

**Influencing Mechanisms of Institutional Changes on the  
Organizational Culture of SOEs in China: The Case of  
Dongfang Turbine Co., Ltd.**

**YANG Yong**

Thesis submitted as partial requirement for the conferral of

**Doctor of Management**

Supervisor:

Prof. Francisco Nunes, Senior Lecturer, ISCTE-IUL, Departamento de Recursos  
Humanos e Comportamento Organizacional

Co-supervisor:

Prof. JING Runtian, Full Professor, University of Electronic Science and Technology  
of China, School of Management and Economics,

January 2012



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## **Abstract**

This thesis takes Dongfang Turbine Co., Ltd. (abbreviated as DTC) as a typical case of Chinese state-owned enterprises (abbreviated as SOEs). Case study is used as the research method, combining qualitative and quantitative analysis. Data was collected from different sources including public reports, newspapers, journals, a questionnaire survey and in-depth interviews so as to explore how the mechanisms of the institutional environment and change influence organizational culture. Through deep analysis, four stages of institutional change of SOEs, as well as the relevant basic characteristics of institutional environment, organizational culture and management style in each period have been identified. It was also found that the different institutional environments always required corresponding management styles fitting the specific characteristics of that period of time, and that the organizational culture enhanced the formation of this kind of management style through the core values historically formed across those periods of time. As the main theoretical contribution, a theoretical model was set up to analyse the connections among institutional environment, organizational culture, management style and organizational performance. The findings of this research have a significant practical value for SOEs, to assist them in their endeavours on how to create and change organizational culture to support their own development in today's China.

Key words: Institutional Environment, Organizational Culture, Management Style, Case Study in China

JEL: M14





## **Resumo**

Esta tese analisa o caso da empresa Dongfang Turbine Co., Ltd. (DTC) enquanto caso típico de uma empresa estatal chinesa. O método do estudo de caso é adotado na investigação utilizando-se análise quantitativa e qualitativa. A informação foi recolhida a partir de diferentes fontes incluindo documentos internos da empresa, relatórios, artigos na imprensa, estatísticas oficiais, bem como através de um questionário administrado às chefias intermédias da empresa e entrevistas a dez gestores de topo com a intenção de explorar a forma como os mecanismos da envolvente institucional atuam sobre a cultura organizacional e a influenciam. A análise permitiu identificar quatro fases de mudança institucional que afetaram as empresas estatais chinesas desde a implantação da República Popular da China bem como as características principais da envolvente institucional, da cultura organizacional e do estilo de gestão em cada um desses períodos. O estudo revelou também que as diferenças na envolvente institucional exigem diferentes estilos de gestão de acordo com as características de cada período e que é a cultura organizacional que promove o tipo de estilo de gestão através dos valores que historicamente se formaram na empresa através do tempo. Em termos de contribuição teórica, a tese propõe um modelo que permite analisar as interligações entre a envolvente institucional, a cultura organizacional, o estilo de gestão e o desempenho organizacional. Os resultados deste estudo têm importância prática significativa para as empresas estatais chinesas na medida em que as pode ajudar a criar e/ou a mudar uma cultura organizacional que as apoie nos seus objetivos de contribuição para o desenvolvimento da China de hoje.

Palavras chave: Envolvente Institucional, Cultura Organizacional, Estilo de Gestão, Estudo de Caso na China

JEL: M14



## **Acknowledgements**

I have finally completed my doctoral thesis after hardworking for one year and a half. I cannot help but thinking of those people who gave me great help in the process of my research, when the three-year study ends up with this thesis. Here, let me show my appreciation to all of you.

I would like to express my sincere thanks to my mentor, Professor Jing Runtian from UESTC. The profound knowledge, superb and amazing teaching skill, rigorous studying attitude and a character of modesty he has, are well worth learning in my lifetime. Professor Jing gave me detailed guidance and selfless help during the whole process from selecting the research subject, confirming the thesis structure, designing the research model, reframing the perspectives of the writing procedure. Especially when he stayed in USA as a visiting scholar, he not only asked several senior fellow students to be my counsellors, but also helped me to revise this thesis repeatedly through emails. His support from overseas helped me to complete the thesis on time, so that I could be one of the first to attend the thesis defence. Once again I would like to express my deep respect and heartfelt thanks to Professor Jing.

Simultaneously, I would like to express my heartfelt thanks to another mentor, Professor Francisco Nunes from ISCTE Business School of University Institute of Lisbon, Portugal. Although we have never met during my research, the emails and emotions have linked us together. He not only gave me theoretical guidance and modification of thesis, but also helped me to collect plentiful archives of research from other countries. All of these will be inscribed in the deepest place of my heart for the rest of my life.

I would like to thank my mates such as Liu Pu, Du Yifei, Zhang Wen, and Bai Shuaijiao. Liu Pu, the fellow student, and Du Yifei, my teacher, are just like my elder brothers. They helped me to design my in-depth interview outline, and joined in the interview together with me as well. During the process, they gave me so many suggestions on theories and thesis modification. Zhang Wen, the junior sister student, who often reminded me the schedule requirement of the thesis, has set up a bridge between the university and me. Bai Shuaijiao, the junior fellow student, helped me to revise the English version of the thesis. Therefore, I would like to thank my senior

fellow students, junior sister students and junior fellow students, who are the reflection of Professor Jing.

In addition, I would like to express my heartfelt thanks to my leaders and colleagues in Dongfang Turbine Co., Ltd (DTC), who gave me substantial support for my research. The leaders such as Ding yi, Chen Kuanjin, Zhang Shengquan, Xu Zhengwei, Zhang Zhiying and Zhang Wenfeng participated in my in-depth interviews with enthusiasm, and introduced those significant events they experienced without any reservation. They not only helped me to finish my dissertation, but also made me learn excellent qualities of leadership and the management experience of top leaders. Yin Shoujun, Manager of Organization Department, helped me to organize the questionnaire survey. Sun Yansong, Secretary of Propaganda Department, helped me to collect a large amount of historical data. What they have done impressed me a lot. And I will remember forever.

I also would like to express my thanks to Xiao Wen, Sun Ping and Chen Yang, the teachers of UESTC's DBA Project Team. During my study, Xiao Wen, my teacher, really impressed me with her pursuit of excellence and fluency in English. The hard work of Sun Ping and Chen Yang guaranteed us to complete our studies successfully. I want to extend my sincere thanks to teachers of DBA Project Team for their concern and help.

Finally, I would like to pay my highest respect to the experts and scholars who are going to read and appraise this doctoral thesis.

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## Chapter 1: Introduction

### 1.1 Background of Research

When we discuss organizational culture, the historical bases, the social environment, the traditions, and the institutions should be given high attention to (Weber & Dacin, 2011). Although, the focus of this research is the mechanism of how institutional changes influence organizational culture, especially organizational cultures of state-owned enterprises (abbreviated as SOEs), there is the need to give briefly the background of this research, in order to explain the research questions clearly and dig deeply in the pursuit of believable and meaningful findings. In order to understand the macro-social and historical setting of this research, the concept of “Third Line” will be explained, followed by information about the background of SOEs to which the research object Dongfang Turbine Co., Ltd. (abbreviated as DTC) belongs.

DTC is located in the Third Line region and experienced this long historical period.

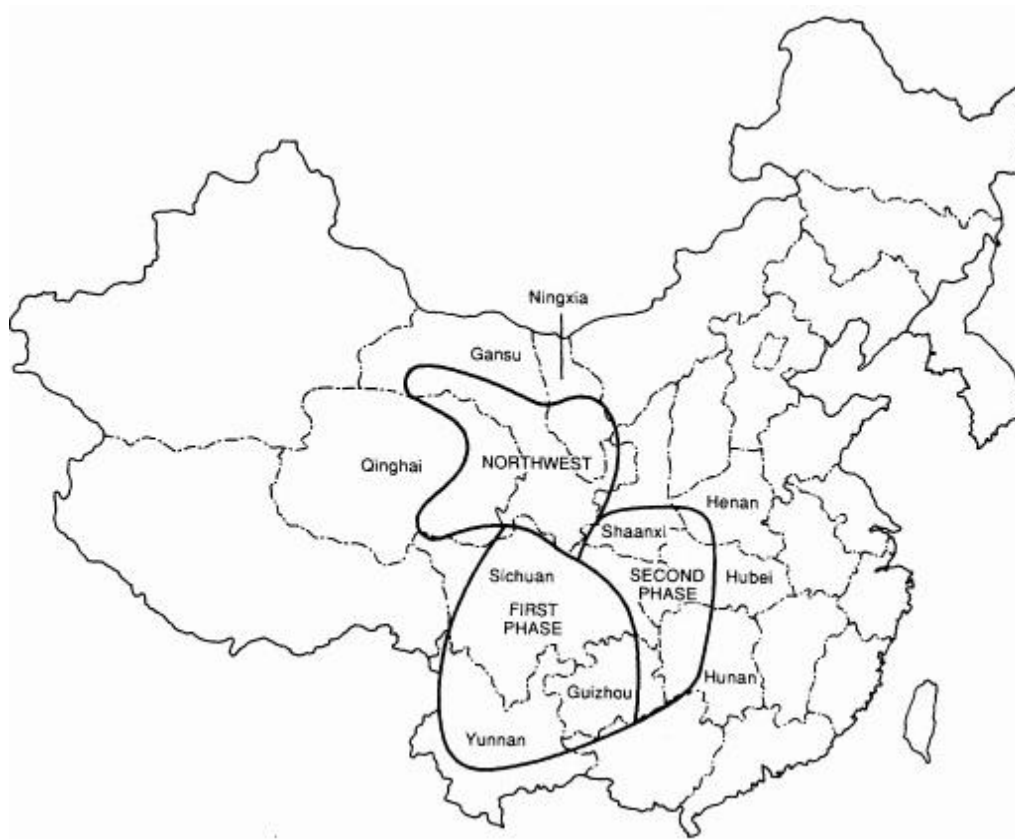
*“We must pay high attention to the Third Line which can help us against the imperialists, against the revisionists...through the Third Line, we have nothing to fear even if war breaks out.”*

*—Mao Zedong, Jan., 1965.*

After the liberation of New China in 1949, the central government believed the international military situation to be extremely serious, and tried to build up strong military forces in case of an early war on a big scale. Advocated by Chairman Zedong Mao, a massive construction of military-industrial complexes was carried out in 1950s-60s in order to establish three lines of defence (the first being coastal, the second, central, and the third, western) in China (Naughton, 1988). Considering the first line as highly vulnerable to external threats, most investments have been put into the interior regions especially in the western part of the country, that is, the third line of defence (popularly known as the "third line"). This strategy aimed to create an entire industrial system in a big naturally remote and strategically secure area (Naughton, 1988) as shown in Figure 1-1. This period of history gave all the SOEs in the Third Line region a kind of special experience that enabled them to form a set of common characteristics. However, due to diverse factors, like their different historical development, their having been set up in different locations and their being led by different

leaders, these SOEs have developed different characteristics as well as different organizational cultures and management styles.

**Figure 1-1 Chinese Third Line Regions**



*Source:* The Third Front: Defence Industrialization in the Chinese Interior (Naughton, 1988)

State-owned enterprises in China:

According to Yin Shihe (2009), a state-owned enterprise designates different kinds of state-run institutions or state-operated enterprises. Internationally SOEs only refer to those enterprises that are invested or controlled by the central government or federal government, however, in China, SOEs also comprise those corporations invested and controlled by local governments.

Therefore, except sole corporations with limited liability, an unincorporated economic organization with total assets belonging to national administrative authority and registered as legal persons, according to the “Regulation of the People’s Republic of China for Controlling the Registration of Enterprises as Legal Persons”, can be identified as SOEs in China.

Lu Chunheng ( 1997 ) pointed out in his “Re-recognition on the Status, Function and Benefit of the SOEs” that SOEs occupy decisive positions in Chinese society, and always play an irreplaceable role in the past, at present and in the future (Jing Lu, 1997). Their status and functions are not only realized in reflecting economic aspects, but also political and social aspects. In terms of economy, SOEs control the economic lifeline of the nation and influence the development direction of the economy. For instance, the domestic infrastructures (such as post and telecommunications, civil aviation and railways) are completely owned by SOEs in China. SOEs account for more than 90% in the energy sector, electric power, raw coal and oil exploitation, and account for approximate 80% in raw material sector, metallurgical and chemical industry. In the political aspect, SOEs also take a very important role because they are core to the foundation and symbol of the Chinese socialist system and are a reminder that the basic materials are owned by the country and by the whole society. After the foundation of the People’s Republic of China (PRC), the private capital was confiscated by the country, and the nature of the national industry and commerce was effectively transformed to socialist system. This transformation made the assets of SOEs to have absolute predominance in various industries, thus giving an essential and important guarantee for China to go forward along the road of socialism. In terms of society, SOEs take the responsibilities of speeding up the social progress and maintaining the social stability. For instance, besides providing a significant number of jobs, SOEs establish many public services and facilities, including medical and health care institutions, vocational middle schools, training bases, educational bases, literature and art organizations, public organizations, public security organs and procuratorial organs. SOEs solve employment problems and take some social management functions, which, to some extent, cover some deficiencies or vulnerabilities of governments at all levels. SOEs are then an important force to promote the social progress, to speed up the cultural and ideological progress, and to maintain the social order, while they are creating wealth for the country.

By playing a significant role in the national economy and social development with a powerful control, SOEs exert great influence and are a driving force while enjoying unique advantages that can support the vitality of more social oriented governance systems. After more than thirty years’ practice in reforming and developing, people have changed their previous perceptions of SOEs as being superfluous, extensive, bureaucratic and inefficient like they used to be in the old days. Experts in China and abroad have begun to re-evaluate the status, functions and development prospects of these SOEs, and explore their institutional features and cultural meanings.

### Dongfang Turbine: a special case of SOE

Dongfang Turbine Co., Ltd. (abbreviated as DTC), is one of the top 53 key SOEs under the management of the Chinese government. For the 45 years of its establishment, DTC has provided power generating equipment producing more than 100 Million KW and has created the miracle of continuous profit growth and steady development. During its process of development, starting from scratch, DTC has gone through an array of experiences and has grown up. In this process, its organizational culture has been gradually formed and matured developing such unique features that it has become the most representative culture among Chinese SOEs. For instance, DTC's culture played an important role during the catastrophic 2008 earthquake in Sichuan province that destroyed all the company's premises killing hundreds of workers and guided the enterprise to overcome all the difficulties and reconstruct a new base with unexpected speed.

During the reconstruction, all the company members tried their best to achieve the organizational goals without thinking about their own families or about themselves. As a matter of fact, some of them faced many difficulties at that time since they had lost so much in this disaster. As a great achievement of post-disaster reconstruction, the company stands today at a new high position towards world-class enterprises. Moreover, practice has proved that the long-term cultivated organizational culture that out broke in the earthquake crisis is an effective and outstanding culture, which has become an example for other SOEs in China and a model raced to study by many experts.

Several mechanisms (such as promotion) have played an important role in the construction and development of DTC and of its organizational culture. Ten leaders have served in DTC since its establishment. The first leader, who founded this enterprise and developed the turbines with 0.3 Million KW independently, not only initiated DTC's development history, but also set up the influential organizational culture that has been admitted and developed by the staff. The following successors made great contributions to DTC's technology, quality, marketing, service, reform, management and development, and continued to develop the organizational culture through internal promotion, which has enabled the leaders to absorb the company values and integrate them in their management style influenced by former generations of leaders. By this way, DTC's organizational culture has been inherited generation after generation, developing along the direction entrenched at the beginning albeit changing as the environment changes.

At present, these 10 leaders still serve in DTC, which provides favourable conditions for studying DTC's organizational culture along its history. DTC has been completely destroyed by the catastrophic 2008 earthquake and experienced full reconstruction in a new base. At the stage of reconstruction, the institutional environment of the enterprise has significantly changed and there has been a change in the leadership, factors that may have a great impact on the organizational culture of enterprise. Therefore, DTC's previous outstanding culture is facing great challenges and it is very necessary and urgent to figure out how the enterprise should make appropriate adjustments so that the organizational culture matches the new institutional environment, so as to implement its development strategy accordingly.

## **1.2 Issues under Study**

In its development process, DTC has undergone frequent and major institutional changes. In how many stages can these institutional changes be divided? How do the characteristics of each stage impact the organizational culture as well as values and behaviours of the leaders? How do the leaders adjust the organizational culture so as to match the characteristics of institutional development stages? These issues are of great importance since they are very helpful for understanding the connection between institutional change and organizational culture.

In taking the mechanism of how the institutional changes influence organizational culture in SOEs as an object and in choosing DTC as a typical sample of SOEs, from the perspective of culture, this thesis aims to explore a series of issues like the connection between institutional changes and organizational culture, and the function of the leadership in organizational culture. The findings of this research aim at contributing to advance our understanding about the research questions as well as on related theoretical issues. The findings may also be precious for both DTC itself and other SOEs. On the one hand DTC may learn something useful in its continued endeavour to develop its organizational culture; on the other hand, such findings may also be of interest for other SOEs. In other words, this work may not only provide references for DTC in its development of organizational culture in the new era, but also offer a theoretical guidance to the sustainable development of the SOEs.

This thesis consists of six chapters as follows:

The first chapter presents the introduction, which describes the background, issues, significance and the method applied in this study. The second chapter makes a review and a summary of theories on organizational culture and on the institutional change of SOEs in

order to point out the shortcomings of existing studies while indicating the importance of this thesis. The third chapter explains the concept of study design which includes the research model, object of study, in-depth interviews, and questionnaire survey. The fourth chapter describes the characteristics both in the development process and organizational culture in the SOEs, and also analyses the impact of the institutional environment on the organizational culture, which represents the key focus of this thesis. The fifth chapter introduces how DTC's organizational culture showed up during the earthquake recovery and explores the prospects for change of the organizational culture in a new environment. The sixth chapter is a conclusion of this thesis, notes its main contributions and explains the potential problems that may exist.

### **1.3 Research Significance**

#### **1.3.1 Theoretic Significance**

In theoretical terms this thesis aims:

( 1 ) To explore the factors and mechanism impacting the formation and development of the culture in SOEs, in order to identify the formation mechanism of the culture in SOEs and to improve the theoretical study of the organizational culture in China's SOEs;

( 2 ) To reveal the impacting mechanism on the culture of SOEs due to changes of internal and external institutional environments so as to provide a new theoretical perspective in the study of SOEs culture;

( 3 ) To analyse the role that the leadership plays in the mechanism through which the organizational culture in SOEs interacts with the process of institutional changes, so as to improve it.

( 4 ) Last but not the least, this research explores the connections between organizational culture and its sources, including historical bases, social environment, traditions, and institutions. The interaction between organizational culture and its sources will be also discussed. Thus, this research aims at advancing our understanding of organizational culture. It is also a forceful response to scholars like Weber and Dacin (2011) who advocate that researchers should reconnect organizational culture with its sources.



### **1.3.2 Practical Significance**

The findings of this research also aim at having a significant practical meaning. By studying the institutional changes and evolution of organizational culture in SOEs and further analysing the factors and mechanisms impacting on SOEs culture, the findings of this research can give theoretical foundation and practical guide to the cultural construction, reform and development of SOEs in China beyond the specific case of DTC. These will not only enhance the development of organizational culture but also be helpful for seeking the superiority and vitality of the SOE system and find out the theoretical basis for many of these companies to maintain continued growth over a long-term period, and improve SOEs' competitiveness, control, influence and drive. It is therefore an important and significant study for speeding up the construction of a well-off society.

Having suffered from the 2008 earthquake, DTC had and still has to face many changes and problems. DTC has put its development goal at a higher position, from a first-class enterprise in China to a world-class enterprise. In terms of business scope, the enterprise is shifting from being simply a manufacturer to a service-oriented manufacturer. In the market, the enterprise turned from the domestic market to the international market. In diversity employment, the form of employment in the enterprise is being transformed from contract employment to mixed employment. In location, the enterprise moved from a small town (Hanwang) to a city (Deyang) and is setting up factories across the country. In organizational reputation, the enterprise has won a higher reputation among the public instead of in the industry only. All of such changes are bringing severe challenges to the existing culture of humanity, which has been mainly regional and closed. It is therefore of great realistic significance to provide a powerfully cultural support for the enterprise to endeavour the enrichment and design of a new organizational culture in the light of these new characteristics, so as to become a world-class enterprise with first-class equipment, the most advanced technology, rigorous management and strict quality control, and achieve the strategic goals in the central government 12th Five-year Plan.

### **1.4 Research Design**

Based on the organizational culture theory and the institutional change theory, the thesis uses DTC as a case study (Eisenhardt, 1989; Yin, 2009) and follows the method of key- event analysis, combining qualitative and quantitative analysis as well as historical studies in order

to analyse the institutional changes of SOEs and the process of evolution of organizational culture, and to explore the mechanism of how institutional environment and institutional change influence organizational culture.

## **Chapter 2: Literature Review**

### **2.1 Overview of Organizational Culture Research**

#### **2.1.1 Definition of Organizational Culture**

The term “organizational culture” was first mentioned by E. Jacques in 1951. Then Pettigrew with *On Studying Organizational Cultures*, published in the 1979 issue of *Management Science Quarterly*, marked the formal recognition from academic circles of organizational culture in USA (Hofstede , 1990). However, “culture” was not received by commercial publications as a standard concept until 1982. The concept of “organizational culture” was thought to be popular due to the publication of three seminal articles on organizational culture: *Theory Z: How American Business Can Meet the Japanese Challenge* by Ouchi (1981), *In Search of Excellence: Lessons from America’s Best-Run Companies* by Peters & Waterman (1982), and *Corporate Culture* by Deal & Kennedy (1982). After these three popular works were published, the academic sector of organization theory entered a new era with an outpouring of researches and studies on the topic. Among numerous researchers, a batch of excellent academics in the organization theory field, such as Schein, Ouchi and Hofstede, carried out fruitful researches on organizational culture in their different specialized subfields.

In the collaborated book named *Culture, A Critical Review of Concepts and Definitions*, Kroeber and Kluchhon (1952) enumerated 164 different definitions of culture for the eight decades from 1871 to 1951, while Willen Verbeke and his co-authors (1998) found 54 definitions as well. Smircich (1983) pointed out that many scholars had different explanations on organizational culture, since the word of culture was variedly used in the organizational management field, which made people have different opinions from different points of view. For instance, Ouchi (1981) regarded organizational culture as a group of symbols, rituals and myths; Cook & Rousseau (1998) suggested it to be the mode of thinking, acting and believing which was shared by members of a social unit; Sathe (1985) considered corporate culture as a shared form of basic value, faith and assumption lasting long within the organization; Martin et al. (1985) thought that corporate culture was the combination of attitude, value and faith commonly owned by corporate members; while Barney (1986) defined organizational culture as a complex aggregation of values, beliefs, assumptions and symbols used to guide the

corporate behaviour.

Among the diversified definitions of organizational culture, the explanations given by Schein (1990), O'Reilly (1996) and Hofstede (2005) were widely accepted. Schein (1990) argued that organizational culture was a pattern of assumptions which were created, found and developed by a given group as they solved those problems from external adaptation and internal integration, and were proved to work validly, therefore had been used to educate new members to perceive, think, and feel those problems correctly. O'Reilly (1996) described that organizational culture was a set of values which were widely shared by organization members and considered as a kind of internalized normative belief that guided people's behaviours within the organization. In a line of thought characteristic of the Netherlands, Hofstede (2005) stated that organizational culture is a collective mind-set, a complex of values and practices, with values representing the core and practices consisting of rituals and symbols.

