. It implies that the enterprise will invest more resources to the technical and R&D departments in the market competition, which will increase the enterprise's opportunity to gain competitive advantage in future and thus guarantee sustainable profits. However, the central government and the provincial government will alter the original management system of undertaking the whole thing due to pressure financial deficits and will decrease the financial allocation to the Third-front enterprise. Thus, the Third-front enterprise will face the conflict of the decrease of funds source and the increase of input. Second, the high-speed development of non-state economy makes the market competition more intense. The higher and higher proportion of the non-state economy in the national economy inevitably leads to more and more intense competition in many industries. Under this condition, the Third-front enterprise will face bigger competition in the development of civilian products. Third, as China enters WTO, the entry of foreign manufacturers will intensify competition in the national market.

In the case of Aosheng Group, it did not give up military products when civilian products developed well, so that Aosheng Group has grasped the opportunity of the new round of arms renewal and update, which is a key point for the development of Aosheng Group. If Aosheng

Group blindly held that civilian products were enough to replace military products and thus gave them up then, it would undoubtedly be unable to grasp the opportunity and thus its development would be much slower. Similarly, if Aosheng gave up the civilian products business suffering setbacks then when it grasped the opportunity of new military product market and achieved high profits and large orders in military products, Aosheng Group would easily lose the civilian products business and relevant markets, which subsequently account for nearly 70% of its total output. Therefore, the Third-front enterprises must be fully prepared for possible future changes, reasonably allocate and use limited resources and overcome blind pessimism and optimism to development and change steadily.

7.4.2 Change Management Skills

The organizational evolution of Third-front enterprises entails unavoidable changes, including incremental changes and reorientation changes (Romanelli et al., 1994). The policies and directives of the central government play a vital guidance role in the development of Third-front enterprises (Gao, 2011). The strategy of developing civilian products to support the combination of military-oriented technology with the civilian use is highly difficult for some enterprises; nevertheless, as the central government continuously emphasizes the policy of combining military-oriented technology with the civilian use, and with the dramatic drop in military expenditures and military products procurement as well as the market-based operation of military products procurement system and the breakdown of plan and directive system, the enterprises concerned have to seek for breakthroughs and development in the civilian product market in order to achieve existence. Under those circumstances, it is no longer a choice but a must for Third-front enterprises to change. In the words of some interviewees, "reform may lead to death, but it is bound to die without reform". Therefore, the enterprises must build an active atmosphere to support change, and increasing the sense of urgency for change of all personnel is a highly important and helpful means. During the complex and dynamic process of organizational evolution from a low-level and simple form to a high-level and complex one, a large number of factors shall be taken into consideration for development planning, especially when drawing up some specific change implementation measures. For example, a dramatic or continuous drop in organizational performance may, while bringing existence pressure, also actually imply good change opportunities; if change leaders can reasonably utilize them, the change of Third-front enterprise may be smoother.

To be specific, it is discovered in this research that the pressure for change and

organizational inertia show an obvious relationship of negative correlation during the organizational evolution of Aosheng Group. Organizational inertia is an important change resistance, and the change management always hopes for a smaller change resistance. Facing the unavoidable organizational change and considering the relationship between the pressure for change and organizational inertia, the crucial time point of change may be considered to be set at that with the maximum the pressure for change when preparing for strategies and tactics for organizational change. Change leaders may help organizational members to be aware of the necessity of change, increase their awareness of the pressure for change and raise all employees' sense of urgency for change through various means and strategies, like speeches, propaganda and mobilization meetings, as a way to reduce change resistance.

7.4.3 Leaders' Responsibilities

Leaders play very important roles in the evolution process of Aosheng. It is not exaggerated to say that leaders save the life of Aosheng. The model in Figure 6-4 also shows that leaders can moderate these interactions among performance, change pressure, and organizational inertia, and have direct effect on strategy reorientation. Thus, leaders should take the responsibility of promoting successful organizational evolution. The case of Aosheng provides us precious experience some of which will be discussed below.

Leaders should be sensible to both internal and external environment. Only by this way, can they obtain sufficient and effective information to make correct decisions. For example, when Aosheng faced the sharp decrease of military orders, the leaders made the decision to put almost all resources to develop a modern civilian product which brought Aosheng rich reward. How can they make such decision? According to interviews, before making the decision they did thorough analysis on both internal and external factors, such as the changes of government policy, the satisfaction of employees, the possible market future, etc.

Leaders should stand at theoretic level to think about the management business and management phenomenon. For the organizational evolution, keeping the interactions depicted in Figure 6-4 in their minds will be very helpful. For example, when facing a management problem like great resistance to working for civilian department, leaders cannot just pay close attention to the resistance itself (how strong it is or which people it is from). The more effective approach may be to see it as a kind of organizational inertia, and analyze the reasons. If they make it clear that the better income or just the cognition of the social reputation is the main reason for the employees choose to stay in military department, the corresponding

resolution (e.g. a change of salary system) will be very effective.