## **2.1.2 Research on Organizational Culture Measurement**

### **2.1.2.1 Background of Organizational Culture Measurement**

The research on organizational culture is mainly based on two theoretical foundations: (1) Anthropology, with an underlying view that the organization itself represented culture; and (2) Sociology, arguing that the organization had culture. According to the different theoretical foundations, the research on organizational culture follows two approaches: (1) Functionalism, according to which scholars consider that organizational culture reflects collective behaviours. (2) Semiotic approach according to which organizational culture was is rooted in the explanation and cognition of individuals. The research on organizational culture assessment adopted the opinions of the school of functionalism, which suggests that organizational culture and the attributes of organizations are distinctive from other organizational phenomena by means of measurement, and can be used to predict the efficiency of organizations or employees (Schein, 2010).

With the deepening of comprehension of the basic theory of organizational culture, the study on the measurement of organizational culture emerged slowly since 1990s. The rise of research on the assessment of organizational culture is based on two background factors. One is the logic of theory development. First, according to the differences of leading modes, Deal and Kennedy (1982) and other scholars classified the organizational culture and conducted research on its assessment. Second, based on the Competing Values Framework (CVF) proposed by Quinn and Rohrbaugh (1981; 1983), Quinn and Cameron (1983), Denison (1996)

and other academics a series of models and tools for organizational culture assessment was developed. In addition, as many scholars made studies on the relation between strategy and culture, some assessment models were designed later to measure the quality of corporate culture based on the standard of “matching culture with strategy” (e.g. Hickman, 1984; Barnett, 1999). Furthermore, the generation of new management theories including knowledge management, virtual enterprise and total quality management (TQM) (Porter and Parker, 1993) also stimulated the rise of research on the assessment of corporate culture. More and more researchers highlighted the relation between management thoughts and organizational culture, discussed and explored the cultural foundations of these theories and therefore promoted the organizational culture assessment which takes the implementation results of certain management thoughts as assessment standards.

The other background factor in the assessment of organizational culture is the direct background element – practice development resulting from three main causes:

(1) Enterprise merger and cross-cultural operation & management: The cross-cultural management problems caused by enterprise mergers, transnational operations and other expansion strategies gradually became people’s concerns. It was necessary to conduct measurement and assess in detail the related corporate culture before and after the merger in order to realize the perfect blending of corporate culture.

(2) Construction of organizational culture. The first step to build up a sound organizational culture is to know about the current status of its own culture, only upon assessment, the established organizational culture can be adopted to improve the implementation results with a definite purpose.

(3) Assessment on enterprise management: Corporate culture has been gradually developed into a key indicator in the process of the assessment of corporate value, human resource management and the implementation results of other management theories, which led to the rise of researches on organizational culture assessment (Sarros, Gray and Densten, 2002).

#### **2.1.2.2 Organizational Culture Measurement Models in China and Abroad**

Two research schools of organizational culture were generated in 1980s. One school, adopting qualitative study, was represented by Schein from Massachusetts Institute of Technology (Schein, 1989; 1992; 1996). Schein conducted systemized discussions on the concept and deep structure of organizational culture, proposed field investigations and field interviews, and formulated the steps of corporate culture assessment. However, since this

method does not support objective measurement, comparative studies were difficult to implement when dealing with the relationships between organizational culture and organizational behaviour and benefit. This school was thus criticized. Another group, focusing on quantitative study, was represented by Quinn (Quinn and Rohrbaugh, 1981; 1983; Quinn and Cameron, 1983, 1999) from the College of Business Administration, University of Michigan. They stated that organizational culture can be studied based on certain characteristics and from different dimensions. Therefore, they created several models of organizational culture, which could be employed in the measurement, assessment and diagnosis of corporate culture. However, it was thought that this method could only provide a shallow point of view on corporate culture, and did not touch in-depth its meaning and structure, and thus was also criticized. For example, Schein (1989) commented that some people who did quantitative organizational research did not know exactly what they measured.

Due to the variety in researchers' training backgrounds and their different concerns on topics and methods, the research on organizational culture assessment has been equally diversified. In terms of method the organizational culture measurement can be separated into qualitative research and quantitative research (Sarros, Gray and Densten, 2002). Among the qualitative researches, the clinical research and the clinical descriptive method proposed by Schein (1990) have been influential, while in the quantitative field, the Organizational Culture Profile (OCP) developed by Chatman (1994), the Organizational Culture Questionnaire (OCQ) developed by Denison (1996), the measurement scale created by Hofstede (1990), as well as the Organizational Culture Assessment Instrument (OCAI) prepared by Quinn and Cameron (1983) have been recognized by most of academics. Among Chinese scholars, the Values in Organizational Culture Scale (VOCS) proposed by Zheng Boxun (1990) is widely spread. All these measurement scales will be discussed below:

(1) Clinical research (Schein, 2006): Schein proposed four steps to unveil the organizational culture: (a) Analyse the process and content of "socialization" of new members; (b) Analyse people's response to important organizational events; (c) Analyse faith, values and assumptions of "culture creator" and "culture carrier"; (d) Explore and analyse together with insiders the unveiled or observed abnormal phenomena and bewildering characteristics. Culture is a profound phenomenon, therefore when conducting organizational culture research, Schein emphasized the need for thorough study, including participation and investigation in clinical research and clinical descriptive method, finding out the distinct

common understanding between group members, and persuading them to talk about the internal information. Only in this way the underlying culture assumptions hiding behind the organizational behaviours can be found. The most important thing is that clinical research can precisely and promptly identify the distinct cultural assumptions or those related to significant culture issues generally in one day, which is more helpful to the organization than the questionnaire research that may last for several months. Those new and important data would be revealed one by one when clinical investigators observe how the organizations deal with their own cultural realities.

In favour of qualitative research, Schein held the opinion that culture cannot be evaluated through questionnaires, since people do not know what should be questioned and the creditability and validity of answers cannot be guaranteed. In addition the questionnaire survey cannot provide an opportunity for the informants to speak out deep values and basic assumptions underlying culture. Instead, culture can be evaluated more efficiently through individual and group interviews. Culture evaluation should focus on the concrete problems of organizations, or else, it would be in vain.

(2) OCAI Scale (Cameron & Quinn, 1999): The authors developed the OCAI Scale based on the Competing Values Framework. The purpose of the OCAI is to assess six key dimensions of organizational culture. The six dimensions include dominant characteristics, organizational leadership, staff management, organization glue, strategic emphases and criteria of success. For a certain enterprise, its corporate culture at a certain time point is a mixture of four types of culture: clan, adhocracy, market, and hierarchy. A section drawing generated after the OCAI measurement can visualize this concept in a quadrilateral dimension. OCAI has been considered very useful in identifying the type, strength and consistency of organizational culture

(3) OCQ Scale Analysis: Denison (1995) created a model that can describe the cultural traits of efficient organizations. This model is based on the concept that there are four types of cultural traits (adaptability, mission, consistency and input) significantly related to the effectiveness of organization. Each cultural trait corresponds to three sub-dimensionality. There are 12 sub-dimensionality in total and each one has a specified explanation. Compared with OCAI Scale, since OCQ Scale by Denison consists of more sub-dimensionality, it can reflect more details about organizational culture. Having been tested by practices for fifteen years in other countries, it is widely recognized.

(4) OCP Scale Analysis: In order to analyse the relation between Person-Organization

Fit and individual efficiency from the perspective of fit, Chatman (1994) developed the OCP Scale which deals with corporate values. The initial OCP Scale consisted of 54 measurement items, reflecting the typical characteristics of corporate values. Chatman believed that the OCP Scale can distinguish seven cultural dimensionalities (innovative, stable, people-oriented, outcome-oriented, detail-oriented, aggressive and team-oriented). In the practical measurement, each dimensionality may correspond to different measurement items. The OCP is one of the values measurement scales frequently adopted in Western literature. The founder once carried out research on the relations with organizational culture and industrial characteristics, industrial technologies as well as industrial growth, taking 15 companies in four different industries within the service field as samples.

(5) VOCS Scale: In terms of organizational culture, this is a valuable scale which was created by Zheng Boxun (1990) who regarded organizational culture as a kind of internalized normative belief that can be used to guide the organizational members' behaviours. The VOCS Scale is composed of nine dimensionalities in total, namely, science for truth, customer-orientation, pursuit of excellence, innovative spirit, sharing happiness and sorrow, team spirit, good faith, performance, social responsibility and good neighbourliness.

Which other contributions have Chinese scholars given to the field of measurement of organizational culture? Since 2002, mainly borrowing ideas from OCAI Scale, China Corporate Culture Measure Centre (CCMC) established an independent system for the corporate culture measurement based on related practices of many Chinese enterprises (Zhou Yi, 2007). The scale consists of six parts closely connected with each other, including the type of corporate culture, concept orientation of corporate culture, core values of corporate culture, environment of corporate culture, leadership of corporate culture, individual value and professional tendency assessment. The system assessed the internal movement, changing rules and orientation of corporate culture from the view of the organization and its members, precisely detected the inherent impetus and barrier, and provided scientific and objective foundations for the diagnosis, extraction, implementation and even reform of corporate culture. Currently, this measurement system has been effectively employed in a number of industries, and a more complete Chinese culture measurement database is starting to take shape.



## **2.2 Research Review of SOEs'**

### **2.2.1 Development Stages of SOE's Culture**

Yin Shihe (2009) pointed out that SOEs have experienced an arduous process to develop its own culture, thus reflecting the evolution and development of SOE administrative theories and approaches. To sum up, in the last 50 years three stages may be considered:

(1) During the period from the completion of the three great socialist reconstructions in 1956 to the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party in 1978, the culture of SOEs was highly centralized because in this period the executive management of SOE was somewhat constrained under the unified leadership of the Central Committee, thus there was little autonomy in decision-making.

(2) In the period from the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party in 1978 to the Third Plenary Session of the Fourteenth Central Committee of the Chinese Communist Party in 1993, SOEs exercised a dual management mode which was a government-led mode, hence the culture of SOEs at that time was characterized by both conservatism and innovation. Since the pilot establishment of modern corporate system in 1994 till now, SOEs have adopted, in the legal sense, a self-management of their business based on the policy of "independent operation, self-financing, self-development and self-restraint", and the SOEs' culture in this period has been gradually affected by the market economy system where these companies have now to compete.

### **2.2.2 Connotation of Culture of SOE**

Due to their political, national and social traits, the culture of SOEs shares common characteristics with other enterprises, but it is also distinctive for its special connotation. With his literal studies on the issue of organizational culture of 114 large-scale SOEs directly subordinated to the national government, Lian Chuande (2009) pointed out that "innovation, honesty, excellent quality, pioneering spirit, harmony, people orientation, pragmatism, service foremost, science & technology and win-win are frequently quoted words" in relation to SOEs. These words can be classified into four categories: business and operation oriented, HRM oriented, marketing oriented and strategy oriented, among which the "business and operation oriented" theme occupies a dominating position.

## **2.3 Research Review of Institutional Environment of SOEs**

### **2.3.1 Approach to Institutional changes of SOEs**

Institutional change plays a key role in economic development (North, 1991). Deng Dacai (2001, 2002) summarized that there are generally two approaches to institutional change. One is the demand-induced institutional change (“induced institutional change” for short), and the other is the mandatory institutional change. The two approaches must be adopted alternately to make up for the defects and insufficiency of both sides. Since the reform and opening-up in China, the institutional change of SOEs has been typically labelled as “mandatory institutional change”.

### **2.3.2 Stages of Institutional Change of SOE**

Most scholars consider that the institutional change of SOEs consists of three stages (Zhang Dicheng, 2008; Yu Yan, 2009; Luo Jing, 2010). The first stage of institutional change occurred approximately between 1978 and 1981. In the framework of planning system prior to the reform, SOEs completely followed the government plans and directions, and operated without any decision-making rights, which led to inefficiency in operation and slowdown of national economy development because all the members, especially the front-line workers, were inclined to get an equal share regardless of their contribution. In this situation, the government took all the responsibilities for profits and deficits of SOEs, thus the way to get more financial benefits and the measures to revitalize SOEs were the foremost concerns of the government. Therefore, in this first stage power decentralization, shared interest and the implementation of economic responsibility system became their first choice. In this period enterprises started to be encouraged to exercise their management power, through allowing managers and workers to be stimulated not only by their sense of duty but also by additional rewards. These measures could improve the profits of SOEs and the financial revenue of the government. However, the policy did not draw the lines of profit sharing between government and SOEs. On the one hand, these measures expanded the autonomy of enterprises, but on the other hand, they hindered an effective supervision of government to SOEs due to the information asymmetry, thus offering SOEs an easy way to encroach on the interests of the state such as through the indiscriminate issuing of bonuses. Consequently, the government introduced new policies such as taxing for profits and establishing contract systems to ensure its profits and make the regulatory costs lower.

The second stage of SOE institutional change occurred in the 1980-1992 period. This reform further allowed companies to expand their autonomy and gain part of residual claims, through which the state also has partially met the purpose of reducing regulatory costs. However, the new balance was soon broken like in the case of the contract system where the contractors would take advantage of information asymmetry and claim as much profits as possible during the contracted period by over-consuming raw materials and investing in unnecessary equipment. The contractors' strategies re-awoke the government to the fact that these operators did not assume any responsibility as owners yet they could directly lead to the owner's equity loss. It was at that time that the government began to consider the problems of ownership reform.

Meanwhile, the constant expansion of autonomy offered the operator good opportunities to get gradual control of SOEs, and in this situation the government expected to reduce regulatory costs by diversifying the stock equity of the SOEs. Following this trend, some institutional changes were introduced as inevitable and necessary choices, such as to invigorate and control large enterprises while relaxing control over smaller ones; to establish shareholding system and modern enterprise system.

The year 1992 saw the third stage of institutional change. In accordance with the principal-agent theory, the agent is obliged to take some risks in the incentive contract, or he may, for their own interests, put the interests of the principal unattended, leading to the interests of the principal being finally damaged. In order to avoid this problem, if the agent is a risk neutral participant, the agent is made to take full risks and become the only residual claimant to achieve the optimal effect. Therefore, medium-sized and small SOEs were privatized. At the same time, the operators of large SOEs asked for more rights of residual claimants, thus leading to equity incentives and to other reform measures. However, the operators always want more benefits while the government always wants to reduce regulatory costs and this caused a new round of game. Now, the changes are mainly shown by a reduction of state-owned shares, management buyout (MBO) and other reform measures.

Lai Rong (2005) considered that the SOEs are reformed in two ways. The one is the property right reform. The enterprise institution innovation should be realized by the enterprises' constant autonomy expansion, by the continual enhancement of the enterprises' independent awareness and by obtaining their identity of legal person via legislative (institutional) means in the end. The other is the marketization. As the market mechanism is applied to more fields and further developed, the marketization of commodities would

promote the commercialization of both labour and capital forces.

Zhai Yan and Li Guangnian (2009) suggested that the “Unit System” reform of SOEs has undergone a series of experimentation processes including decentralization, tax for profits, contracting and leasing in order to set up a modern enterprise system and privatization.

In *On Institutional Environment Changes of SOEs since the Reform and Opening-up Policy*, Sun Jiwei (1998) indicated that the institutional changes of SOEs in China were mainly reflected in three aspects: one was the change in the behaviour of subjects from rational non-economic individuals to rational economic individuals; the second was the change from centralization of power to decentralization; the third was the differentiation of interest groups.

### **2.3.3 Research on the Relationship between Institutional change and Corporate Culture**

Jenna and Scott (2006) established a model on institutions and cultural path dependence, describing the institution externality caused by cultural diffusion. Institutions produce behaviour rules, which in turn constitute part of culture. Since culture affects the applicability of institutions, behaviour rules, therefore, would influence the future institutional choices. The interaction between culture and institutions gives birth to path dependence. As his model shows, both past institution selections and the sequences of institution formation are of great significance.

In *Institutional change and its Cultural Development*, Zhang Zhixue, Zhang Jianjun and Liang Junping (2006) indicate that institutions are tangible constructs, tend to be presented in forms of rules, regulations, norms, disciplines and other forms. Institutions make the individual value orientation fit into the organizational objective control so as to achieve the correspondence and coordination of individual behaviours and actions of the group to which they belong. However culture is intangible. It tends to be reflected by the enterprise core philosophy and values embedded in the staff’s mind, and reflected in the activity of enterprises, physical products and staff behaviours. Institutions are just a series of external constraints before being accepted by the staff psychologically, that become institutional culture when they are mentally identified and voluntarily followed by the staff, which can help to restrain people’s behaviours continuously and fill the gaps of institutional restrictions.

Enterprises in the institutional change require a corresponding deep culture to go along with, which frequently lags behind the institutional change. Leaders of enterprises tend to

look far ahead and advocate the needed culture that is applied to the management process to encourage people's conscious behaviours and are reflected in a series of activities within a specific enterprise. This kind of culture is normally reflected in production, services and operation and can produce a more unified staff ideology.

## **2.4 Deficiency in Extant Literature**

As shown in the above literature review, scholars in China and abroad have produced substantial research on the definition and assessment of organizational culture as well as on its influence on performance, and abundant theoretical and practical achievements have been made. However, there are still some deficiencies in extant literature.

For the field of SOEs, maybe because Chinese SOEs are a unique phenomenon due to their past history and formation, very few research has already been done so far and only a fragmented probe exists, most of which chiefly concentrated on the aspects of general management. As for organizational culture of SOEs research, the extant research is mostly normative and confined to its significance and content. In what concerns institutional change, current research mostly discusses the stages, paths and costs of institutional change. However, the influence of the institutional environment of SOE on leadership values, core philosophy, behavioural norms and organizational culture, as well as the influence of organizational culture of SOE on the HR policy and social responsibility are still a wide gap that needs to be filled. This provides a good opportunity for this research, and this is the innovation and value of this thesis.



## **Chapter 3: Research Implementation Process**

### **3.1 Object of Study**

DTC is taken as the object of study in this thesis. As the successor to Dongfang Steam Turbine Works (DFSTW), DTC started to be constructed in 1965 as a Third Line company, was founded in 1966 and put into operation in 1974. DTC is subordinated to Dongfang Electric Corporation. Currently DTC is a state-owned hi-tech enterprise engaged in research, design and manufacture of large equipment for power stations. It is also one of the top 100 enterprises in mechanical industry and one of the three major production bases for turbines in China.

Over the years, following the corporate tenet of “Green power, benefit for human beings” and adhering to the industrial development idea of “Produce one generation, reserve one generation, develop one generation, conceive one generation”, DTC endeavours to introduce, digest and absorb advanced technologies and makes independent innovation, constantly developing new products to meet market demand. With the implementation of the strategy characterized by “Developing various power products simultaneously”, equipment for thermal power, nuclear power, wind power, gas power and solar power are currently produced, and the technical quality of these products has reached or is being close to reach the advanced level in the world at the present.

DTC is also involved in some other industries including marine turbine, chemical industry, automatic control, environmental protection, surface engineering, transportation and seawater desalination. After 40 years of indomitable hard work and pioneering development, DTC’s core manufacturing capacity has come up to 28 million KW with the annual production value and sales revenue of more than 20 million Yuan, which creates the miracle of no financial loss so far since commissioning. Up to now, DTC has produced more than 1,000 sets of various types of equipment for power stations with the installed capacity exceeding 200 million KW, which accounts for more than 30% in China’s turbine market. Until now, the products are widely sold to 27 provinces (including autonomous regions) in China and many other countries all over the world.

On May 12th, 2008, a catastrophic earthquake struck DTC's production base in Hanwang Town, Mianzhu City. The buildings collapsed, the equipment was destroyed, and the staff dormitories crumpled, thus, Hanwang base lost most of its production and living capacity. The Party Central Committee and the State Council attached such great importance to DTC's massive destruction that the Party and State leaders Hu Jintao, Wu Bangguo, Wen Jiabao, Li Changchun, Li Keqiang, Zhang Dejiang and Guo Boxiong and the provincial and local leaders Liu Qibao, Jiang Jufeng, Fang Xiaofang, Chen Xinyou came to the Hanwang base many times to check the destruction and arrange the post-disaster reconstruction. With the support from the Party Central Committee and the State Council and the help of people from all circles, the staff of DTC got back on their feet and strove to save lives and overcome the adversity through greater production and carried out the earthquake relief works with post-disaster reconstruction, in order to recover the loss from the earthquake.

After careful verification, DTC's new base, covering an area of more than 2600 Mu (about 433 acres), was launched in Bajiaojing Town in Deyang, an Economic Development Zone, on August 1st, 2008. At the same time, after just little more than one year's construction, "DTC Xinyuan" with an occupied area of more than 200 Mu (about 33 acres), containing more than 4,000 sets of permanent resettlement houses for the staff, was basically completed in advance and put into service before October 30, 2009. The three years' reconstruction tasks have outperformed the initial plans and were accomplished within two years. On May 10, 2010, a brand new base of DTC rose straight from the ground in the New District of Bajiaojing. As a result, a new DTC with an optimized layout, complete testing and verification system, greatly improved equipment level and more competitive industry chain was reborn. The staff in DTC fulfilled their solemn promise of "Building a new DTC within two years", making DTC become a world-class turbine manufacturer with unconventional "Developing Speed" and amazing efficiency.

The miracle greatly surprised world famous companies such as GE and Mitsubishi with what happened in DTC. During the three years of earthquake relief, with the great support of the Party Central Committee and the State Council as well as the help of society and the firm leadership from the top management of the Company, DTC has succeeded in overcoming all the difficulties to recover from the disaster with initiating self-rescue work in good order and resuming the production and operation in less than one month after the earthquake. Although



the company suffered a hard attack from the earthquake in 2008, the output value of DTC still reached 10.8 billion Yuan in that year, 16.747 billion Yuan in 2009, and in 2010 the output value increased to 20 billion Yuan. DTC was not defeated by the disaster; instead it made significant development and improvement from the unprecedented disaster after the post-earthquake recovery and reconstruction. DTC responded to the Party and the people with perseverance and courage, and continues to give a great contribution to the construction of heavy-duty equipments in China.

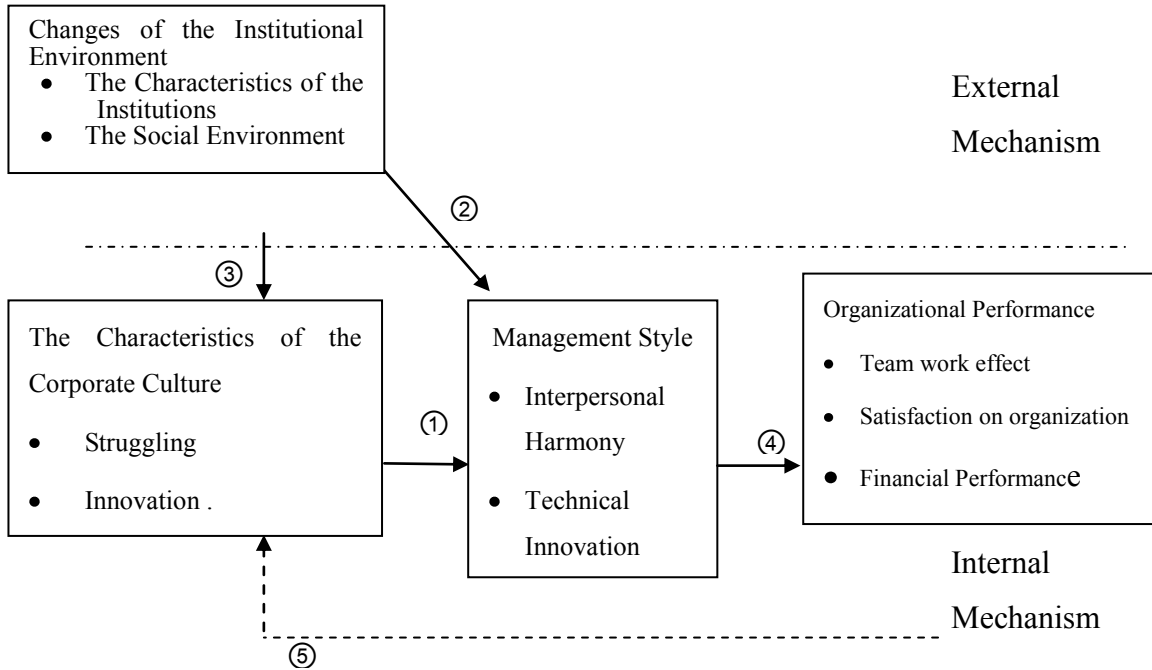
Obviously, the history of DTC, its amazing performance in the post-reconstruction after a massively destructive natural disaster and the speed of its development make of DTC an excellent object of study among SOEs in China. Six former directors and general managers of DTC have been selected for interviewing in this research. The interview outline was designed to evaluate the main influencing factors during the formation and development of DTC's corporate culture and the influence and effect of the institutional environment on DTC's corporate culture. From the interviewees' description, we can get a vivid understanding of the characteristics and influencing factors of DTC's corporate culture at each historic stage. This way also offers an important approach to check the data collected in previous research steps.

### **3.2 Research Model**

In the research on the influencing factors of corporate culture it is generally acknowledged that the corporate culture depends mainly on the entrepreneur and on the socialization mode. In enterprise management practice, an enterprise and its leader shall adapt to the environment for survival and development. Above all, the institutional environment has an impact on the values and behaviours of the leader. As the values and behavioural pattern of the leader will influence the corporate culture and decide the development direction of the corporate culture, the institutional environment is of utmost importance and may connect tightly with the corporate culture. This relationship may be that the institutional environment influences the development direction of the corporate culture, and thus the corporate culture is the result of adaptation to the environment. The constantly changing institutional environment can be divided into several stages of development reflected by some key events or elements according to its law of development. At each development stage, its characteristics will influence the development of organizational culture which is being formed and developed in the process matched with the institutional environment changes. Based on

the findings and thoughts, combining relevant theories about organizational culture with the management practices of the enterprise, this thesis puts forward the following research model to explore how the institutional changes influence the organizational culture and the role of corporate leaders. See Figure 3-1 for the model.

Figure 3-1 Research Model



Source: Collected by the Author

### 3.3 Research Method and Data Collection

According to Yin (2009), case study is particularly suitable to address such questions as “how” and “why”, and it is helpful to explore in-depth current phenomena. This research follows the instructions of Yin (2009) and others, since its aim is to explore the underlying mechanism that cannot be seen only by a glimpse.

Data were collected by a diversity of ways, including interviews, internal documents, news and reports on the internet and mass media, academic papers and theses. Data triangulation (Eisenhardt, 1989; Yin, 2009) was conducted to guarantee the reliability of data.

Considering the advantages and deficiencies of qualitative and quantitative research in organizational culture research as discussed above, both methods has been used in this research, in order to provide stronger conclusions.

Interviews are helpful to get information that cannot be found in existing documents or

reports, especially information related to delicate relationship and background dynamics, frequently enveloped in secrecy. Interview is also helpful to examine if there are mistakes in already collected data. Actually, in this research some mistakes have been found and corrected on time.

### 3.3.1 Collecting Public Information and Internal Documents

The first step is to collect the information about the historical background of Third Front Construction and SOEs. The main sources include the internet, newspapers, magazines, history books, documents from all levels of governments and history textbooks. All the information was classified according to the years in which that key event happened. About one hundred pages of documents were collected in this step. Then, the information about DTC including the process of the first step was also collected and, after careful examination, nearly one hundred and sixty pages of documents were gathered.

Before triangulating all the data, in-depth interviews and a questionnaire survey were conducted. Each process is described below.

### 3.3.2 In-depth Interviews

#### 3.3.2.1 Interviewees

According to the already collected historical information, ten directors have served in DTC since its inception; six of them were selected as the interviewees for in-depth interviews based on their contribution along their administration career, in the different stages of the company operation: establishment period, mature period, development period and reform period. The purpose of that was to see who could represent the renovation, reform and development process of the enterprise and the typical development period of its institution and culture. See Figure 3-2 for detailed information.

**Table 3-1 Basic Information of Interviewees**

No.	Name	Title	Tenure	Main Contributions
1	Ding Yi	Director of DTC	December, 1979 to November, 1983	Founded the enterprise and developed 300,000 KW turbines; is the pioneer of DTC's corporate culture
2	Chen Kuanjin	Director of DTC	August, 1984 to December, 1987	Founded the management system and developed the corporate culture
3	Zhang Shengquan	Director of DTC	January, 1994 to November, 1999	Made the technical improvement

4	Wang Zhengwei	Director of DTC	December, 1999 to November, 2005	Reformed the system of subsidiary and introduced the technology of gas turbine and equipment for wind power and nuclear power
5	Zhang Zhiying	General Manager	October, 2006 to May, 2010	Carried out the earthquake relief works and the reconstruction of new DTC
6	Zhang Wenfeng	General Manager	2010.6 to June, 2010	Leads the development of the new DTC

*The data above comes from the DTC Memorabilia*

### 3.3.2.2 Interview Contents

The in-depth interview outline was designed according to the leaders who have served in DTC and their main contributions as well as the analysis of key events during DTC's development. Each interview includes all or some of the contents shown below.

DTC's development history:

- ( 1 ) What were your working conditions in DTC and what impressed you most when you were working there?
- ( 2 ) What have you done for exploring and innovating in DTC's talent strategy when you were the director of the plant? What do you want to talk about in respect to these ideas?
- ( 3 ) In your opinion, what factors influenced the development of DTC most at that time? Which factors became problems? How did you deal with those problems? (Please give some examples.)
- ( 4 ) In your opinion, what important periods has DTC experienced?

Formation Process of DTC's Corporate Culture:

- ( 1 ) In your opinion, what was the prominent character of DTC when you were the leader? (Can you enumerate some typical events?)
- ( 2 ) In your opinion, how was the "DTC Spirit" formed? What characteristics was the Spirit embodied in? (Please give some examples.) Did the DTC Spirit change?
- ( 3 ) In your opinion, what kind of enterprise spirit you hoped DTC would form at that time? What did you do in that period?
- ( 4 ) In your opinion, what kind of role did you play in forming the "DTC Spirit"?

Suggestions for today's DTC:

- ( 1 ) We know you are paying close attention to DTC's development, what are the

problems in DTC at present and what shall be improved? And how to improve?

( 2 ) In your opinion, what are the disadvantages of DTC's corporate culture at present? And how to improve?

According to the above outline and the tenure of DTC's leaders, the development period of the enterprise, the development period of the organization culture and corresponding characteristics thereof based on the typical events and on the environment at that time were discussed in this review.

### **3.3.2.3 Interview Process**

After discussing repeatedly with the supervisors, the interviewees and outline of the interview program have been decided, including the interview purposes, time and places and the designing of the in-depth interview plan. Mr Ding Yi, the first director of DTC was interviewed in Deyang, Sichuan on April 29, 2011; Mr Chen Kuanjin, the third director, in Chengdu, Sichuan on May 10, 2011; Mr Zhang Shengquan, the sixth director, in Chengdu, Sichuan on May 13, 2011; Mr Xu Zhengwei, the seventh director, in Deyang, on July 13, 2011; Mr Zhang Zhiying, the former General Manager, in Chengdu on July 25, 2011; Mr Zhang Wenfeng, the incumbent General Manager, in Deyang on September 9, 2011. All the interviews were finished in 6 months (April 29 to Sep. 9). Each time, in order to avoid missing important information, at least two assistants took part in. The time for each interviewee is from 3 hours to 4 hours and notes and records were taken with declaration at the beginning of interviews. All the notes and records were transformed into text as soon as possible and the corresponding interviewee was invited to check up for possible mistakes. Finally, nearly 100 pages of documents were collected.

### **3.3.3 Questionnaire Survey**

Based on the Organizational Culture Assessment Instrument (OCAI) developed by Quinn and Cameron (1998) and Bunderson, Lofstrom and Van De Ven (2000), the Organizational Culture Assessment Instrument for Chinese SOEs developed by Xu Shuying and Liu Zhiming (2003), Denison's Corporate Culture and Organizational Effectiveness (1990) as well as the Organizational Commitment Scale for Staff in Chinese Enterprises developed by Ling Wenquan, Zhang Zhican and Fang Liluo (2000) have been adopted in this thesis after revising and optimizing in combination with the realities of DTC and other Chinese SOEs, some self-developed items in respect to institutions have also been used to

produce the questionnaire for this survey. With good reliability and validity, this assessment instrument is classified into two categories, in which 34 items for managers and 100 items for staff, and the fill-in method is in accordance with Five Points Scale as shown in the Appendix.

### **3.3.3.1 Survey Design**

As shown in the Appendix, the survey used in this thesis is divided into four parts, in which the first part is about the basic information of respondents and includes six items; the second part is the survey about organizational culture and includes 12 items; the third part is the survey about the team efficiency and employees' satisfaction and includes 12 items; the fourth part is the survey about the institutional features prepared by the author and includes 10 items. The second and the third part of the questionnaire are related to the answers to the two periods of "Present" and "When the respondents began to work", which are used as the correlation data for the current and historical conditions. The fourth part of the questionnaire includes questions such as, (1) "The importance of features of external institution environment during different development periods", aiming at learning about the differences of institutional environment in different periods; (2) "Compared with the competitors, DTC's actual performance in respect of management features during different periods", which is helpful for comparing the differences of management styles between DTC and its competitors. The second, third and fourth parts of this questionnaire adopt 5-point scale, which is from 5 to 1 in points, standing for "Degrees of compliance" to "Degrees of agreement". For detailed questionnaire items, see the Annexes.

### **3.3.3.2 Survey Samples**

The middle-level cadres of DTC are the research objects in this questionnaire. 102 questionnaires were sent out, of which 90 have been returned, and the effective rate is 88.23% after eliminating invalid questionnaires. For specific distribution conditions, see Figure 4-1. The middle-level cadres, who are more than 36 years old, account for 88.9% of the headcount; the middle-level cadres with a university degree account for 87.8%; the middle-level cadres with engineer certificate account for 62.2%; the cadres with less than 15 years of working tenure account for 22.1%; the cadres with 16-25 years of working tenure account for 40%; and the cadres with 26-30 years of working tenure account for 32.2%. The samples are of good representativeness because the distribution of respondents is similar to the distribution of all the middle-level cadres of DTC and the random sampling method was used.

### 3.3.3.3 Statistics of Partition of Stages

Among 90 valid questionnaires, the development periods of DTC were divided into more than 3 stages in 78 questionnaires, into four stages in 33 questionnaires, and into five stages in 15 questionnaires. For the data of starting years at each development stage, see Figure 4-2, in which the years of 1966, 1984, 1992 and 2005 with high frequency are considered as the milestone years for the partition of stages, which is in compliance with the results of interviews. This stage partitions are compared with the stages and years obtained from the in-depth interviews, so the partition of stages, which reflect the real historical facts, is reliable and believable.

**Table 3-2 Table of Distribution Conditions of Interviewees ( N=90 )**

Variable	Categories	Number of People	Proportion
Age	20-25	1	1.1%
	26-30	3	3.3%
	31-35	6	6.7%
	36-40	20	22.2%
	41-45	20	22.2%
	46-50	33	36.7%
	More than 50 years old	7	7.8%
Gender	Male	79	87.8%
	Female	11	12.2%
Education Background	Senior High School, Technical Secondary School	3	3.3%
	University	74	82.2%
	Post Graduate Education	13	14.4%
Major	Natural Science	3	3.3%
	Engineering	56	62.2%
	Economics	4	4.4%
	Business Administration	10	11.1%
	Politics and Law	5	5.6%
	Entertainment and Sports	2	2.2%
	Accounting or Finance	4	4.4%
	Others	6	6.7%
Service Year	1-5	3	3.3%
	6-10	4	4.4%
	11-15	13	14.4%
	16-20	18	20.0%
	21-25	18	20.0%
	26-30	29	32.2%
	31-35	4	4.4%

	36-40	1	1.1%
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### 3.4 Method of Data Analysis

After getting reliable data, a few steps were conducted as follows:

(1) Analysis of the stages and related characteristics of the development history of SOEs. The author did the analysis first, then discussed the results with three doctoral students and modified correspondingly. After three or four turns of this modification, discussed the results with both foreign and Chinese supervisors and modified correspondingly.

(2) Analysis of stages and related characteristics of DTC was conducted following the same process as above.

(3) Comparison between the results from the above two steps was conducted. Also, the author did it first, then discussed the results with classmates, and only after discussing with both supervisors, the results have been decided.

In the next chapter, the results will be presented.

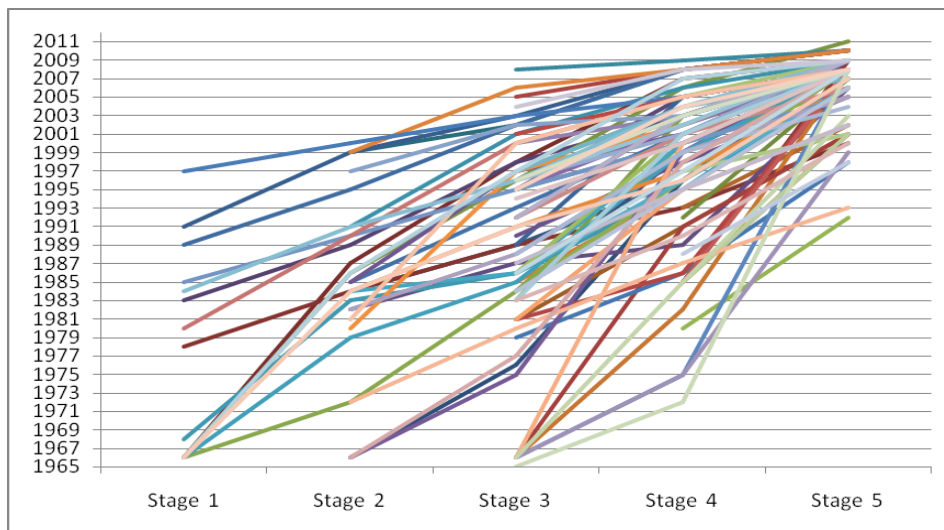


## Chapter 4: Analysis Results

### 4.1 Development Stages and Characteristics of the Institutional Environment

Combining the reading of Chinese history and of books by Bian (2011) and others (e.g. Zhang Dicheng, 2008; Yu Yan, 2009; Luo Jing, 2010), with the analysis of the results from collected data, discussed with some former leaders of SOEs, especially the leaders of DTC, the development history of DTC can be divided into four stages. This stage partition and the characteristics thereof also represent a large part of the development history of many SOEs in China. Discussing the institutional environment of DTC cannot be separated from the main framework of management and reform of SOEs. Thus, the following discussion includes not only the description of DTC as an individual enterprise, but also the description of typical problems confronted by SOEs in China during those periods.

Figure 4-1 Distribution Diagram of Starting Years at Each Stage



#### 4.1.1 Stage I (1966-1982)

After the foundation of PRC, facing up with the difficult situation of abject poverty and with the urgency to build a socialist society, China had no choice but to borrow the practical socialist experience from Soviet Union, the very first socialist country in the world. Therefore, China's economic system was exactly a copy of the Soviet Union mode.

The earliest origin of China's SOEs can be traced back to some small-scale and scattered military supply and handicraft enterprises established for war service during the Second Civil War(1945-1949). While the actual large-scale development of SOEs was achieved through political means after the foundation of PRC, confiscating imperialist-owned enterprises and bureaucrat-comprador enterprises of the Nationalist government transformed some of the national capitalist enterprises and invested to build SOEs at the central and local level.

As PRC was initially founded, restoration and development of the national economy were the most urgent priority at that time, and a strategy of primarily developing heavy industry was put forward for implementation. Under the situation, this policy directly led to the complete establishment of a corresponding planned economic system, with the central government uniformly exercising economic management authority, and SOEs as complete subsidiary body of government. The state is the sole owner of the SOEs, and the ownership and management rights of these enterprises solely belong to the state, with the ownership completely centralized by the state under the planned economic system. Higher level economic management departments issued production orders to the SOEs in accordance with supply and demand of the national economy, while these enterprises became pure manufacturing machines responding to orders to manufacture products, which were then to be purchased and distributed by the state. Therefore, the objective of these enterprises was to accomplish assigned producing tasks. In its true sense SOEs were not enterprises, since the decision-making authority of issues concerning production and management, including human resources management and assets disposal, did not belong to the enterprises. Generally speaking, during the period of planned economy, SOEs had a sole ownership body, and these enterprises did not have decision-making authority.

After May 1964, due to international military threats, Chinese government made the decision to carry out a major regional arrangement adjustment to the national economy, which were the policy to “stop”, “press”, “move” and “help” the economic development projects of “the First Frontline” in the east and “the Second Frontline” in the centre, and to focus on developing and building “the Third Frontline” and “Strategic Rear Area” in the west. Chairman Mao drew a conclusion to this strategic policy with the slogan “Be prepared against the war and natural disasters, and serve the people”. He said, “The first is to be prepared against the war. Our people and army shall first of all be properly clothed and fed before being engaged in a war, or even if they do have guns and cannons, they can not actually fight at all; the second is to be prepared to natural disasters. Living without proper storage of

grains, cotton and oil and solely depending on aids from other provinces in the event of natural disasters cannot last for a long period of time. Natural disasters, which are almost unavoidable in any one of all the provinces and which are hardly avoidable when combining several provinces, once coupled with a war, undoubtedly lead to even harder difficulties; the third is that the government shall not store too much, and shall consider the facts that some of our people still can not be fed and clothed properly; furthermore, the government shall consider getting people more scattered around the country so as to be better prepared for the war and natural disasters; lastly, the government shall consider using the accumulated funds by the local government for production expansion.” The slogan, together with the one frequently quoted side by side “Dig deep holes, accumulate more food and do not overlord among states”, became the general conclusion of China’s international strategic defence concept in the Cold War period.

Guided by this strategic defence principle, during the 17 years from 1964 to 1980, China carried out large-scale infrastructure construction with war preparation as the guiding ideology in the fields of national defence, science and technology, industry and transportation in the 13 provinces and autonomous regions of west and central China. The Third-frontline Construction is another large-scale industrial migration in the economic history of China, the scale of which is comparable to the inland migration of coastal industries during the Anti-Japanese War period. The accumulated investment of the Third-frontline Construction is approximately 200 billion Yuan. Up to 2,000 large and medium-sized backbone enterprises and research institutes were established while 250,000 km roads were constructed in the inland areas not easily accessible and with a weak economy. In addition, 10 trunk railway lines, respectively Chengdu-Kunming, Sichuan-Guizhou, Guiyang-Kunming, Hunan-Guizhou, Xiangfan-Chongqing, Taiyuan-Jiaozuo, Jiaozuo-Zhicheng, Zhicheng-Liuzhou, Yangpingguan-Ankang and Xining-Golmud Section of Qinghai-Tibet were constructed, with a total mileage of 8,000 kilometers; 45 key research and production bases of military and civilian goods were established, and 30 new industrial cities of different features were built, thus a strategic rear base with almost completed industries, including coal, electric power, metallurgy, chemical, mechanical, nuclear, aviation, aerospace, ordnance, electronics, and shipbuilding industry has taken shape. Among these industries, a single ordinance section hired as many as about 200,000 engineering and technical personnel.

Although such a construction mode presented serious waste and inconvenience problems for the future operation and development of the enterprises due to the remoteness of these

establishments, it is still an unarguable fact that the Third-frontline Construction played the role of a major booster for the industrialization of west and central China.

When the PRC was initially founded two steam turbine companies existed in China: Harbin Steam Turbine Works and Shanghai Steam Turbine Works. Both were located in big cities, within the area of strategic frontlines. Guided by the war preparation ideology, there was an urgent need to build another steam turbine factory in the strategic rear area. With the war preparation in the background, Dongfang Steam Turbine Works (referred to as DFSTW hereafter, the predecessor of DTC) was established as the historical result of the Third-frontline Construction in China. At that time, “positively be prepared against war” was the main theme of national policy, which also became the behavior purport of the constructors of DFSTW (DTC). For example, the first director of DTC pointed out, “At that time, Chairman Mao said, ‘the Third Frontline Construction must be pushed forward, or I will not be able to sleep well’, and each one of us was motivated by such kind of emotion”.

DTC was built with the aid of Harbin Steam Turbine Works and Shanghai Boiler Research Institute. In 1966, at the historical call of “Be prepared against the war and natural disasters, and serve the people” and “Only the excellent go to the Third-frontline Construction”, against the historical background of no Cultural Revolution in the “Third-frontline Construction” area, and cherishing the noble dream of “Developing China's steam turbine works and letting Chairman Mao sleep peacefully”, “Harbin Steam Turbine Works assigned 1,338 persons to DTC firstly. They were mainly blue collars and cadres, and Shanghai Boiler Research Institute assigned 70 households, mainly technical personnel who “actually became the earliest builders and the backbone force of our works”. (Chen Kuanjin, Interview Record, 2011).

DTC broke ground to start construction in Hanwang Town, Mianzhu County, Sichuan Province in 1966, the place that would be destroyed 42 years later by the catastrophic 2008 earthquake. Construction of DTC continued during the Cultural Revolution period, with construction and production going on at the same time. The construction was fully completed and put into operation in 1974.

As DTC was just recently established, the state positioned Harbin Steam Turbine Works and Shanghai Steam Turbine Works as large steam turbine works, while DTC was positioned as a medium-sized steam turbine works. The original designed annual production capacity of DTC was 600MW steam turbines for power station and 164MW for gas turbines, while a marine turbine should be controlled within the price of 60 million Yuan, and the largest single

turbine should be no more than 200MW. “According to the design of the Central Government at that time , DTC should have four kinds of products annually, including 25MW, 50MW, 100MW and 200MW”, in which the specific plan was, four sets of 25 MW, two sets of 50MW, one set of 100MW and half set of 200MW” (Ding Yi, Interview Record, 2011).