7.5 Research Limitations and Future Directions

Surely, the current research has its own limitations. For addressing these limitations, some promising future research directions can be given. Although a single case means good coverage for data collection and in-depth analyses, the conclusion of the study yet depends on follow-up studies to provide empirical support; given more time, more in-depth and detailed analysis would have been carried out on certain constructs and the analysis unit of the organizational evolution process could have been year instead of stage; although this thesis analyzes the evolution of Aosheng Group by adopting the basic ideas and basic concepts of the theory of punctuated equilibrium, there are still some other factors to be included. Take organizational learning (Lant et al., 1992; Levinthal and Marino, 2010; Quinn, 1981) as an example. Follow-up studies may explore what impact the differences in organizational learning capability have on organizational evolution of Third-front enterprises. All these points will be detailed below.

The deep research of a single case can help more profoundly understand the process of organizational evolution, and rigorous research procedures and the use of such methods as triangular verification of triangle also maximally guarantee the reliability and validity of research. However, as a doubt about case study by scholars, “how can you extend one case study to others”, which is just what positivism emphasizes. This question cannot be answered simply with a “Yes” or “No” (Kennedy, 1979). As Yin (2009) noted, the essence of case study is not to find a “sample” through the case, but to spread and extend the theory; case study is a “generalization” process, instead of a “specialization” process (Lipset, Trow, and Coleman, 1956). This question also applies to this research. The case study of Aosheng Group enables us to profoundly understand the internal and external factors of organizational evolution of Third-front enterprises as well as their mutual relationships and interactions; however, the conclusion will be firmer if with support of statistical conclusions on several organizations. Therefore, subsequent researches may include verifications of the propositions proposed in this thesis under different circumstances, which will be main contents of further researches.

In research design of this thesis, it is hoped to explore the research questions through analyses of a single case. The benefits and advantages of this design are also mentioned in the part of research methods (see Chapter Chapter 3: Research Method on P35). Nevertheless, in

longitudinal study of an enterprise with a history of decades, an unavoidable problem is the missing and loss of data. The author has made great efforts to collect data through many channels, and has also maximally adopted data from various sources for mutual verifications to ensure data accuracy; however, some needed data are still unobtainable. Possible causes include that some data have to be kept highly confidential, and some have become unavailable due to historical reasons (e.g. not recorded into archives at all). Thus, the completeness of data constitutes one of the limitations of this thesis. Also because of the same reasons, the measurements of relevant concepts are just acceptable. In other words, they should be improved so that readers can feel more satisfactory. This might be well solved when subsequent researches are with collaboration with governmental authorities concerned.

In the researches in this thesis, all core constructs are analyzed at stages at the organizational level, and corresponding theoretical propositions are proposed according to the regularities and patterns based on analysis results. Despite maximal persistence in objective and detailed analyses in this thesis, due to the limitations of author's time, energy and ability, the current research can be further deepened to research into the issues concerned in a more detailed way. For example, the year can be used as the analysis unit for the organizational evolution process (Romanelli et al., 1994). A smaller analysis unit will help decompose organizational evolution and also discover more details. Of course, a smaller analysis unit means a larger amount of data collection work. It is a great challenge! Besides, evaluations and analyses of some constructs in thesis adopt convenience and satisfaction as standards, without comprehensive analyses. For example, Aosheng's emphasis on civilian products is taken as the measurement of its strategic positioning in this thesis, which is also used to reflect the changes in its strategic positioning. Although this method is quite reasonable for Third-front enterprises, the results may be more convincing if more data can be collected to analyze the changes in its product line, product type and segment market etc. (Romanelli et al., 1994).

Similar to biological evolution, organizational evolution is also a highly complex process, involving numerous internal and external factors, among which there exist complex interactions and relationships. Therefore, it is impossible and also unnecessary to expound all factors and relationships in one research. Although these important factors appearing in Figure 6-4 playing fundamental roles in the organizational evolution of Third-front enterprises and their mutual relationships have been summarized in this thesis based on detailed literature on organizational evolution, some other factors which have been neglected due to energy and

time limitations must also be noticed in subsequent researches. For example, organizational learning significantly influences organizational change and evolution (Lant et al., 1992; Levinthal et al., 2010; Quinn, 1981). But it is not included in the current research, thus subsequent researches may explore how the difference in organizational learning ability influences the organizational evolution of Third-front enterprise.

Among others, this thesis concludes that the government and relevant policies play a decisive role in the organizational evolution of Third-front enterprise, and it is suggested that guiding the development of Third-front enterprise from a long-time perspective be focused on when formulating subsequent policies on the development of Third-front enterprises. However, we should hold a cautious attitude towards this conclusion. Although a large number of theories hold that the organization must adapt to the environment in order to survive and development (Hannan and Freeman, 1977; e.g. Hannan, Freeman, and Hannan, 1993), scholars have come to approve the view that the organization and the environment evolve together (e.g. Tan et al., 2005). Thus, the entire social system, including the interrelationships among organizations, somewhat changes with the social and historic development. For Third-front enterprises, the government's role in the organizational evolution of enterprise will somewhat change as China's market economy system gradually matures. Moreover, the development of Third-front enterprises themselves will also somewhat change the institutional environment (Battilana, Leca, and Boxenbaum, 2009; Leca, Battilana, and Boxenbaum, 2008). Consequently, continuous researches on the governmental function and role in organizational evolution of Third-front enterprises will be of particularly important theoretical and practical significance.

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