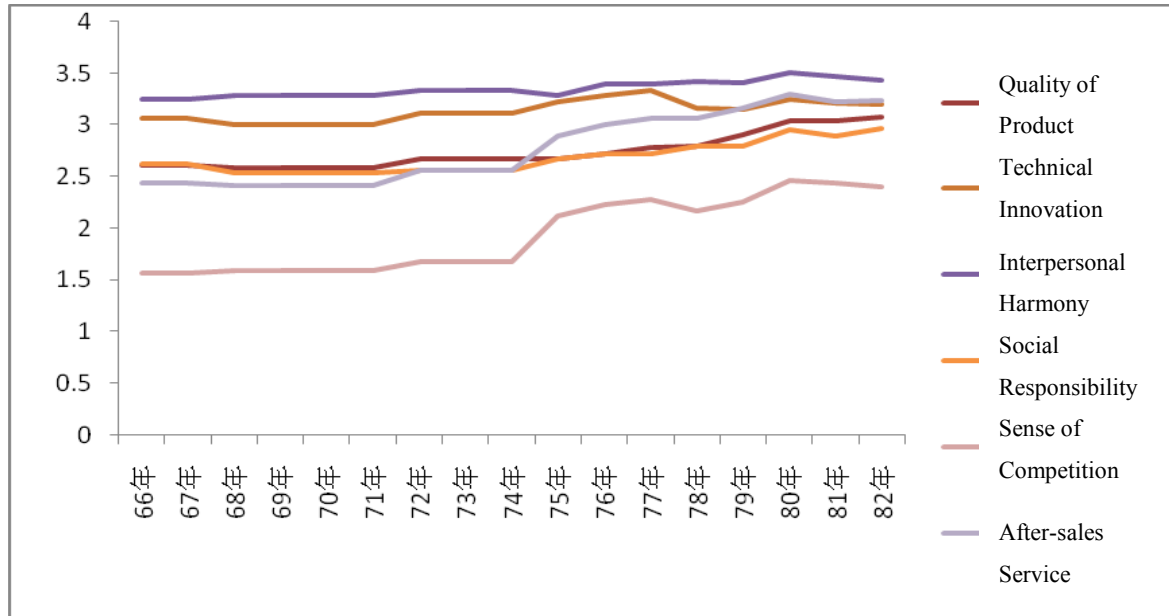
During this Stage, as a solely-SOE of the Third-frontline Construction period, the institutional environment of DTC was highly consistent with that of the nation. Therefore, the development of DTC during this Stage was clearly marked by the features of the Third-frontline Construction period and planned economy, which means that the state was the sole owner of DTC, the ownership and management rights of which belonged to the state as well and that the enterprise shouldered the responsibility of accomplishing the political task of being prepared for the war and developing the steam turbine industry in China. DTC leaders were directly appointed by the state, the turbines were produced in strict accordance with the national plan, and payment was equally divided among employees. The enterprise also performed duties of social functions such as farming, nursery, primary and secondary schools, hospital and police office, with the social service satisfied within the enterprise itself. The enterprise, in fact, played the role of a department of the government that produced steam turbines according to the plan.

In the 10 items about institutions in the questionnaire survey, the annual scores of “The Important Status in DTC’s Development” were collected and then the average value of the importance of each index in each year was calculated, and converted to the annual institutional environment characteristics of the enterprise. Figure 4-2, in which “1” stands for the worst, “5” stands for the best, shows that, as the score increases, the institutional characteristics become more distinct.

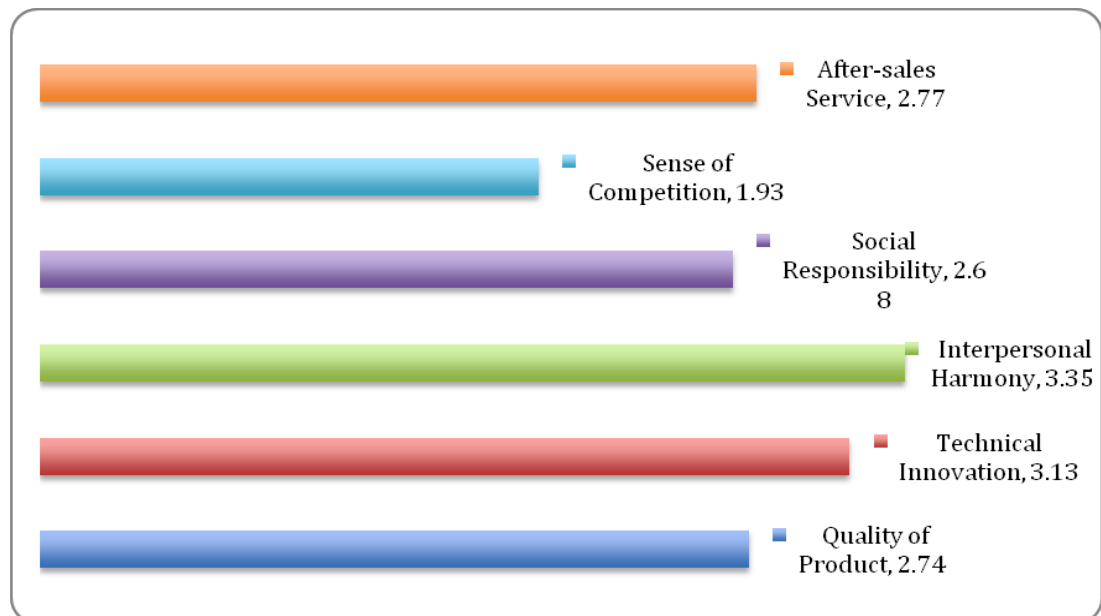
It can be seen from Figure 4-3, during the first stage, that before 1975, as the year increases, the changes of characteristics of the institutional environment of the Company become less in result of the great number of political policies and few economic policies during the “Cultural Revolution” in China from 1966 to 1976, and also of the fact that external economic policies had limited impact on corporate institution, thus the institutional environment of the company did not change significantly. After 1976, as the years increase, the trends of the institutional environment characteristics of the Company became more and more clear, which means that for the development of DTC, institutions are more and more important, which is closely related to the external policy environment as after 1976, China ended the “Cultural Revolution”, and transformed the emphasis from politics construction

into economic construction, formulating numerous economic policies and boosting the operation and development of the enterprise.

**Figure 4-2: Trends of the Institutional Characteristics in Each Year during the First Period**



**Figure 4-3 Comparison of the Institutional Characteristics during the First Stage**



According to the above stage partition, the data in each year at the first stage was averaged to obtain the characteristics of the institutional environment at the first stage. According to the scoring of 10 kinds of institutional characteristics and based on the significance analysis of the characteristics of the institution, this thesis only selects the

characteristics of the institutional environment on six aspects for the purpose of the research, including: “quality of product”, “technical innovation”, “interpersonal harmony”, “social responsibility”, “sense of competition” and “after-sales service” which are of greater significance, as shown in Figure 4-4.

At the first stage, the three most significant characteristics are respectively: “interpersonal harmony”, “technical innovation” and “after-sales service”. During the start-up stage, the company was at the period of preparing against the war, the employees were not very sophisticated and DTC had no advantages nor good opportunities or favourable geographic location and only relied on the support of people and solidarity with others. To unite the employees, the Company worked out many systems to enhance the cohesion, and “Interpersonal harmony” became the most important factor in the institutional environment of the company. After 1974, Ding Yi, the first director of DTC realized that the turbine of 200MW was only a transition product, and the turbine of 300MW and over should be developed. At that time the Central Government decided to ask Shanghai Steam Turbine Works to import the technology of 300MW turbine, and Harbin Steam Turbine Works to import the technology of 600MW turbine from other countries, only DTC had no right to import technologies. DTC could only start the project of 300MW steam turbine based on its own independent development.

As a result, innovation became the second most important factor in the institutional environment of the company. Due to the shortage of external resources and in order to win in the market competition and get the recognition from customers, DTC had to rely on the quality of its own products and services. Therefore, the system of “24-hour Service” was put forward: when a product of DTC had problems, the company would send engineers to the power plants to provide services and solve the problems in the first time. This was the precocious market awareness and client orientation, so after-sales service became the third most important factor in the institutional environment of the company. The characteristics of the institution surveyed and quantitatively analyzed from the questionnaire for the first stage are basically consistent with the conclusions drawn from the historic information and qualitative analysis from the in-depth interviews.

#### **4.1.2 Stage II (1983-1992)**

In order to make the enterprise as an independent product manufacturer and to let the law of value play its adjustment role, the state-owned system must be converted into other forms

of national ownership. After exploring and learning lessons during Stage I, the central Chinese government stated clearly in 1978 that one of the serious problems of Chinese economic management system was the too much centralized authority, therefore, the relationship between the government and enterprises should be transformed, and enterprises should be provided with more decision-making authority under the guidance of the uniform plan from the government. Firstly, authority was expanded and companies were allowed to retain profits from 1978 to 1980. The State Council issued five documents such as Retained Profits of SOEs in 1979, the implementation of which increased the profits retained for enterprises, and improved the control authority of these enterprises. Comparing with the centralized distribution and centralized collection of the previous system, such measures did mobilize the initiative of employees and enterprises, but at the same time, the increase of retained profits by enterprises also led to a decrease of government financial income.

Secondly, an economic responsibility system was developed for experimental operation from 1981 to 1982. The system, on the one hand, ensured the government financial income, on the other hand led to problems of profits not as much as losses, and unfair distribution among enterprises. Thirdly, the first step of turning profits into taxes was taken from 1983 to 1984 when profits and taxes coexisted. The State Council issued the Interim Provisions of Further Expanding the Decision-Making Authority of Enterprises in 1984, which confirmed the reform mode of “expand enterprise authority and give up more benefits” through the “ten provisions of expanding enterprise authority”. The Chinese government put forward for the first time in 1984 that the socialist system was “a planned commodity economy based on public ownership”, thus establishing “a planned economy supplemented by market regulation” became the objective of economic system reform.

In December 1986, the State Council issued Several Provisions of Deepening the Reform of Enterprises and Enhancing Their Vitality, which clearly specifies, “To implement various forms of contract responsibility system, and to allow more operational decision-making authority for enterprise managers”.

The former State Commission for Restructuring and other departments issued the Pilot Measures for Joint-stock Enterprises, Opinions on Standards for the Companies Limited by Shares and Interim Provisions for Macro-management of Pilot Joint-stock Enterprises in 1992, and the Company Law of the People's Republic of China was passed in 1993. These laws and regulations confirmed that the pilot joint-stock reform was officially brought onto the legal track.



To draw a conclusion, the direction of enterprise reform went during this Stage from the previous “expand enterprise authority and give up more benefits” and “turn profits into taxes” to “reform the operational mechanism”, separating the duty of government from that of enterprises, and appropriately separating the ownership of enterprises and their management rights. Specific measures such as implementing the contract responsibility system for state-owned large and medium-sized enterprises, and the rental business system as well as joint-stock reform for small enterprises were adopted.

Clarifying confusion and bringing things back to order after the Cultural Revolution brought a very peaceful external political environment for DTC. When 300MW steam turbine was produced, the assigned plan was insufficient. Chen Kuanjin, the third director of DTC said, “In order to survive, as leaders, we put forward the ‘Market Economy’ in its initial stage at the period of the planned economy, and we put forward a slogan which would be worth ruminating nowadays, ‘be an itinerant merchant and involve in several trades, create a well-recognized brand and compete to be the best’”.

The so-called “itinerant merchant” does not come from a concept from the planned economy, and does not mean to wait for orders, but means to actively search for customers and compete for orders. “Involve in several trades” means that DTC shall develop hangar doors, oil tanks, kitchen knives, folding chairs and other products besides steam turbines to meet the market needs. This Stage is marked by the institutional feature of planned economy as its main structure, market economy as supplemental, and management reform as the prototype.

During this Stage, the enterprise product structure developed towards the direction of larger capacity, which can be seen from the following turbine unit output list (The data comes from Chronicle of Events of DTC): Before 1985, DTC mainly produced 200MW steam turbines or above; after 1986, we mainly produced 200MW and 300MW steam turbines; between 1988 and 1990, DTC underwent a hard negotiation for three years with Japanese Hitachi Ltd., and eventually signed a contract of “Cooperation to Design and Produce 600MW Steam Turbine Generator” with the company in May 1991, thus starting to design and produce 600MW steam turbines. In September 1993, an economic contract of selling 600MW steam turbines designed and produced through Sino-Japanese cooperation to Zouxian County Power Plant of Shandong Province was signed in Chengdu, which marked that the products of DTC had been raised to a new level, into the top rankings of producing large-capacity and high-parameter 600MW steam turbines.

**Table 4-1 List of Turbine Units Output from 1983 to 1992**

Year	3.6 hp	25MW (set)	35MW (set)	50MW (set)	75MW (set)	200MW (set)	300MW (set)
1983	1					2	
1984						4	
1985						5	
1986						5	1
1987						6	
1988						5	2
1989				1		7	2
1990				4		5	3
1991			4	1		4	1
1992			1	5		4	5

Source: The data are from Statistical and Historical Data of DFSTW (DTC)

During this Stage, products of the enterprise started to compete in the international market. DTC signed a \$3.5 million economic contract of 3×50MW steam turbines with Pakistan in September 1988. From then on, DTC made a breakthrough in terms of the export of complete turbine units, and started a new era of exporting to earn foreign currency and competing in the international market.

**Table 4-2 List of Turbine Exported from 1983 to 1992**

Year	Exported to	Capacity of single unit (MW)	Qty.(set)	Amount (Unit: USD \$).	Remarks
1988	Pakistan	50	3	3,500,000	
1989					
1990	Bengal	210	1	4,500,000	
	Indonesia	35	5	4,700,000	
	The United Nations Development Programme	200			Reform
1991					
1992	The World Bank	300	2	5,600,000	
	The World Bank		8	JPY 109.5 million	

Source: Statistical and Historical Data of DTC

This Stage featured a fast growth for the enterprise. It can be seen from the following table that after 1983, DTC started a period of fast growth. During the next 10 years, the enterprise output increased by 458.95%, the output value increased by 748.80% and sales increased by 967.45%. Such excellent performance secured DTC at one of the top three positions among all the steam turbine works in China.

**Table 4-3 List of Economic Indicators from 1983 to 1992**

Year	Annual output (MW)	Output value (10,000 Yuan)	Increased value (10,000 Yuan)	Sales (10,000 Yuan)	Taxes (10,000 Yuan)
1983	419	3303	2107	2820	577
1984	802	4374	2188	4017	848
1985	1021	5833	2099	6516	1436
1986	1300	7775	3869	7727	1673
1987	1209	9507	4860	11647	1873
1988	1636	11858	7379	11270	1690
1989	1887	14096	6994	15293	1868
1990	2263	16261	5939	18811	1011
1991	1608	22701	8958	19253	1740
1992	2342	28036	9751	30102	1804

*Source: Statistical and Historical Data of DTC*

The institutional reform has taken several significant steps forward during this Stage:

Firstly, the leadership system of the enterprise was transformed. The implementation details of the Director Responsibility System passed in October 1986, and Corporate Constitution of DTC passed in 1989, which specified clearly the source of the registered capital, business scope and business operation, selection procedures of the legal person and inherent responsibilities, organizational structure and functions, financial management and profit distribution, human resources management and enterprise shutdown procedures, in order to reform the long-standing leadership structure of non-separation from government and enterprises towards the direction of developing a management system with a corporate legal person.

Secondly, the organizational structure of the enterprise was transformed. Chen Kuanjin, the third director of DTC said, “At that time, the power of management and reform was great, and we carried out the branch-plant system and business division system and divided and

transformed the responsibilities and power to the workshops according to the characteristics of products”. The Cold Working Workshop was updated to be The Cold Working Subsidiary Plant in March 1984, and opened the curtain of updating workshops to subsidiary plants. More than 10 subsidiary plants were established during that period, and most of these subsidiary plants still exist. Management departments such as Plan and Operation Department, Production and Technology Department, Quality Control Department, Equipment Power Department, Department of Human Resources and Security Department were established in March 1984, and were then converted into divisions and offices of various functions in June 1986. The names of such divisions and offices changed along all these years, but the functions of most of them have been kept until today. Adjustments in the organizational structure have thus reflected the enterprise management ideology and its expanding authority, empowerment and benefits, rights and responsibilities.

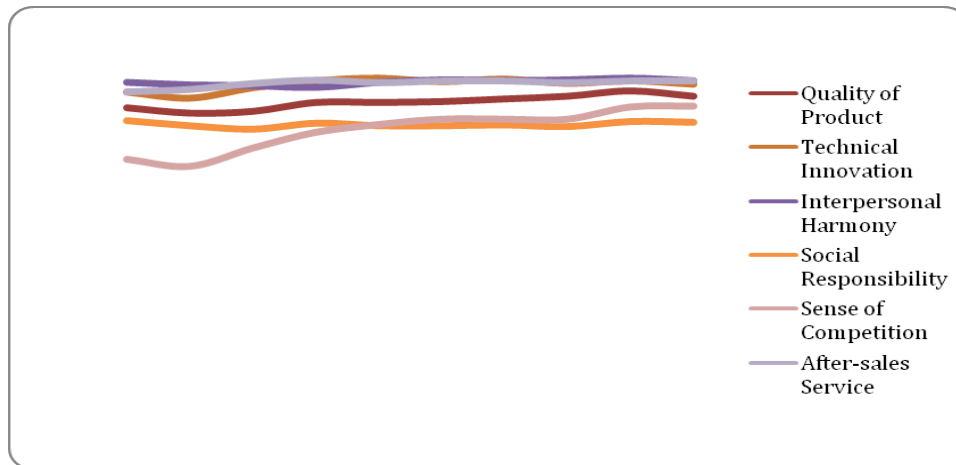
Thirdly, the operation system of the enterprise was transformed. A labour service company and a life service company were established in January 1983, and the new Dongfang Industry Co., Ltd. was established in March 1985. The enterprise signed in March 1983 its very first economic responsibility contract, a farm fishpond contract; in April of the same year the metal fabrication workshops started to implement a new contract system, adopting a variable payment structure; a profit-sharing responsibility contract was signed respectively with transportation workshop and metal fabrication workshop in the same month. The internal bank of the enterprise officially opened for business in July 1984. In May 1988 DTC signed a responsibility management contract, valid from 1987 to 1990, linking the total of wages with the kilowatt. Responsibility management, opening-up and being flexible, and mobilizing grass-roots economy became the keys of the operation system transformation during the stage.

Fourthly, the labour distribution mechanism was transformed. For example the accountant Zhang Jinlin was awarded 500 Yuan for proposing a financial management reform measure in January 1985. The enterprise passed a dynamic structural wage system in December 1988, abolishing the wage system of technical ranks that had lasted for more than 30 years. The plan on professional and technical job review and integrated employment and appointment reform were officially implemented in June 1992, thus creating an open and equal opportunity environment for encouraging the growth of talent and the work enthusiasm of professional and technical personnel. The employees started to pay the housing fund from September 1992, and the first batch of apartments at a preferential price started to be sold to employees in November of the same month, thus reforming the previous welfare housing

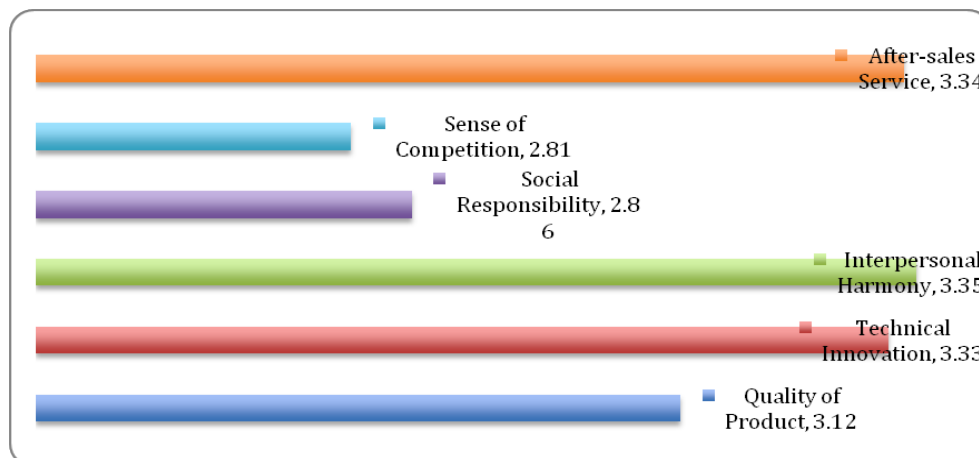
system towards the direction of market economy.

In the questionnaire of the second stage, as shown in Figure 4-5, the trends of the characteristics of DTC’s institutional environment are generally stable, without deep changes as the years increase, and only the sense of market competition changes a little along the years and becomes more and more important in the construction of corporate institution.

**Figure 4-4 Trend of Characteristics of Institution in Each Year at the Second Stage**



**Figure 4-5 Comparison of the Characteristics of Each Institution at the Second Stage**



At the second stage, the characteristics of each institution are as shown in Figure 4-6. The most significant three characteristics are “interpersonal harmony”, “after-sales service” and “technical Innovation”. At this stage, “interpersonal harmony” was still the most important factor of the institutional environment for the company. Nevertheless, with the

implementation of the policy of “Reform and Opening-up” in China in 1992 and the development of market economy, the Central Government vigorously implemented the transformation of management mechanism of the enterprises, and the awareness of after-sales service, which embodied the characteristics of market economy, even surpassed “technical Innovation” and became the second most important factor in the institutional environment of the company.

After the 1990s, the company gave great impetus to the technical and management innovation, and began to make cooperative research and development on 600MW turbine, developing the products with large capacities and high parameters, and speed up the exploration in the markets overseas, consequently DTC started to export its products to other countries. To meet the requirements of product and market competition, the company also reformed its internal organization framework and established the internal mechanism of market economy, and “innovation” was also a very important factor of the institutional environment at this stage.

#### **4.1.3 Stage III (1993-2005)**

In October 1992 the socialist market economy system was initiated. In February of the next year, the document Suggestions on Amendment of Partial Constitution was proposed at the 7th NPC Standing Committee by the Chinese government, suggesting a change from “State-run enterprise” into “SOE”, demonstrating that enterprises owned by the whole people were allowed to adopt methods other than state-run, which laid a solid foundation for the property right reform of SOEs. In November 1993, another document, the Decision on Some Issues concerning the Establishment of the Socialist Market Economy was passed by the Chinese government, indicating that the reform of SOEs aimed to establish a modern enterprise system featured with “clearly established ownership, well defined power and responsibility, separation of enterprise from administration, and scientific management”. In the next month, the first Company Law of the People’s Republic of China was issued, stipulating that “a company shall enjoy all legal person property rights formed by the investment by shareholders, enjoy civil rights, and bear the civil responsibilities according to the law. A company shall operate independently with all its assets, and be responsible for its own profits and losses”.

After 1994, the modern enterprise system was experimented in 100 large and medium-sized SOEs. In 1997, the State Council approved and transmitted the Suggestions on

the Work of Deepening the Experiments of Large-sized Enterprise Groups which was issued by the State Planning Commission and other departments, pointing out that a parent-subsidiary company structure with property rights as the main linkage should be established to promote the development of enterprise groups. Generally, enterprises could obtain more autonomy in management through establishing enterprise groups and authorized operations, which was one of the major means for restructuring major enterprises and relaxing control over small ones.

It was proposed in the 4th Plenary Session of the 15th Central Committee of CPC in 1999 that the economic sector of joint-stock system and mixed ownership should be developed with great endeavour, that large-scale enterprises and enterprise groups should be fostered, a freer rein should be given to small and medium SOEs to invigorate themselves, and the guidance policy of “advancing in some aspects while retreating in others” and “focusing on certain tasks while putting others aside” for strategic adjustment of the state sector of the economy should be confirmed. Meanwhile, appropriate “state stock reduction” measures were taken to deal with the problem of large proportion of state-owned shares and legal person shares in Chinese listed companies, with four major fields to be controlled by state capital.

In 2002 the Chinese government proposed that: “the state shall...establish a state property management system under which the Central Government and local governments perform the responsibilities of investor on behalf of the state respectively, enjoying owner's equity, combining rights with obligations and duties and administering assets, personnel and other affairs...The Central Government and the provincial and municipal (prefectural) governments shall set up state property management organizations.” In 2003, the Plan on Reform of State Council Organs was passed in the 1st Session of the 10th National People's Congress, requiring that a State-owned Assets Supervision and Administration Commission should be established to perform the responsibilities of investor on behalf of the nation, malpractices caused by “Absence of Ownership” should be gotten over, and exclusive state-owned property rights should be defined.

In 2003, the Decision of the Central Committee of the Communist Party of China on Some Issues concerning the Improvement of the Socialist Market Economy was passed, defining clearly that “the economic sector of mixed economy integrating state-owned capital, collectively owned capital, and non-publicly owned capital should be developed with great endeavour for diversification of investing entities, making joint-stock system the main form

of public ownership system”, pointing out the direction for further reform of property rights of SOEs. Especially, establishing a modern enterprise property right system of “clear property rights, unambiguous right and liability, strict protection and smooth circulation” was proposed for the first time in the meeting, pointing out clearly that “Property right, including real rights, creditor's rights, stock rights, intellectual property and other property rights, is the core and major content of ownership”.

This stage of reform, which transformed China’s economic system from planned economy to socialist market economy, took SOEs and state sector of the economy as the main body and enterprise system innovation as its major contents. To keep up with external institutional environment, DTC accelerated the fit of its products to the market, the degree of diversification, as well as the progress of establishing a modern enterprise system.

During this stage DTC achieved a diversified product mix. It may be seen from the following table that the product strategy was transformed from 300MW focused to a balance of 300MW and 600MW. In addition to serialized turbines, DTC also produced nuclear turbines and gas turbines. High-capacity, high-parameter and diversified products are its development direction, making the company achieve structural adjustment and product upgrade.

**Table 4-4 Summary of Product Output from 1993 to 2005**

Type of turbines	Coal-fired turbine				Turbine for nuclear power industry	Gas turbine
	150MW and lower (set)	200MW (set)	300MW (set)	600MW (set)		
Year					1000MW (set)	270MW (set)
1993	4	8	3			
1994	9	2	5			
1995	3	4	3			
1996	4	3	7	2		
1997	2	1	7			
1998	1		8			
1999			5		1	
2000			3		1	
2001	8	2	3			
2002	13	4	7			
2003	12	4	12	5		
2004	17	2	21	10		
2005	20	4	26	16		4

Source: Statistical and Historical Data of DTC



Since 1993, with the rise of pilot restructuring of enterprises under the joint-stock system and with the upsurge of sino-foreign joint ventures, DTC has submitted pilot reform report on joint-stock system, started joint venture negotiation with Siemens, and initiated the discovery of establishing a modern enterprise system. “When the joint venture with the foreign company was going smoothly, why did we give it up? I think the decision made at that time was based on the reality of DTC. This group of people who gathered together was going to make contributions for the industry of power equipment. If we continued to run the joint venture, DTC would not be what it is today. We realized at least that, as we went deep into the negotiations, the advanced and developed countries were not the saviours when they utilized the resources in China. They just aimed at becoming the largest steam turbine works globally, rather than at developing the Chinese turbine industries. With different objectives, the joint venture failed.”(Zhang Shenquan, Interview Record, 2011). After 1999, under the previous company system, DTC restructured subunits into 11 subsidiaries, transforming its internal operation system in a wide range.

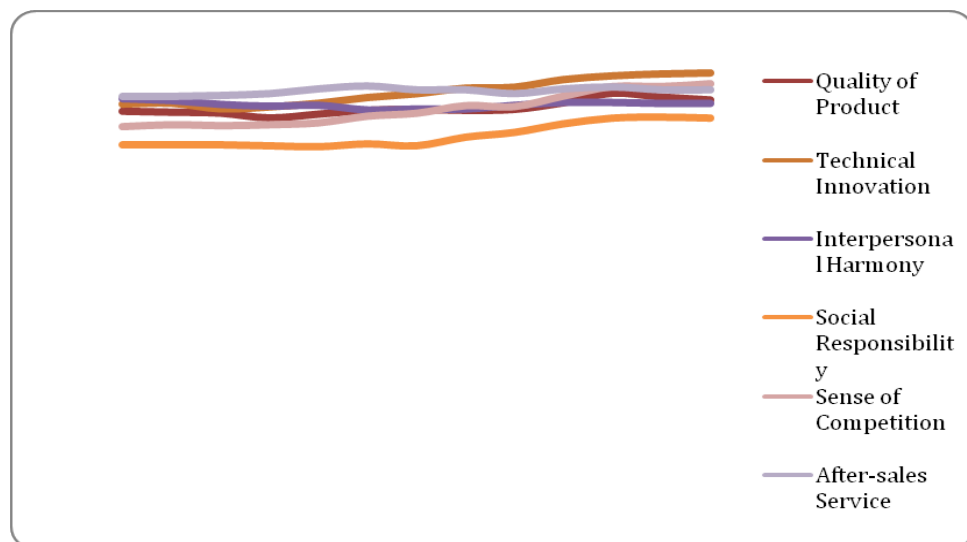
**Table 4-5 Summary of Corporate Reform from 1993 to 2005**

No	Time	Contents of Reform	Remarks
1	Jul. 1992	Establishment of Deyang Dongxing Joint Cleaning Company	Joint establishment
2	Dec. 1992	Establishment of Deyang Gear Factory	Independent legal entity
3	May 1993	Applying for the pilot restructuring of joint-stock system to State Commission for Economic Restructuring of the People's Republic of China	Failed
4	1994	Negotiating with Simens on joint venture	Failed
5	Jun. 1995	Establishment of Workmate Development Center	
6	Aug. 1997	Establishment of Sichuan Mianzhu Transportation Service Center of DTC	
7	May 1999	Establishment of Deyang DTC Transportation Co., Ltd	
8	Oct. 1999	Establishment of DTC Industrial Development Co., Ltd	Diversified investment entities
9	Nov. 2000	Establishment of Deyang Resin Co., Ltd.	
10	Nov. 2000	Establishment of Deyang Surface Engineering Technology Co., Ltd.	
11	Jun. 2001	Establishment of Deyang E&M Engineering Technology Co., Ltd.	
12	Apr. 2002	Establishment of Automatic Control Engineering Co., Ltd.	
13	Sept. 2002	Establishment of Power Station Project Service Company	
14	Sept. 2003	Establishment of Deyang DTC Foundry Co., Ltd	
15	Sept. 2003	Establishment of Deyang DTC Power Station Machinery Co., Ltd	
16	Oct. 2004	Establishment of Deyang Equipment Technology Co., Ltd.	
17	Oct. 2004	Establishment of Deyang Tool & Mould Co., Ltd.	
18	Dec. 2005	Transferred social functional organizations to Deyang Municipal Government	

The data sourced from the *Chronicle of Events of DTC*

According to the questionnaire results, at the third stage as shown in Figure 4-7, before 1999, as the years increased, the characteristics of the institutional elements of DTC did not change substantially; after 2000, as the years increased, these characteristics changed a little, which may be related to the fact that, in 2003, the state-owned Assets Supervision and Administration Commission of the State Council (SASAC) was established, which, on behalf of the Chinese government, fulfilled the contributor’s responsibilities, and carried out a series of policies on reform and management for the SOEs. These external policies directly influenced the internal institutions of DTC, which may be the important reasons that caused the changes in DTC’s institutional environment after 2000.

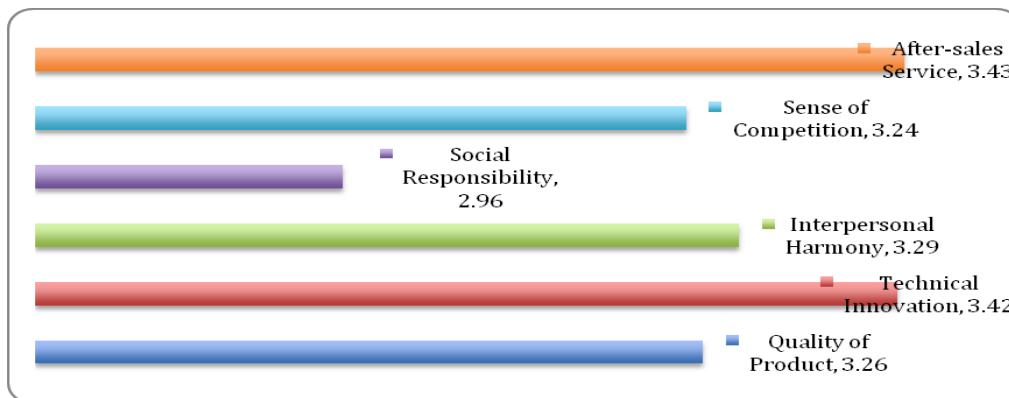
**Figure 4-6 Trends of Characteristics of Institution of Each Year at the Third Stage**



At the third stage, the characteristics of each institution was as shown in Figure 4-8, and the three most significant characteristics of the institution was “after-sales Service”, “technical Innovation” and “interpersonal harmony”. China carried out the “Power Industry Reform”, and State Electric Power Corporation was divided and restructured into five power industry corporations, i.e. China Huaneng Group, China Datang Corporation, China Huadian Group, China Guodian Corporation and China Power Investment Corporation, changing the situation of monopolistic situation of power market and bringing market competition into power generation business. The competition of market of power generation also influenced the market of power generation equipment. As the supplier of power generating equipment, DTC was inevitably faced with more fierce competition. To create the core competition advantages of service of the Company, “after-sales service” surpassed “interpersonal

harmony” and “technical innovation” for the first time and became the first important factor of the institutional environment of the Company. At the same time, in addition to continuously keeping on researching and developing coal-fired steam turbine with large capacities, DTC also vigorously developed nuclear turbine, gas turbine and many other related new products, and established a great number of branch companies, impelling the important internal organization reform and the conversion of management mechanism, as a result, “innovation” became the secondly important factor in the institutional environment of the Company. Of course, along with the development and changes of the enterprise, the “interpersonal harmony” formed at the initial stage had no great change, which was still one of the important factors of the institutional environment of the enterprise.

**Figure 4-7 Comparison of the Characteristics of Each Institution at the Third Stage**



#### 4.1.4 Stage IV (from 2006 till now)

Chinese government pointed out in 2007 that “We will deepen the reform to introduce the corporate and joint-stock systems in SOEs, improve modern enterprise system, optimize the layout and structure of state sector of the economy, and enhance the dynamism, leverage and influence of the state sector of the economy. We will promote equitable market access, improve the financing environment and remove institutional barriers in order to promote development of individually-owned businesses and private companies as well as small and medium-sized enterprises. We will develop the economic sector of mixed ownership based on the modern property right system.” It reiterated and underlined that joint-stock company represented the reforming direction of SOEs while the economic sector of mixed economy developed based on modern property right system, which had promoted further combination of the state sector of the economy and market economy.

The Chinese government made great achievements in the property right reform of SOEs during this stage, from the establishment of socialist market economy, to the establishment of modern enterprise system, to the strategic adjustment of the layout of the state sector of the economy, and then to the establishment of the modern enterprise property right system. Actually, since the proposal of the establishment of the modern enterprise system was put forward, the reform of SOEs advanced with twists and turns.

The extremely sluggish progress was attributed to the following reasons: even though establishing a modern enterprise system was the latest theoretical achievement in China at that time, it was unrealistic to establish it within the existing SOE framework, that is, without clear property rights, as these are the root and core of a modern enterprise system. The idea of establishing modern property right system proposed by the Chinese government in October 2003 was rather a theoretical than a practical approach to the problem.

During this period, the reform, taking central and large enterprises as the main body and developing the economic sector of mixed economy as its main content, was undertaken when the transformation of China's economic system had been basically completed, the basis of socialist market system had been established, an integrated, open, competitive and orderly market system had been formed, and the modern enterprise system had been preliminarily built.

During this stage, DTC experienced a major corporate system reform in the aftermath of the "May 12 Wenchuan Earthquake", of its reconstruction in another place and a series of other events. This period also witnessed the company's extraordinary and rapid development.

How did DTC establish its modern enterprise system? In Oct. 2006, the state-owned property rights of E'mei Semiconductor Materials Plant were appropriated by Dongfang Turbine Co., Ltd and then the company entered into the field of solar electrical energy generation. In December 2006, DTC was divisionally transformed into DTC and Dongfang Steam Turbine Investment Development Co., Ltd., and the modern enterprise system was established. In November 2007, the main asset of Dongfang Electric Corporation (DEC) went successfully public. As a wholly owned subsidiary of Dongfang Electric Co., Ltd., DTC completed its transformation into a share-holding system and became a listed company.

After being completely destroyed by the 2008 devastating Wenchuan Earthquake, DTC's reconstruction and relocation from Mianzhu City to Deyang City was successful. "In terms of reconstruction, we chose a very good route, and I invited the Central Enterprises to come here. The Central Enterprises have great impact and strong sense of social responsibility. The

result of the reconstruction battle was that DTC was rebuilt within a little over one year (Zhang Zhiying, 2011). In 2010, a new enterprise covering an area of 2,600 mu (about 428 acres), with a floor area of 660,000 m<sup>2</sup>, was built anew. The enterprise process and the whole layout were made much more reasonable with a much more advanced equipment.

Meanwhile, the product structure of DTC was also upgraded. Coal-fired turbine was transformed from a sole focus on 300MWW to batch production of 600MWW and 1,000MW and the turbine technology was transformed from sub-critical to super-critical and super super-critical. In 2010, three nuclear turbines were fabricated in a batch, which is far ahead of competitors; also 14 gas turbines were produced, which made the export possible. Later, the company advanced towards the wind power field, establishing six subsidiaries for wind power all over China, which produced 6,680MW of wind turbine generators altogether. DTC also developed energy storage battery and wind-PV storage system, proactively, thus initiating a transformation from traditional products to clean energy and new energy products.

**Table 4-6 Summary of Product Output from 2006 to 2010**

Type of turbines	Year	2006	2007	2008	2009	2010
Coal-fired turbine	Lower than 100MW (set)	41	40	59	78	101
	100MW (set)	5	2		5	1
	135MW (set)	10	8	8	3	
	150MW (set)	3	2	3	6	5
	200MW (set)	6	3	1	1	3
	300MW (set)	28	23	22	23	22
	600MW (set)	22	26	17	19	27
	1000MW (set)	2	2		5	3
Nuclear turbine	1000MW (set)			1		3
Gas turbine	270MW (set)	5	2		2	1
Wind turbine units	1.5MW (set)	40	206	800	1326.667	1580
	2MW (set)					3

Source: *Statistical and Historical Data of DTC*

**Table 4-7 Summaries of Output and Major Economic Indicators from 2006 to 2010**

No	Index	Unit	2006	2007	2008	2009	2010
1	Output of power station steam turbine	10,000 KW	2866	2550	2200	2718	3284
2	Output of wind turbine generator	10,000 KW	6	31	120	199	237
3	Gross industrial output value	100 million yuan	82	95	108	167	192
4	Industrial added value	100 million yuan	25	25	17	26	28
5	Output delivery value	100 million yuan	1.8	4.1	13	15	25

Source: *Statistical and Historical Data of DTC*

In the questionnaire for the fourth stage, as shown in Figure 4-9, as the years increase, DTC's scores become higher and higher, which means that DTC's institutional environment substantially changes, and that the status of the institution became more and more important in the development of the company. This is specially true in the years before 2009; after 2010 the institutional environment of DTC tends to stabilize.

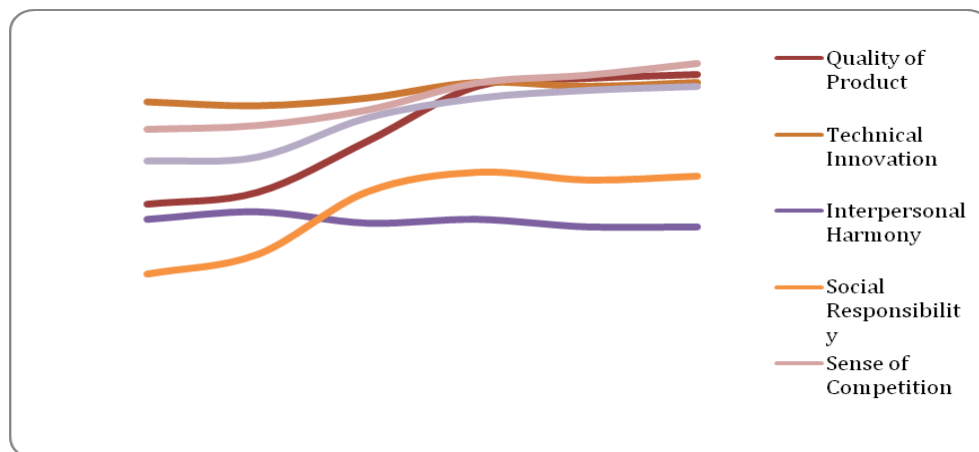
In the fourth stage, the characteristics of the institutional elements are shown in Figure 4-10. The most significant are, respectively, "technical innovation", "after-sales service" and "market competition". During this stage, DTC began to research and develop wind power products in a large scale, and moved forward to new fields such as solar energy and sea water desalinization. DTC had been restructured in 2006, through the reform of corporation and joint stock system and the establishment of a modern corporate system. At that time, innovation was its most important institutional characteristic.

Currently, as more than 4000 sets of wind power products have been sent to power plants, and such products are different from steam turbines, requiring installation, commissioning and operation maintenance to be provided by DTC the company had to set up a special service organization for wind power equipment and to sent out many batches of persons to permanently stay and provide service at site. Therefore a new system had to be implemented bringing in a service mode similar to "4S" (Sale, Spare parts, Service and Survey) for automobile, regarding service as an important part of the quality. Especially at present, DTC is developing and implementing the concept to transform the company from an enterprise engaged in production and management into one focusing on manufacture and service, thus making "service" become its corporate strategy, highlighting the important status of service in its overall strategy.

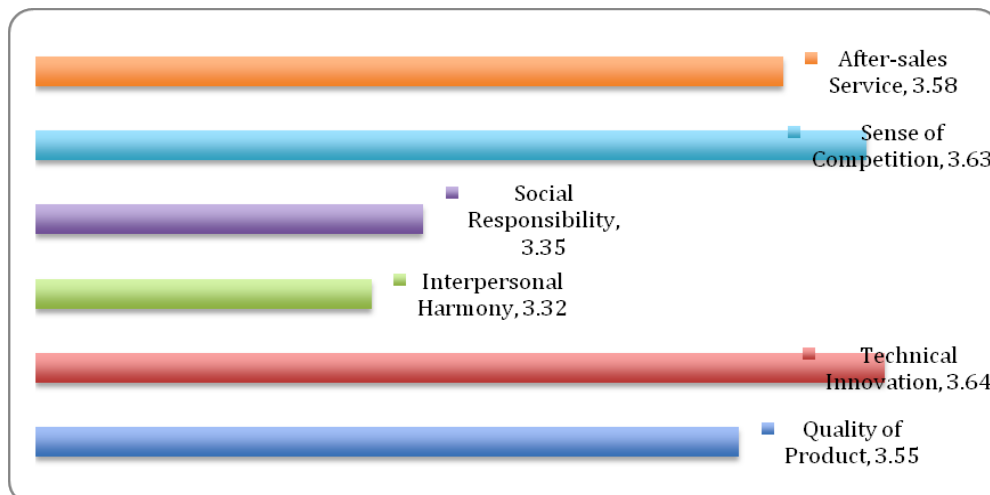
After 2008, DTC faced two kinds of crisis: the earthquake and the financial crisis. Along with a slower growth of the economy and a reduction in the demand for electric power and power generating equipment, particularly after the nuclear radiation in Fukushima, Japan in 2011, the safety of nuclear power station was doubted, and the Chinese Government also suspended the construction of nuclear power projects, a decision that had great impact on DTC since its leading products are for the nuclear power industry. In addition, the market demand for wind power products in 2010 was markedly reduced, and DTC's orders decreased by more than 50%; the coal-fired power market was also affected by many factors, such as the rise in coal prices. These factors coupled with difficulties of financing by the enterprise and the restriction of environment and resources, caused the whole industry to start to lose money,

and the demand for electric power construction projects decreased by more than 30%. The reduction of market demand brought more competition among enterprises so, at this stage, the sense of market competition became the most important of all factors of the institutional environment, ranking the first three. This characteristic well matches the conclusions obtained from the in-depth interviews, which means that both middle-level cadres and top leaders reached a consensus about this question.

**Figure 4-8 Trends of the Characteristics of Each Year at the Fourth Stage**



**Figure 4-9 Comparison of the Characteristics of the Institutions at the Fourth Stage**



#### 4.1.5 Comparison of the Characteristics of the Institutions at Each Stage

As shown in Figures 4-1 and 4-9, the questionnaire results for each stage, except for “interpersonal harmony”, the other five characteristics of the institution got higher scores as

the stages progressed, which means that along with the development of the company, the quality of product, technical innovation, social responsibility, sense of competition and after-sales service were more and more important and became the most significant characteristics of the institutional environment of the company. At the beginning of its establishment, DTC was an enterprise of the “Third Frontline Construction” and was supported by the government, and its products during the initial period were manufactured according to the aid-construction drawings. Following the development of the enterprise, the government reduced its support to DTC’s product research and development as well as finance. In order to survive, DTC had to develop the products independently, and 300MW steam turbine is a product over which DTC has Independent Intellectual Property Rights.

Later, in order to meet the market demand, DTC started to develop a large variety of products. So, starting from 1970s, innovation was the main theme of the company and got higher scores along with the development of the enterprise, ranking first not only at the fourth stage, but also during the whole development period of the company, even surpassing “interpersonal harmony”, and becoming the first important factor of the institutional environment of the company.

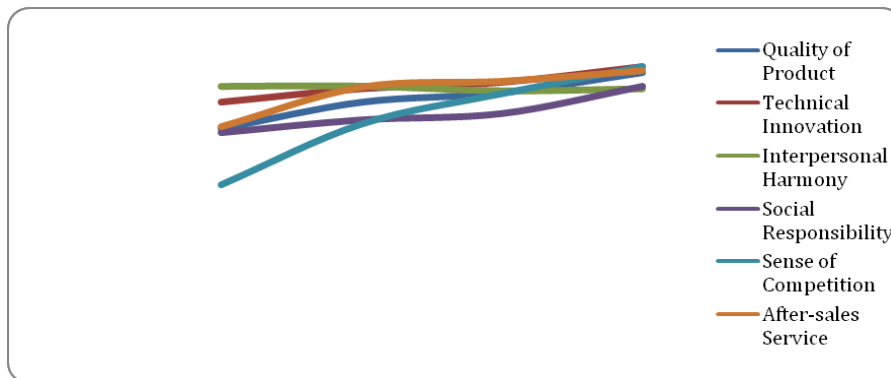
Due to lack of good opportunities, topographical advantages and rich resources, in such an unfavourable external environment, DTC could only depend on the internal unity and cooperation as well as on self-reliance. At the first and second stages, the score of “interpersonal harmony” was the highest one and therefore the most important factor of the institutional environment of the company. As all the leaders were promoted internally, along with the development of the enterprise, this excellent institution of harmonious interpersonal relationship could be inherited by the leaders, and the score of “interpersonal harmony” was still very high at both the third and fourth stages. From the point of view of the whole development period of the enterprise, “interpersonal harmony” ranked second and was the most stable line of all institutional characteristics, always keeping its important position.

Before 1980s, the Chinese government implemented the planned economy system and carried out the free supply system according to which enterprises produced and sold following instructions of the government. Since there was a lack of market competition, the service level of the enterprises was not high. After the 1980s, along with the reform from planned economy to market economy in China, the DTC deeply involved itself in market competition, the level of service decided the customer satisfaction and influenced the number of orders in the market, thus the rank of the “after-sales service” element changed places from third at the first

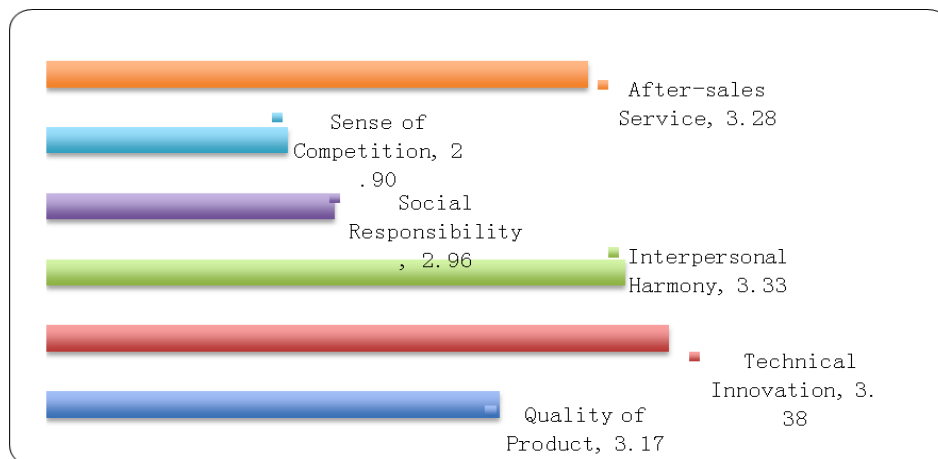


stage to second at the second stage, and then became the first at the third stage surpassing “technical innovation” and turning into the most important characteristic of the Company. From the point of view of the whole development period it is noticeable that the score of “after-sales service” ranked third and has been one of the very important factors of the institutional environment of the DTC.

**Figure 4-10 Variation Trends of the Characteristics of the Institutions at Each Stage**



**Figure 4-11 Comparison of the Characteristics of the Institutions at the Development Stages of the Enterprise**



## 4.2 Development Stages and Characteristics of Corporate Culture of DTC

The corporate culture of DTC is divided into four characteristic stages according to all the collected data. The four stages are consistent with the stages of institutional environment, with different characteristics of each stage.

#### **4.2.1 Corporate Culture at the Early Stage (1966-1982)**

In 1966, in order to respond to the call of “Third Frontline” construction from the central government, the first generation of DTC arrived at the town located in west Sichuan, turning it into a beautiful “prosperous DFSTW” from badlands with the help of simple tools without any mechanical aid. To construct and develop Chinese turbine industry, they carried out the spirit of “daring to fight tough battles” and “daring to gnaw hard bones”, devoted their youth and even their lives, and dedicated their descendants to the arduous and distinguished construction. The first director of DTC said, “We did not have advantages in terms of good opportunities, not even the topographic advantages; we could only rely on ‘interpersonal harmony’ in the mountain.” Meanwhile, various ways were utilized to create the culture of “Interpersonal harmony”, which brought a bright future for the self-fulfilment of employees. Then, the corporate culture of “Interpersonal harmony” was created, and the hardworking and enterprising spirit, dedication, and democracy became the major cultural characteristics of this stage.

These cultural characteristics could be seen everywhere. For example, to expedite the implementation scheduling, not only workers, but also cadres and technicians, participated in pipeline excavation, reinforcement of transportation, equipment installation, and other arduous factory construction works. In this sense, the production was carried out along with physical asset construction. As a result, in 1971, the first turbine was produced. In 1974, DTC passed acceptance upon the factory completion.

Many members moved their families to DTC. Besides working in it for a lifetime, some staff and workers asked their children to work in it as well. The employees’ family had developed from the first generation to the second and even to the third generation. The colleague-relative relationship connected DTC with the fate of staff and workers closely. Technician school, college, hospital and farm for employees were built to solve their worries about anything. At that time, any employee in trouble would get help from many people, creating a humane environment. During the 1970s, the state encouraged a rational flow of talents and over 500 people of DTC chose to work in other cities. At that time, DTC was confronted with the problem of “Talents flying to the Southeast”. “In order to stabilize the talented people, I put forward the idea that although we were sent to the ‘Third Frontline’ located at the mountainous areas, we could not live an ascetic and dull life, and we must create living conditions similar to those in the city, and we decided to build a TV receiving station by ourselves” (Chen Kuanjin, Interview Record, 2011). One year later, some workers

returned back one after another. Wherein, one employee who had gone to Wuxi Blade Plant sighed with emotion, “even though Wuxi is quite beautiful, I cherish more the cordiality in DTC”, which demonstrated the charm of the culture of “Interpersonal harmony”.

**Table 4-8 Typical Events of Corporate Culture from 1966 to 1982**

No	Time	Events about Corporate Culture
1	Apr. 1966	Establishment of work-study program secondary technical school
2	Apr. 1968	Establishment of primary school for children of employees
3	Oct. 1968	Establishment of middle school for children of employees
4	Dec. 1968	Publishing of the 1 <sup>st</sup> newspaper of DTC
5	Jan. 1977	Awarding advanced individuals in “Learning from Daqing” activities
6	Jul. 1980	Establishment of college for employees
7	Apr. 1981	Establishment of the 1 <sup>st</sup> Group Wedding for Employees
8	May 1981	The debut of amateur employee art troupe
9	Jan. 1982	The DFSTW Workers’ Newspaper changed into Newspaper of DFSTW
10	Apr. 1982	Initiation of technical title assessment for senior engineers and engineers
11	May 1982	Physical inspection for intellectuals and establishment of health files
12	Sept. 1982	Opening of the first semester of economic theory class
13	Sept. 1982	The completion of the 1 <sup>st</sup> remedial teaching for employees
14	Sept. 1982	Compiling special video recording
15	Nov. 1982	The awarding of Woman Volleyball Team as Champion of Employee Volleyball League in Mianyang

Source: *Chronicle of Events of DTC*

#### **4.2.2 Corporate Culture at the Growth Stage (1983-1992)**

“In 1983, I said four sentences: ‘Policies shall be implemented smoothly and human relations are harmonious; strive to carry out reform; have courage to innovate and achieve goals determinately’, which were the most original formulation of the corporate culture of DTC” (Chen Kuanjin, Interview Record, 2011)”. In 1986, after soliciting opinions from all

employees and repeated discussions, DTC finally put forward “Democratic and harmonious human relations, devotion and fighting, innovation and pioneering, achieving goals determinately” as the core contents of its organizational culture. DTC’s culture epitomizes the employees’ spirits and thoughts. After many years of practice, such culture gradually took shape and became a consensus of all staff. Resolving to carry out reform and having courage to innovate became the leading cultural characteristics at such stage.

The corporate culture of resolving to carry out reform radiated various reforms. For example, the business policy of “be an itinerant merchant and involve in several trades” was brought forward to break the chain of the planning mechanism, so as to turn to the market economy and compete with peers in the market. According to the product features and division on the basis of specialization, DTC upgraded its workshops into subsidiary plants and functional offices into functional business divisions, enlarged the decision-making power of the grass roots, implemented decentralized and hierarchical management, realized the unity of power, responsibility and benefit, and initially established the basic management framework and management mechanism. The internal monetary system was carried out; independent accounting and quota management was practiced to arouse the enthusiasm of the grass roots. Since 1984, PRIME super mini electronic computers and dedicated quota electric computers were installed to boost the financial management computer aided system, as well as staffing, labour and capital, attendance checking computer aided management system and the transportation management computer aided management system, to boost the computerized management accordingly.

Having the courage to innovate was fully embodied in the products. At that time, market economy had sprouted. After the 300MW steam turbine came out, new products had to be worked out to explore the new markets. At that time, DTC put forward the product innovation policy that “staring into the pan with bowl in hand, thinking about the next meal”. During that period, D06 steam turbines developed into D42, and the cooperative design and manufacturing for 600MW steam turbine was launched. DTC successively developed many irrelevant marketable products. “What we did then was what some township enterprises would not like to produce nowadays, such as gates of hangars for the airplane, oil tanks for the automobile and folding chairs. At that time, we had the advantages of materials, so the alloy steel could be used to manufacture kitchen knife, and to some extent, we can say that DTC was starting from selling kitchen knives. This was a precocious concept.”(Chen Kuanjin, Interview Record, 2011)

**Table 4-9 Typical Events of Corporate Culture from 1983 to 1992**

NO	Time	Events about Corporate Culture
1	Jan. 1984	Proposed the plan of establishing the civilized factory
2	Mar 1984	The Labour Union celebrated birthdays for the single employees
3	July 1984	Made the provision that intellectuals took a vacation locally.
4	July 1984	Trained the first batch of the recruited cadres
5	Aug. 1984	Sichuan Daily publicized our “24-hour service spirit”
6	Sept. 1984	Founded the internal comprehensive publication named <i>Reform and Management</i>
7	Sept. 1984	Launched the incentive plan to overcome technical difficulties (bonus of RMB ¥ 100 to 1,500 Yuan for each item)
8	Oct. 1984	Participated in the enterprise management study class for managers and factory directors
9	Dec. 1984	Set up the economic system reform study class
10	Apr. 1985	Founded the Reading Activity Guiding Committee
11	May 1985	Held the first employee track meet
12	May 1985	Set up the Calligraphy and Fine Arts Association
13	May 1985	Began to cultivate university students for specific posts
14	Sept. 1985	Held the new year colloquium for 200 junior college graduates and technical secondary school graduates
15	Nov. 1985	Issued honour certificates for old employees who worked for DTC for 20 years
16	Aug. 1986	Held the first rationalization proposal lecture
17	Oct. 1986	Celebrated the first anniversary of Dawning Literary Association
18	Sept. 1987	Established the “focus on ideals, compete for contributions” leading group
19	Apr. 1988	Organized the thousand people technical contest
20	Oct. 1988	Held the first commendation meeting for young science and technology prize
21	Aug. 1990	Held the team construction working conference
22	July, 1992	Amateur art troupe

Source: *Chronicle of Events of DTC*

#### 4.2.3 Corporate Culture at the Mature Stage (1993-2005)

In 2005, according to the environment at that time, DTC organized all employees to have an intense discussion on DTC Culture. As a result, the new spirit with era characteristics was put forward, in which the core contents were “practical and harmonious, innovative and pioneering”. The enterprise tenet of “green power to benefit human beings” and the code of conduct of “work wholeheartedly and behave properly” was proposed for the first time, which

enriched the operation philosophy of “sincerity foremost and win-win cooperation”, the technology concept of “one step ahead, strengthen competitive advantages”, the quality philosophy of “continuous improvement to create perfect products”, the management concept of “people foremost, efficiency prioritized”, the talent concept of “an enterprise brings up talents and talents raise the enterprise up”. In addition, the enterprise strategies, code of conduct of employees were planned, corporate philosophy, behaviour and image identification systems were formed, and the DTC Culture went into the mature stage. Being pragmatic and pioneering became the main cultural characteristics at that stage.

Then, the pragmatic enterprise style was reflected in all aspects of the operation management. For example, when there appeared a nationwide upsurge of joint venture, in order to learn the foreign advanced technologies and management, DTC began to negotiate with SIEMENS on a possible joint venture in February 1993. However, with the deepening of negotiations, it was found that the strategic objectives of DTC and SIEMENS were different, and if the joint venture was implemented, we would lose the dominant right of development and could not feed most employees. Although the higher-level government had approved the joint venture, DTC decided to give it up based on the actual situation. “In the hardest days, we swallowed our pride to work for such internationally well-known electrical equipment companies as GE, ALSTOM, SIEMENS, ABB, and TOSHIBA. As a result, we not only fed employees but also learned the advanced technology and management of other countries.” (Zhang Shenquan, Interview Record, 2011) .

The pioneering corporate culture pushed the product development forward. According to the tenet of green power, DTC introduced technologies relating to power generation by nuclear power, gas turbine and wind. In April 2005, it received its first order of 7×1.5MW fans; the first 1,000MW nuclear turbine produced in Dec. 1999 was forwarded; four 270MW gas turbines were successfully produced in 2005, which symbolized that DTC had achieved the transformation from traditional energy to clean energy and new energy and that the development pattern of simultaneous development of diversified power resources had been formed. In March 1997, the company got the independent management right for importing and exporting business. Between 1997 and 1998, 4×325MW steam turbine sets exported to Iran were successfully completed and delivered, which set a record for an export item with the maximum single-machine capacity and symbolized that we had made great progress in exploring the international market.

**Table 4-10 Typical Events of Corporate Culture from 1993 to 2005**

No	Time	Events about Corporate Culture
1	Apr. 1993	Founded the DFSTW University for the Aged
2	Apr. 1993	Appraised and elected the first batch of professional technical talents with outstanding contributions
3	July 1993	Launched the third appraisal of workers and technicians
4	Mar 1995	Undertook the Deyang Business Management Site Meeting
5	Nov. 1996	The fourth physical examination for all employees
6	Nov. 1996	Celebration for the 30 <sup>th</sup> anniversary of DTC
7	Apr. 1997	Listed into the first batch of management standardization qualified enterprise of Sichuan Province
8	Apr. 1998	The first batch of personnel directed by their tutors signed contracts
9	Oct. 1998	Jointly held the class for advanced studies of business administration
10	Apr. 1999	Held the first training class for management
11	May 1999	Undertook the Seminar of Working Concept of Enterprise Image Creation of Machinery Industry in China
12	Jan. 2001	Appraised and selected ten technical progress and management achievements
13	July 2001	Compiled the Chronicle of Events (1966-2000)
14	Aug. 2001	Established the Literature and Arts Association
15	Nov. 2001	Held the first Culture and Art Week of DTC
16	Nov. 2002	<i>DTC Culture</i> officially published
17	May 2003	Launched the building of enterprise image identification system
18	Nov. 2003	Held the Technical Innovation Annual Academic Meeting
19	Apr. 2004	Listed into the pilot units of young worker skill improvement plan
20	June 2004	Carried out the activity of learning organization building
21	July 2005	Compiled and printed the <i>Employee Manual</i>

Source: *Chronicle of Events of DTC*

#### 4.2.4 Corporate Culture at the Transforming Stage (2006 till now)

In 2008, a catastrophic earthquake broke out in Wenchuan, Sichuan Province. However, the corporate culture of DTC was fully embodied in the face of such disaster. In February 2009, the Chinese government summarized the “DTC Spirit” in the new age as “no fear of sacrifice, striving for success, perseverance, arduous pioneering, independent innovation and scaling new heights”, which represented the embodiment and sublimation of the national spirit of the Chinese nation in combating the earthquake and carrying out relief work. The

“DTC Spirit” was the crystallization of wisdom and diligence, ceaseless self-improvement and devoted and fighting spirit of several generations of the people in DTC in the past 43 years, experiencing pioneering with arduous efforts, reform and development, combating the earthquake and carrying out relief work, recovery and reconstruction.

In the new period, after the Wenchuan Earthquake, the organizational culture radiated various aspects such as combating the earthquake and carrying out relief work, recovery and reconstruction, reform management, product development, quality improvement, marketing service, and construction of talents. For example, during the earthquake relief, all management and employees always stood on the front line, risking their lives to rescue the injured employees under the condition of continuous aftershock. In the course of recovery and reconstruction, employees lived in tents. In 2008, rather than taking a rest at weekends, employees devoted to production recovery and reconstruction, which reflected the organizational culture of being firm and indomitable and pioneering with arduous efforts. Currently, the company is committed to research and study new products such as the 1,200MW coal-fired turbine, 50MW gas turbine, 3MW wind turbine generator, the third generation nuclear power generating unit CAP1400, and tries to develop more products with independent intellectual property. DTC thought that the corporate culture was embodied in the products. For example, during the interview, Zhang Zhiying, the former General Manager of DTC said, “What reminds people about the Spirit of DTC is the product, service and management of DTC”.

## **4.3 Influence Mechanism**

### **4.3.1 Theoretical Framework of Analysis**

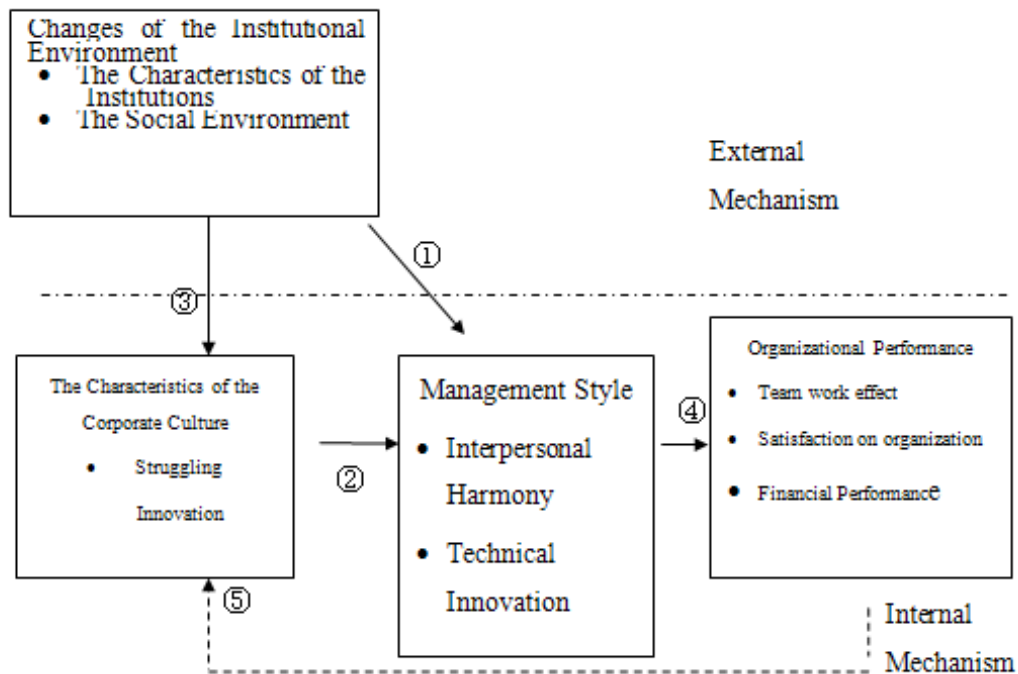
According to the institutional process theory of corporate culture (Kondra and Hurst , 2008), the external pressure, uncertainty and socialization would promote the development process of corporate culture from compulsion to simulation and standardization. Policies and requirements of the State determine DTC’s development direction, as it is a wholly SOE; so, policies for SOEs directly affect DTC’s institution. In addition, pressure from uncertainty and socialization of external institutions push forward DTC internal corporate culture to adapt to such institution and to develop. In view of the analysis above, both institution and corporate culture have specific characteristics in each stage. The impact on DTC’s corporate culture by the institutional environment will be studied through analysing the typical events and



questionnaires specifically designed for this thesis.

Based on the literature, the theoretical model as shown in Figure 4-12 in Chapter IV was put forward and the empirical research taking DTC as a case study, enabled the conclusions of in-depth interview and questionnaires to verify the initial theoretical model. As an enterprise solely funded by the state, DTC's institution is determined directly by the system of SOEs, which also influences the values and criteria of conduct. Ultimately, the institutional environment of the enterprises and the values of the leaders also impact on the corporate culture. It is generally thought that SOE are a symbol of low efficiency and low fighting (which is the direct influence of the characteristics of the institutions on the corporate culture); nevertheless DTC is an outstanding representative of SOEs, its leaders have great influence on corporate culture, which is closely related to the emphasis on team work and culture inheritance by the leaders who have successively served in DTC and have played an important role in the culture construction. Combining with the theoretical model and setting DTC as an example, the influences on the culture of DTC coming from external and internal factors will be analysed as follows:

Figure 4-12 Theoretical Model



Proposition 1: The institution theory believes that the institutional environment where

the organization is situated will influence its characteristics of management, resulting in all the enterprises having the same structure properties, a phenomenon called “Isomorphism”, thus we think the institutional environment will influence the management style of the enterprise, as well as its changes.

Proposition 2: The corporate culture theory believes that the corporate culture is the personality of an enterprise with comparative stability, and enables the enterprise to have heterogeneity, so we think the characteristics of the organizational culture will influence the management style of the enterprise, and the culture of an enterprise will make the management style thereof with comparative stability.

Proposition 3: The institutional environment with which the enterprise is confronted will also influence the changes of the corporate culture. All the organizations exist in the external environment, which will influence the structure, practice and activities of the organization, so we think the corporate culture is one component of the organization, and the external institutional environment of the enterprise will influence the corporate culture inside the enterprise.

Proposition 4: The Management Style refers to the style and behaviour displayed by the administrator with influence of the corporate culture and management philosophy, which has further impact on the organizational performance, reflecting on several aspects, such as group efficiency and organization satisfaction.

Proposition 5: The Theory of Organizational Change believes that the changes in the internal and external environment of the enterprise will influence the organizational reform. So we think that in the long run, the relatively low organizational performance inside the enterprise will promote the reform of the corporate culture in turn.

Combining with the above models, we will analyse and expound the organizational characteristics of each development stage of the enterprise studied.

#### **4.3.2 Analysis and explanation for the characteristics of each management stage**

##### **4.3.2.1 Impact Analysis of Stage I (1966-1982)**

In response to the international military situation, the Chinese government made the decision of carrying out the third frontline construction, and made regional adjustments to the Chinese economy and the enterprise strategic layout. As a SOE, DTC was founded in “the Third Frontline” under the unified allocation of the Chinese government, with employees

transferred from Harbin and Beijing. The institution of SOEs participating in the third front line construction was the institution to be mainly followed by DTC at that time. Such institution was nationally mandatory, requiring that SOEs and employees thereof must serve the national strategy and must be dedicated to the national defence. The institutional features of such devotion produced great impact on the early stage of DTC. Ding Yi, the first director of DTC, actively responded to and followed the national strategy, formulated the corporate system of following the third frontline construction, and took various measures to drive the organizational culture to adapt to such philosophy. Gradually, his “devoted and fighting” spirit became one of the important features of DTC’s corporate culture.

In 1966, the Chinese government was quite poor, and only allocated RMB ¥ 50,000 Yuan as the establishment fund of DTC which was far from enough. During the interview, Ding Yi, the first director of DTC said, “At the beginning of the establishment of DTC, we did not have very high requirements for the living conditions, and only wanted to have enough to eat and wear, without other pursuits”. At that time, the monthly salary was just over 20 Yuan. In the remote rural area far away from such big cities as Shanghai or Harbin, there were no roads, bread, milk or TV. Employees had to drink water from the river and live in temples. The abominable economic and natural conditions, embodied by terrible shortage of materials and extremely hard living conditions, brought up the institutional and organizational culture feature of “pioneering with arduous efforts”.

After eight years’ construction, DTC was just a medium and small-sized steam turbine plant, which could only produce single machines of 200MW below. Even following the natural disaster of the Tangshan Earthquake that occurred in 1976 and the substantial adjustment of the national economy of China in 1981, there was no national plan for power station steam turbines; therefore, DTC had no appropriate opportunity. Furthermore, the company was located in Hanwang and have no favourable geographical position as it is a remote rural area with a very inconvenient transportation. Consequently, managers and working staff all realized that DTC would only develop on its own account with harmonious human relations to form powerful cohesion. The core content of institution and organizational culture at this stage was “democracy and harmony in human relations”.

Researching and developing 300MW steam turbine of DTC was a typical event occurring at the stage. In 1975, DTC manufactured steam turbines of a total capacity of 625MW, including two 200MW steam turbines and three 75MW steam turbines, achieving the design objective in the first year after the completion acceptance and creating the best

performance in history. However, Ding Yi, the first director of DTC, ever engaged in design, also realized that 200MW turbine was in fact an interim product, which would be gradually eliminated, therefore, it was necessary to carry out research and development on 300MW turbines. At that time, many of the first undergraduates receiving education after the founding of the People's Republic of China came to third frontline area from Shanghai and Harbin and were eager to dedicate themselves to the steam turbine industry of China. They were dissatisfied with only producing 200MW turbines and were keen to pursue a higher level of technology, and as a result, the design scheme of producing 300MW turbines was proposed. Consequently, in 1974, 200M steam turbine generators were produced while 300MW turbines were developed.

Meanwhile the assignment for technical design was reviewed and approved by the central government and, since then, the government determined to introduce 600MW steam turbine in Harbin Turbine Company Limited and 300MW steam turbine in Shanghai Turbine Company, and no definite product type was determined for DTC. Later, the government required DTC to stop designing and producing 300MW turbines. Director Ding Yi disagreed and, with no fear of being dismissed from his post, guided workers and staff to carry out research and development on 300MW steam turbine of world advanced level without funds from the government. In 1982, 300MW steam turbine successfully passed the review of national design and achievements of scientific research and were finally allowed to be produced. The first 300MW steam turbine was designed and produced for Sichuan Province and gasoline was used as its fuel , without any master plan from the government. In the meanwhile Shandong Province took the lead in the reform and opening up of Chinese economy and needed electric power construction to develop its economy. As a result, DTC negotiated with relevant competent officials from the government of Shandong Province, and they consented to install its 300MW steam turbine at Shandong Huangtai Electric Power Plant. This was the first order of a steam turbine in the market economy that DTC obtained. From then on, the first 300MW steam turbine was successfully put into market through research and manufacturing for eight years, indicating that the scientific research level, design capability, manufacturing capability and operation capacity of DTC entered into a higher level, which made DTC become the large-sized steam turbine works in China.

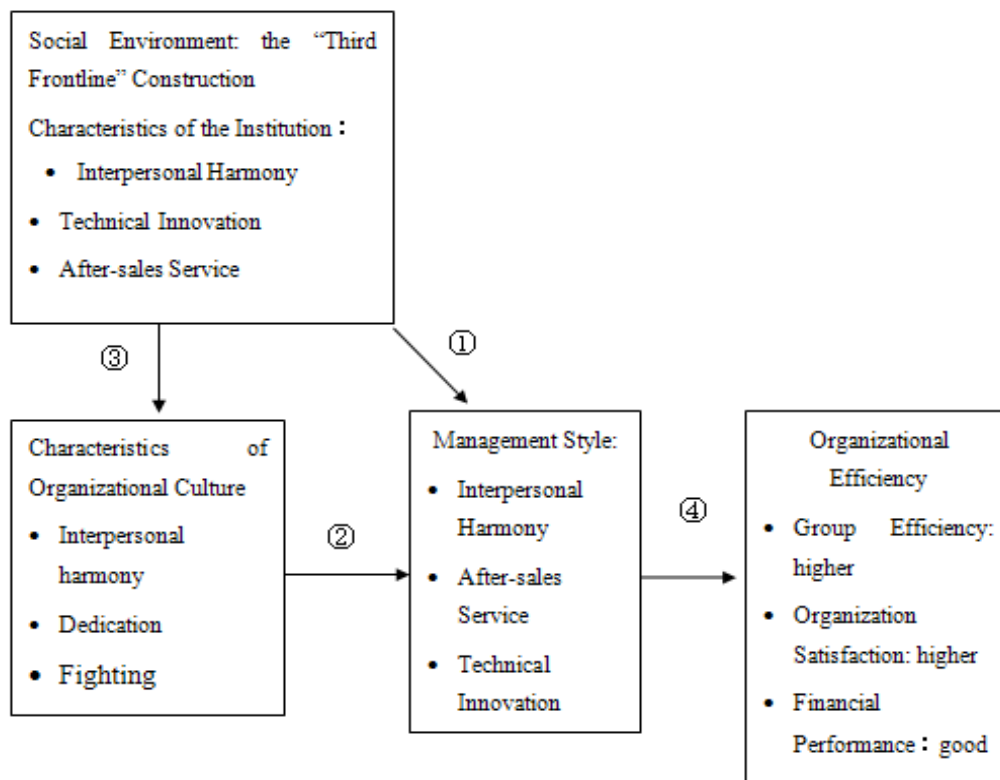
The successful research and manufacturing of 300MW steam turbine not only made DTC step on an important stage of development, but also strengthened the corporate culture of “pioneering with arduous efforts, dedication and fighting, democracy and harmony in

human relations”.

In the fourth part of the questionnaire, in terms of the 10 items about institutional characteristics, the score of the data related to “The actual performance compared with other enterprises, especially the competitors” is the result of annual recollection which average value is then calculated, showing the emphasis the leaders of DTC place on the contents of these 10 items and the characteristics of the management style. Finally the average value of each year at each stage is calculated, and converted to the characteristics of the management of that stage, wherein “1” stands for the worst, and “5” stands for the best.

After calculation, the first three characteristics of the management style of the first stage are respectively “interpersonal harmony” with a score of 3.31, “Technical Innovation”, (2.71) and “after-sales service” (2.67).

**Figure 4-13 Analysis on the Synergistic Effect Mechanism of the Institutional Environment and Corporate Culture at the First Stage**



In relation to the propositions formerly considered, the typical characteristics of this stage were embodied in:

Proposition 3: Under the historical environment of “the Third Frontline” and “defend the

country against war”, Ding Yi, the first director of DTC put forward the cultural characteristics of the company, including “Relying on interpersonal harmony if the objective factors are unfavourable”; “Devote our youth and even our lives, and dedicate our descendants to the arduous and distinguished construction” as well as “Fighting and struggling”, which also became an important theme maintaining the corporate culture of each stage; and supported the proposition that “the corporate culture is the culture of the entrepreneurs”. In DTC, most employees thought that Ding Yi was the symbol of the corporate culture.

Proposition 2: The institutional environment and the social environment of the remote location of this SOE also made the interpersonal harmony become the basic characteristics of the management. Obtaining the policy support from the government, the competitors could import advanced technology turbine with large-capacity from abroad. DTC realized that 200MW steam turbine was a transition product, and the market needed the turbine with bigger capacity in the future. Without the support from the government, DTC began to self-develop 300MW steam turbine, and later technical innovation became the permanent subject on researching and developing new products and boosting the corporate to develop. After 1980s, China began to implement the reform on economic policy from planned economy to market economy. Affected by market economy, and in order to improve the client satisfaction and pursue market order, DTC carried out the system of “24-hour Service” and built it as the competition advantage which still continues today.

Proposition 1: Fighting is the motive power for technical innovation; at the same time, in terms of the spirit of dedication, the general interest was realized by individual effort, and the general happiness was supported by individual happiness, thus interpersonal harmony became the lifeline of the development of the enterprise.

Proposition 4: The positive, vigorous and harmonious management style promoted the corporate recognition between employees, and the group efficiency and satisfaction were comparatively high; thanks to the cooperation, unity, fighting and dedication, the development of the enterprise was boosted, and even in the most difficult times, DTC did not have deficit; especially from 1976 to 1981, the average profit ratio of sales of DTC reached 12.9%.

#### **4.3.2.2 Impact Analysis of Stage II (1983-1992)**

After 1978, China went through the important stage of reform and opening up, i.e. to transform from a highly centralized planned economy to socialist market economy, and to

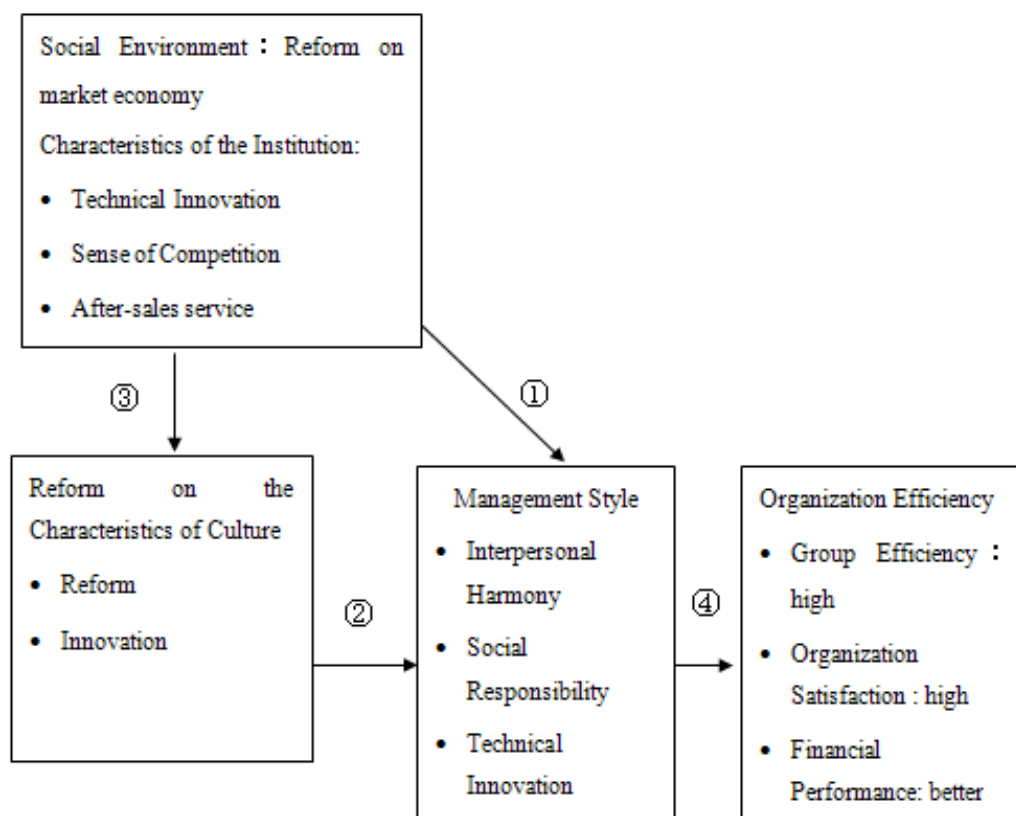
implement the opening-up policy. Influenced by such policy, to transform management mechanism became the priority of institutional transformation of SOEs in China. The Chinese central government approved DTC as a pilot enterprise of expansion of decision-making power of enterprises in 1980. Therefore, expansion of decision-making power and transformation of management mechanism became the core tasks of institutional transformation of DTC during this period. It is necessary to carry out reform and innovation in order to break the long-term shackles of planned economy and to develop market economy. Consequently, reform and innovation were the institutional characteristics and corporate cultural characteristics during this period

Chen Kuanjin, as the third director of DTC, was the strong promoter of reform and innovation for DTC during this period. At that time, in order to expand the decision making power at grass-roots level, several branch factories were established under the main workshop, with in-plant banks, currency circulation centre, settlement centre, information centre for finance and economics and centre for supervision and management established to strengthen management of production and fund, so as to adjust production relations, activate employees' enthusiasm and enhance labour productivity. In 1984, Chen Kuanjin summarized original formulation of corporate culture as "policy implemented successfully through harmonious human relations, resolve in carrying out the reform, having the courage to pioneer, achieving goals determinately", and required all departments to follow and apply it to specific work and target, thus the original formulation of corporate culture played a role of uniting all members and inspiring them to be positive. In 1986, through in-depth research on opinions from all employees of the entire works, Chen Kuanjin developed the core content of organizational culture of DTC into "Democracy and harmony in human relations, dedication and struggling, innovation and pioneering, achieving goals determinately". Although there was a little difference in expression, the core content remained the same.

From the typical case mentioned above, we can know that as director of DTC, Chen Kuanjin not just reformed the internal system of the enterprise according to the policy for SOEs in China, but also reformed the internal organizational culture according to the requirements of the internal system to make the features of corporate culture fit in with those of the institutional environment, thus the institutional requirements of the enterprise were strengthened and realized by the corporate culture. The typical case indicates that the institutional environment strongly influences the corporate culture, and also that the leader plays an important role of promotion and adjustment.

At the second stage, with the calculation and conversion of the score obtained from the questionnaire survey, we can get the first three characteristics of the management style and respective scores: “Interpersonal harmony”, 3.28, “After-sales service”, 3.16 and “Social responsibility”, 2.96 respectively.

**Figure 4-14 Analysis on the Synergistic Effect Mechanism of the Institutional Environment and Organizational culture at the Second Stage**



The typical characteristics of this stage were embodied in:

Proposition 3: 1990s was the development period of the reform on the national economic system when the Chinese government strengthened the opening up to the outside world, and the rapid development of private enterprises and foreign-owned enterprises made the market competition more intense. The “after-sales service” in the institutional environment replaced the “Technical Innovation” as the second important factor, and the reform and innovative theme culture were put forward inside the enterprise.

Proposition 2: In order to meet the requirements of the external institutional environment, after-sales service became the factor that was paid more attention to by the



leaders in DTC. For example, in the event of the quality problem in the power plant, the leaders of DTC would go to the site to coordinate and handle the problem at the risk of complaining by the clients, and resume the electricity generation at the fastest speed. This won the respect of the clients and triggered more market orders by the attitude of being practical and honest. This attitude of DTC met the requirements of the outside market competition environment especially in regarding after-sales service as an important work of the administrator.

Proposition 1: After 1980, to satisfy the reform environment, the Chinese government enlarged the company autonomy and transformed the operation mechanism. DTC. Correspondingly, boosted the reforms on organization structure, management mechanism and labour distribution, and the leaders inherited the historic tradition of corporate culture. As a result, interpersonal harmony was still the management characteristic enlightened by the leaders in DTC. Due to the location in the “Third Frontline Area”, and the shortage of the public services in the city, DTC had to undertake social responsibility that should have been the duties of the government, and “social responsibility” firstly surpassed “technical innovation” and became the third important management factor enlightened by the leaders in DTC.

Proposition 4: The service awareness raised higher reform requirements to the state-owned institutions, and at the same time, the development of the private enterprises and foreign-owned enterprises also had impact on DTC’s organizational performance. Therefore, its profit ratio of sales dropped from 12.9% in the first stage to 9.3%, which also influenced the confidence and motivation of the employees.

#### **4.3.2.3 Impact Analysis of Stage III (1993-2005)**

Since 1985, in order to encourage investment from the society, the partial opening up of the power generation market to external market was implemented by the Chinese government. State Power Company was established in 1997 to address the issue concerning the combination of government function and enterprise management. In 2002, the State Council issued the Reform Program of Electric Power Institution to implement separation of power network from electricity generating plants and selling electricity to the grid through price competition as well as restructuring of electricity generation and power grid enterprises. As a result, the State Power Company was thoroughly independent vertically and horizontally. In order to “preliminarily establish a regional electricity market, which is of competition and opening”, five power generation groups, two power grid companies and four supplement

power industry groups were established by the original State Power Company in compliance with the principle of “separation of power plant from power grid.” Chinese power market has fully entered into market competition henceforth.

Competition is the most relevant external institutional environment of DTC during this stage. In order to achieve success in the market competition, DTC put forward the strategy of product development, i.e. “product cycle of manufacture, development, storage & design, making full efforts to develop leading products and actively develop diversified products”. Consequently, 600MW coal-fired turbine, nuclear turbine, gas turbine and wind turbine generators were produced under this strategy. Meanwhile, because establishing modern enterprise system was the main task of institutional transformation of Chinese SOEs during this period, DTC also actively explored reform in terms of joint stock system, Sino-foreign joint venture, corporate system and subsidiary plant. Institutional environment of market competition and the requirement of establishing modern enterprise system for SOEs drove DTC to adjust the corporate culture to fit in with the new situation. In 2005, Xu Zhengwei, the seventh director of DTC organized all the employees to discuss and develop the core contents of DTC corporate culture into “pursuit of truth and harmonious human relations, innovation and pioneering.” Consequently, “being practical-minded” and “pioneering” were the core institutional characteristics and corporate cultural characteristics at this stage.

600MW coal-fired turbine developed by DTC was the typical event of “pioneering” during this stage. With the development of Chinese economy and increased capacity of power grid, the leaders of DTC keenly realized that from that time on, 600MW coal-fired turbine would be the leading turbine generator in the Chinese power market for a long time thereof, and it would be the key to decide the future development of DTC. In 1986, DTC started to negotiate with GE on matters concerning cooperative production of 600MW steam turbine, but unfortunately, the negotiation did not succeed. In 1989, DTC started to negotiate with Hitachi Co., Ltd, Japan on cooperative production of 600MW steam turbine, and in May 1991, after 3 years of hard negotiation, the contract of “Joint Design and Production of 600MW Steam Turbine Generator” was finally entered into by and between Sun Changji, the fifth director of DTC and Hitachi Co., Ltd. As a result, technology introduction of 600MW achieved a success. In September 1992, He Muyun, the sixth director of DTC, signed a business contract with Electric Power Plant of Zouxian County, Shandong Province to produce two 600MW steam turbines. Many technical problems were resolved with the efforts of all workers and staff, and in November 1997, through five-year hard work, two 600MW

steam turbines were successfully put into operation at the plant. Moreover, in 2001, these two 600MW steam turbines were awarded grand prize and the first prize at a contest of thermal power generating unit of China. Since then, DTC products have entered a new stage of large capacity and high parameter, indicating that the development of the company has reached a higher level.

A typical event of “pursuit matter-of-fact” is the joint venture between DTC and Siemens AG. For Sino-foreign joint venture was prevailing in Chinese market, DTC ranked the third in domestic steam turbine industry and had no obvious advantage due to its location in a rural area. In order to develop outside the rural areas and become an excellent enterprise of power equipment, it is a practical choice to cooperate with international renowned companies through joint ventures to introduce the advanced technology and management method from foreign countries so as to bridge the gap with developed countries and achieve forward development. Siemens AG is a world famous tycoon of power equipment with its world leading electric power generating technology, therefore, it is an ideal enterprise DTC desires to cooperate with.

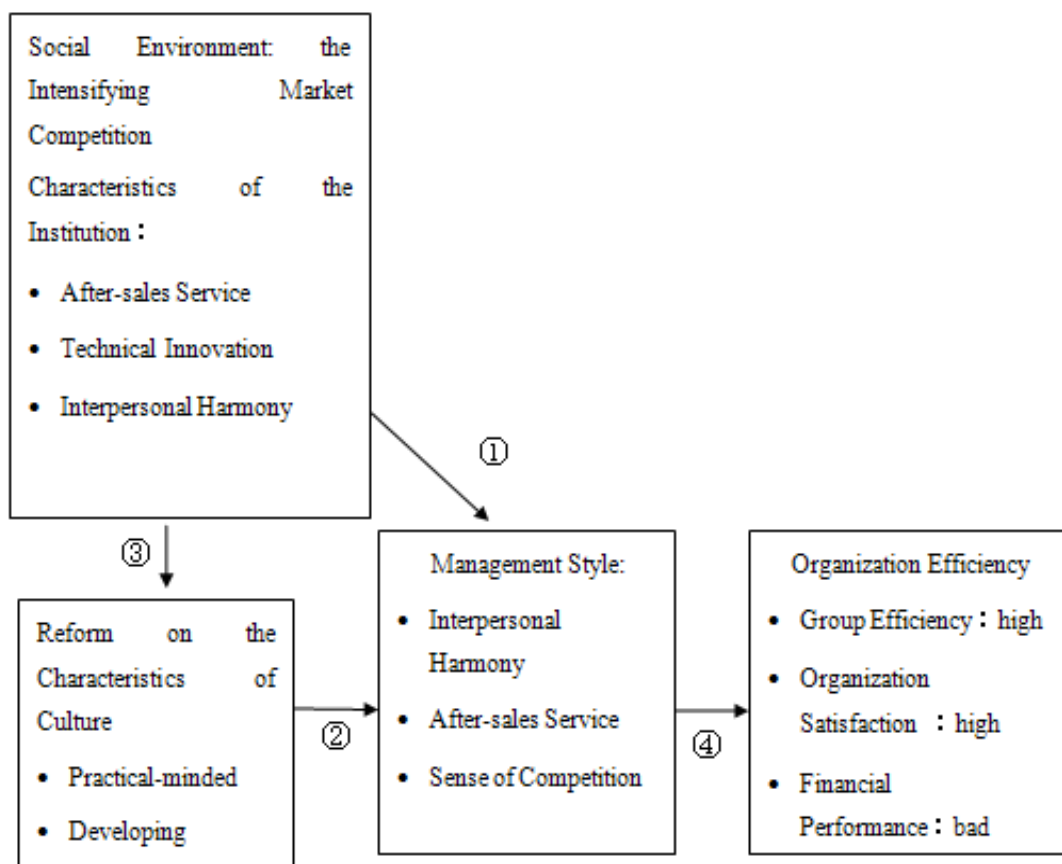
Based on the opinion that joint venture could be of great advantage to introduce advanced technology and management method so as to promote the rapid development of DTC, in February 1993, DTC started to negotiate with Siemens AG on matters related to joint venture. Siemens AG proposed to invest Deutsche Mark 170 million in DTC, and a large number of talents of technology and management would be assigned to DTC, which would be a great support of fund, technology and management. As a result, the joint venture between the two parties reached a mature condition and was recognized by the Chinese government and all employees in its early stage. However, with further negotiation, the issue of inconformity in enterprise strategic objectives appeared. In March 1995, extension of letter of intent of joint venture was entered into by and between the two parties. At that time, Siemens AG proposed to select 600 to 800 technological and managerial elites from DTC to join in the joint venture company, but the original works could produce auxiliary machinery instead of 300MW and 600MW steam turbines after Hanwang compound machining workshop and Deyang heavy machinery workshop were included into the joint venture company. Indeed, the director of our works would become chairman of the board of the joint venture company, which would enable him to have considerable remuneration similar to the German senior management. However, Zhang Shengquan, the sixth director of DTC at that time, since the joint venture company could not afford the costs of the remaining over 10,000 workers and

staff, and also could not develop steam turbine industry of China, believed that there were different strategic objectives between the two parties. Although suffering tremendous pressure, Zhang Shengquan determined not to cooperate with Siemens AG by establishing a joint venture, which was then regarded as going against the trend of the times.

The above two typical cases indicate that forward consciousness of enterprise leaders decide the direction of enterprise development. Moreover, the style of the enterprise leader influences the style of the enterprise, which is embodied deeply in the corporate culture.

During the third stage, with calculation and conversion of the scores of the questionnaire, the first three characteristics of the management style was respectively “Interpersonal harmony”, 3.28, “After-sales service”, 3.21 and “Technical innovation”, 3.02.

**Figure 4-15 Analysis on the Synergistic Effect Mechanism of the Institutional Environment and Corporate culture at the Third Stage**



The typical characteristics of this stage were embodied in:

Proposition 3: Five power generation groups, two power grid companies and four groups for secondary lines of business of power industry were established by the Chinese

government in accordance with the principle of “separation of power plant from power grid” in 2002. The Chinese power market entered then a more intensifying market competition.

Proposition 2: Threatened by the survival pressure from the institutional environment, DTC began to develop the diversified market products, such as nuclear power turbine and gas turbine, and the sense of competition became the most important content of the management style of DTC.

Proposition 1: Even confronted with the cruel competitive environment, the interpersonal harmony was still the essence of DTC’s management, and the practical-minded spirit itself also meant the adaptation to environment and combination with the individual characteristics of the enterprise itself.

Proposition 4: The conflicts existed between the sense of competition and interpersonal harmony, wherein the interpersonal harmony was for the inside of the enterprise, while the sense of competition was from the external market competition; the internal interpersonal harmony caused the high teamwork efficiency and organization satisfaction, and the highly intensifying competition of the external market also had impact on the financial performance of the enterprise, resulting in the average profit ratio of sales dropping from 9.3% at the second stage to 5.1% at the third stage.

#### **4.3.2.4 Impact Analysis of Stage IV (2006 till now)**

The Chinese government has been intensifying the reform of SOE since 2005. To establish a modern property right system is the main content of institutional transformation. DTC carried out its divisional transformation in December 2006, into main operations according to which Dongfang Turbine Co., Ltd (DTC) was established and Dongfang Steam Turbine Investment Development Co., Ltd. was founded. The overall assets from the main operations of Dongfang Electric Corporation (DEC) was successfully listed in November 2007, and Dongfang Turbine Co., Ltd. became the wholly-owned subsidiary of Dongfang Electric Co., Ltd., which achieved the transformation of joint stock system and became a public company. DTC realized institutional innovation through establishing the modern enterprise system and transforming to joint stock system. Meanwhile, DTC vigorously continued to develop new products such as 1,000 MW coal-fired turbine, CAP1400 nuclear turbine, 310MW gas turbine, 2-5MW wind turbine generator, solar power generation and accumulation system, as well as army supplies. Innovation was proved to be the theme of the enterprise system and its corporate culture in this stage when most technological and management innovation occurred in the company.

Then DTC was hit by the great earthquake in May 2008. However, the company did not close, but grew better, because its corporate culture in the long-term practice burst out in the earthquake and played an important supporting role. All employees held a firm faith that the company could not be shut down and should be rebuilt relying on the changes on external and internal institutional environment and the foundation of industrial base, organizational structure and cultural basis. Influenced by the institutional environment, Zhang Zhiying, the ninth director of DTC, developed the corporate culture into "no fear of sacrifice, striving for success, perseverance, arduous pioneering, independent innovation and scaling new heights", according to the instructions from the Chinese government.

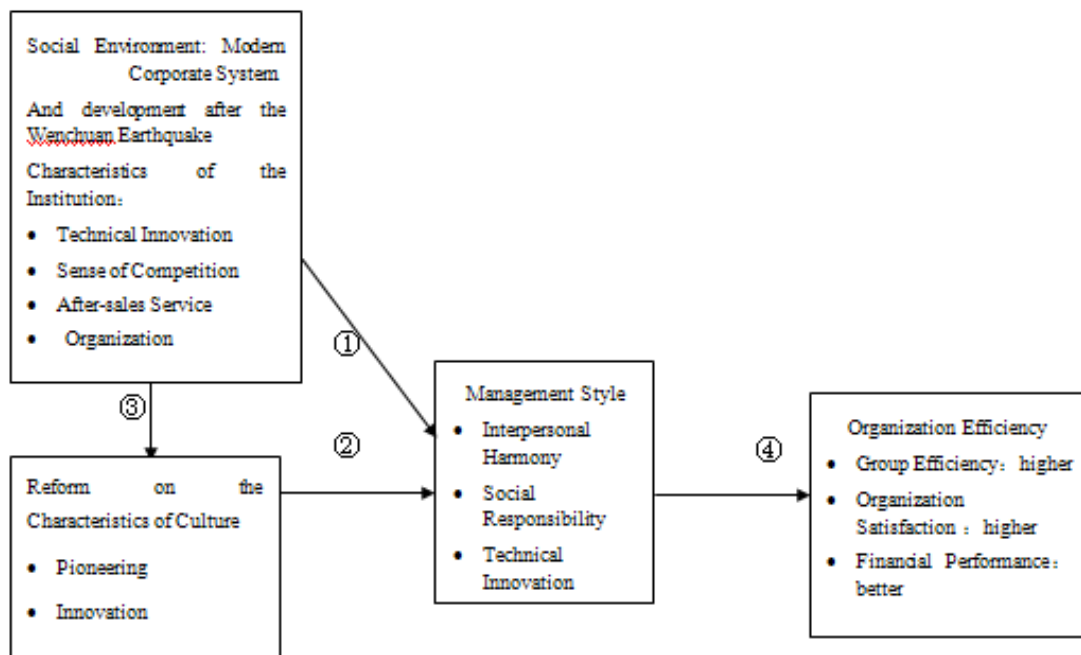
Research and development on wind power generation is a typical activity occurring at that stage, reflecting the corporate cultural aspect of "pioneering with arduous efforts and independent innovation". While competitors are still developing traditional industries DTC leaders realized that clean energy and new energy power generation would become the main trend of future market demand in consideration as a result of the dual pressure from energy and environment. Xu Zhengwei, the seventh director decided to carry out research on wind power generation in 2004 when the wind turbine market in China was still in the early incubation period. DTC signed a 1.5MW wind power generator technology introduction agreement with REPOWER in November 2004. After three years when China wind turbine market was developed, DTC produced 200 1.5MW wind turbine generators in 2007, 800 1.5MW wind turbine generators in 2008, 1,300 1.5MW wind turbine generators in 2009 and 1,600 1.5MW wind turbine generators in 2010, in which new energy power generation produced 50% of the output value. Thus, DTC pursued its transformation from traditional energy to clean energy and new energy. This product structure corresponds to the company's tenet of "green power to benefit human beings". The 1.5MW wind power generation product scored considerable market shares. When the 1.5MW wind turbine generator became its main model, Zhang Wenfeng, the tenth director of DTC was aware that the company must have products with independent intellectual property rights and independently develop wind turbine generators of 3MW and 5MW series, so as to enrich product series, take the lead in wind power generation market and strive to expand the market.

Earthquake relief and reconstruction are also typical events of corporate culture at this stage as it has been discussed in Chapter 4.4. After the earthquake DTC put forward a new objective of "Four First-class" construction and drafted the development planning of the "Twelfth Five-year Plan".. Due to changes on the strategy and environment of the company,

the future corporate culture shall adapt to the new institutional environment and be adjusted and improved accordingly. For example, during the interview, the incumbent General Manager Zhang Wenfeng said, “We are optimizing and inheriting the Spirit of DTC gradually. The first generation of leaders of the DTC Spirit emphasized the ‘interpersonal harmony’, nowadays in my opinion, we shall focus on ‘interpersonal harmony + strict management’ and ‘interpersonal harmony + institution construction’, and the interpersonal harmony shall be combined with the institution construction. Currently we are going to build DTC into an enterprise engaged in manufacture and service”. How the corporate culture reforms is the key research subject in Chapter V.

At the fourth stage, after the calculation and conversion of the scores of questionnaires, we obtain the first three characteristics of the management style, which are “Interpersonal Harmony”, 3.14, “Social Responsibility”, 3.11 and “Technical Innovation”, 3.06 respectively

**Figure 4-16 Analysis on the Synergistic Effect Mechanism of the Institutional Environment and Corporate culture at the Fourth Stage**



The typical characteristics of this stage were embodied in:

Proposition 3: the Chinese government enhanced the strength of the reform of SOEs after 2005, and established that modern property rights should become the main contents of the institutional reform. DTC adapted to the external environment of the institutional reform

of SOEs, and was divisionally transformed into the sole state-funded and listed joint-stock enterprise. At the same time it adapted to the requirements of strengthening the policies on resources and environment protection, and actively developed the new energy products and the products with renewable energy sources, such as wind power, solar energy and sea water desalination. The important technical and management innovation also required the culture innovation to reform. At the same time, the Wenchuan Earthquake in 2008 inflicted heavy loss on DTC after development and growth for 38 years. The leaders of DTC were faced with the great challenges of earthquake relief works and reconstruction of a new DTC in another place, and put forward the characteristics of the corporate culture of “no fear of sacrifice, striving for success, perseverance, arduous pioneering, independent innovation and scaling new heights”.

Proposition 1: The leaders of DTC organized the self-rescue rapidly after the earthquake and undertook the great historic responsibilities of saving employees’ lives and the state-owned properties. At the same time, the selfless help from the other social groups and organizations made DTC to resume reconstruction rapidly, which also promoted DTC’s attention to the social responsibility. Therefore “Social Responsibility” surpassed the “Technical Innovation” and became the secondly important factor concerned by the leaders in DTC.

Proposition 2: Although as the requirement of the institutional environment, the “Interpersonal Harmony” was not included in the first three factors, the culture inheritance made DTC to still regard the “Interpersonal Harmony” as the material factor for the management, which was the most important after the earthquake. The unity and fearless fighting and the powerful cohesion resulted helped DTC to overcome two difficulties: the earthquake and the financial crisis. Due to the enormous impact of the financial crisis and the nuclear radiation in Fukushima, the requirement of electric power market was weak, and the market competition was fiercer, so the company needed to develop more new products to adapt to the requirement of the market. The new factory buildings, devices, technology, framework and process also asked for higher requirement on management innovation.

Proposition 4: Although the corporate culture with harmonious interpersonal relationship was inherited continuously, the enormous pressure from the financial and earthquake crisis and under the need to adapt to the requirement of external competition, the leaders strengthened the inside standardized management. During the period when the diversified industries developed rapidly, the inside organizations and persons were rapidly redundant, causing the organizational efficiency and employee satisfaction to drop to a certain extent. At the same time, due to the earthquake and the impact of aggravation of market competition, the



financial performance of the corporate also meltdown: excluding the impact from the earthquake in 2008, the average profit ratio of the Company was 9.7%.

### 4.3.3 Conclusion of the Analysis Results

The characteristics of the institutional environment, management style and organizational culture as well as the organizational performance are collected in compliance with the Analysis Conclusion from Section 4.2, Section 4.3 and Section 4.5.2, as shown in Table 4-11 below.

**Table 4-11 Comparison of the Institutional Environment, Management Style, Corporate Culture and Corporate Performance at Each Stage**

Development Stages	Institutional Environment	Management Style	Characteristics of Culture at Several Stages	Organizational Performance
The First Stage	Interpersonal Harmony	Interpersonal Harmony	Interpersonal harmony	Group Efficiency: higher
	Technical Innovation	Technical Innovation	Dedication	Organization satisfaction: higher
	After-sales service	After-sales service	Fighting	Financial Performance: good
	Quality of Product	Social Responsibility		
	Social Responsibility	Quality of Product		
	Sense of Competition	Sense of Competition		
The Second Stage	Interpersonal Harmony	Interpersonal Harmony	Reform	Group Efficiency: high
	After-sales service	After-sales service	Innovation	Organization satisfaction
	Technical Innovation	Social Responsibility		Financial performance: good
	Quality of Product	Technical Innovation		
	Social Responsibility	Sense of Competition		
	Sense of Competition	Quality of Product		
The Third Stage	After-sales service	Interpersonal Harmony	Seeking for facts	Group Efficiency: high
	Technical Innovation	After-sales service	Developing	Organization satisfaction
	Interpersonal Harmony	Technical Innovation		Financial Performance: bad
	Quality of Product	Sense of Competition		
	Sense of Competition	Social Responsibility		
	Social Responsibility	Quality of Product		
The Fourth Stage	Technical Innovation	Interpersonal Harmony	Pioneering	Group Efficiency: higher
	Sense of Competition	Social Responsibility	Innovation	Organization satisfaction: higher
	After-sales service	Technical Innovation		Financial performance: better
	Quality of Product	After-sales service		

	Social Responsibility	Sense of Competition		
	Interpersonal Harmony	Quality of Product		

It can be found from Table 4-11 that:

Proposition 1: The institutional environment has had an important influence on the characteristics of DTC's management. For example, when entering the second stage, the reform of market economy and the aggregation of the competition from the outside made the after-sales service an important content for the management of the company; when entering the third stage, the pressure for survival forced a further enhancement of the sense and abilities of market competition. However the institutional environment is not enough to explain all the characteristics of the management system of the corporation. More importantly, one permanent feature of DTC is "interpersonal harmony", which has been the subject the leaders have paid more attention to since DTC was founded; this has not changed as the institutional environment changed.

Proposition 2: Because of the special environment, the culture of the company has a powerful cohesion. Since DTC was founded, the internal selection of its leaders made the leadership inherit the existing corporate culture. The good inheritance of corporate culture is the reason to explain the above importance of interpersonal harmony, which is also the precious fortune left to DTC's employees by the entrepreneurs and the leaders who have successively served.

Proposition 3: The corporate culture has many historical characteristics, such as the fighting spirit during the "Third Frontline", the reform spirit during the period of market economy, the developing spirit under the survival environment and the pioneering spirit after the earthquake. All are the results affected by the external environment when the organizations are in an opening system, and the corporate culture is also the product of the continuous adaptation of the company to the external environment.

Proposition 4: The management style influences the dominant performance in terms of the finance of the corporation as well as the recessive performance in terms of morale. For example, at the first stage, the first director of DTC led the employees to research and develop successfully the 300MW steam turbine, thus opening the gate of the market of the steam turbine with large capacity, not only providing evident financial performance, but also helping the corporation to make an important progress for developing and, at the same time, greatly encouraging the morale of the employees, pushing group efficiency and organization satisfaction to an unprecedented high. One critical problem which DTC would confront in the

future is that the enhancement of the sense of competition will conflict with the interpersonal harmony; how to handle this may be an important challenge for the future leaders.

Proposition 5: Lower organizational performance and morale may be adjusted with culture and management. For example, at the first stage, facing the threat of outflow of talents, the leaders of DTC set up the perspective of “Creating conditions to live as in the city”, and changed the problem of “Talents flying to the Southeast”; at the second stage, the corporate confronted the survival pressure of dealing with market conditions, and carried out the management strategy “be an itinerant merchant and involve in several trades, create a well-recognized brand and compete to be the best”, which helped the corporate overcome the difficulties. The diversification strategy at the third stage and the pioneering spirit at the fourth stage were strategies on culture and management reform for solving the problems of organizational performance.



## **Chapter 5: Prospects of Dongfang Turbine Co., Ltd Corporate culture Change in the New Organizational Environment**

### **5.1 The Wenchuan Earthquake: Challenges to the Corporate Culture of Dongfang Turbine Co., Ltd**

#### **5.1.1 Wenchuan Earthquake**

At 2:28 p.m., May 12th, 2008, an 8.0-magnitude earthquake hit Wenchuan, Sichuan. The Great Earthquake caused by the fracture of the central fault zone of Longmen Mountain transferred its tremendous energy quickly to Dongfang Turbine Co., Ltd only a mountain away with the straight-line distance of 29 km from Wenchuan which is also located in Longmen Mountain. The catastrophic earthquake made DTC suffer enormously with buildings collapsing and employees injured or dead. The large area of DTC was in a state of devastation and in disorder. DTC, the so-called “garden like factory” after 40 years’ construction and development, crumbled to dust after the earthquake.

According to statistics, in this earthquake, more than 300 employees and family members in DTC died, and more than 1000 were injured, 200 of whom got severely injured. More than 5100 houses of DTC were damaged, and more than one million square meters of factory buildings collapsed and got damaged, including many factory buildings such as the Blade Subsidiary Plant, the Casting Company, Welding Subsidiary Plant, Equipment Technology Company and Equipment Material Department as well as DTC’s residential quarters which were nearly razed to the ground. In addition over 2000 sets of production equipment were damaged, which led to a direct loss of 2.7 billion Yuan. DTC became the hardest-hit enterprise in Wenchuan Earthquake in China, and had to face major survival crisis.

#### **5.1.2 Countermeasures of the Enterprise**

After the earthquake, under the instructions of the leaders of the enterprise, DTC took immediate calm and sober actions, made emergency responses, carried out earthquake relief works, resumed production and started reconstruction, making DTC resurge from the verge of dying. DTC finally realized its renaissance. The countermeasures are mainly embodied in the following five aspects:

### **5.1.2.1 Reporting the Situation of Disaster**

Although the leaders had never suffered such a serious disaster before, the emergency drilling mechanisms that were practiced by DTC played an important role. Seeing the severe losses and the completely interrupted communication caused by the earthquake and realizing it was difficult to carry out relief works only depending on their own efforts, Zhang Zhiying, the General Manager had an idea that the information of the disaster must be reported to the government at the earliest time, so he sent Yang Yong, the Vice Director of Organization Department of DTC to report the situation of disaster to Mianzhu Municipal Government and Deyang Municipal Party Committee, and sent Xu Huaijun, the Section Chief of Armed Forces Department to ask for rescue from the Military Subarea in Deyang. On his way to Deyang Municipal Government, Yang Yong reported the situation to DTC's parent company-Dongfang Electric Corporation and the Representative Office in Beijing within half an hour. Knowing the situation of disaster, the leaders of Dongfang Electric Corporation went to Hanwang, the area hit by the earthquake to command relief works. The Representative Office in Beijing of DTC reported the situation of disaster to Sun Changji, the former Deputy Minister of Machinery Industry Ministry of China and also the former leader of DTC in Beijing. Then Sun Changji reported it to the State-owned Assets Supervision and Administration Commission (SASAC) of the State Council of PRC. After telling the State Council about the information of disaster, SASAC designated the nearest subordinate SOE to go to DTC for help. Due to fast dissemination of information, Mianyang Municipal Government, Deyang Municipal Government, Sichuan Provincial Government and Central Government knew the information that DTC was hit by the earthquake severely within two hours after the earthquake, gaining precious time and resources for external rescue. After knowing the situation of disaster, Wen Jiabao, the Premier of PRC went to the hardest-hit area personally on the second day after the earthquake and commanded relief works, mobilizing several rescue teams from Chinese Government to assist with DTC's earthquake relief works.

### **5.1.2.2 Earthquake Relief Works**

Within 20 minutes after the earthquake, DTC's leaders gathered all the middle-level cadres who were evacuated from the workshops and offices on the lawn in front of the office buildings. Zhang Zhiying, the General Manager declared to activate the Emergency Plan for Earthquake Prevention and Disaster Relief, and set up the Earthquake Relief Headquarter and Search & Rescue Team, Medical Aid Team, Personnel Transfer Team and Material Support Team. The Headquarter was set on the lawn, and DTC's General Manager acted as the

director of the Headquarter, which members included the Deputy General Managers. The Headquarter was in charge of the command and coordination of earthquake relief works, and assigned work to the members of the Headquarter. The director of each subsidiary plant and department held the post of the leader of the Search & Rescue Team, and organized the members by themselves and each team took charge of a different area, saving the buried and wounded colleagues working in the same department. Learning that the four-storey teaching building of DTC Middle School subordinate to Mianzhu Municipal Government and close to DTC had collapsed, and that more than 290 teachers and students were buried, driven by social responsibility and conscience, Zhang Zhiying decided to ask Xiao Min, the Deputy General Manager, to lead the only crane of DTC and the employee rescue team to go to DTC Middle School to save the students.

Since the communication was interrupted, the Headquarter organized an information squad, collecting and summarizing the information about disaster. Due to the shortage of office supplies, the Headquarter even wrote the List of Rescue Tasks on the cigarette box against the engine cover, and sent them to each rescue team for implementation. This List gave people more confidence and enhanced the cohesion, which made the on-site rescue to be well organized and more effective. At the most dangerous, worried and helpless moment, it was a list that could save lives. Within half an hour after the earthquake, DTC organized an employee rescue team composed of more than 2,000 people, and successively saved hundreds of people, and later the team had more people to join in. With the help of the Chinese government and international organizations, making good use of 72 hours after the earthquake regarded as the “Prime Time” for rescuing the survivors, the rescue team members saved successively 1,000 survivors from ruins and sent more than 1,400 wounded persons to the hospitals in Mianzhu, Deyang, Chengdu and to those outside Sichuan Province for medical treatment, saving lives of many people.

### **5.1.2.3 Resettlement of Employees**

After the earthquake, many houses of DTC’s employees had collapsed, most of which became dangerous buildings, and employees lost their homes. With the idea of “people first”, transferring employees into safe places was the primary decision made by DTC’s leaders according to the dangerous conditions of continuous aftershocks in Hanwang Town. Firstly, before 3:00 am on May 12th, the Headquarter allocated all vehicles in DTC to transport more than 8,000 persons including staff and their family members as well as the residents (including the aged, children and women) in Hanwang Town who survived the earthquake, to

the safe area in DTC's subsidiary plant in Deyang which had suffered less from the earthquake, and settled them to live in borrowed buildings and in a great number of tents set up temporarily, giving the staff a place for living, and making them realize the enterprise still ran in good order, which stabilized the staff's frightened mood in shock after the earthquake.

Then DTC set up six comparatively stable settlement camps, and organized eight working teams composed of more than 50 middle-level cadres and more than 100 top administrative personnel as administrative persons for the settlement camps, responsible for the material supply, life service and personnel management. Even if 11,000 people had to be resettled at the peak time, it was still in good order. Within one month, more than 3,700 sets of prefabricated houses for transition resettlement of two years were put up. Five temporary residential quarters called "Caring Homes" were set up for transition resettlement of more than 1,300 affected staff families. Within one and a half year after the earthquake, in 2009, DTC built more than 2,800 sets of permanent houses for employees, and will build 3,200 sets of permanent houses in 2012, which will achieve the goal of permanent resettlement for all employees, give the employees new homes, making people live and work in peace and contentment. Secondly, DTC's leaders sent the wounded persons rescued from the earthquake to the best hospitals in Deyang, Chengdu and other places in China, trying the best to save lives and reduce personal injury. The leaders also headed the teams to express sympathy to the wounded employees in the hospitals and console their family members, giving great spiritual strength. According to the actual situation that the residences of many employees had collapsed and their belonging had been damaged during the earthquake, DTC organized several moving teams to go to the employees' homes and help them to move minimizing losses. Later DTC provided necessary articles for daily use to the employees uniformly, issuing living expenses to the employees for the month hit by the earthquake and insisted on paying wages to the employees every month although there was no work. Within two years after the earthquake, DTC also issued house allowances and living allowances to the employees, and donated support to the needy ones, which guaranteed employees' lives. Finally, considering that many employees had lost their family members, were frightened and suffered psychological trauma, DTC invited several batches of psychologists to help employees to calm down their moods, get out of the psychological shadows and face a new life healthily. The above measures made the employees feel the care of the enterprise with support of houses and living conditions, which further intensifies their feeling of dependence, sense of belonging and identity to the enterprise.



#### **5.1.2.4 Resumption of the Operation**

It was unexpected that two days after the earthquake, employees in DTC participated in the bid meetings as usual. On May 15th, 2008, when Huang Zheng, the Sales Manager of Wind Power Division of DTC came to Beijing to attend the Project Bid Meeting held by Guodian Longyuan Electrical Co., Ltd, all the people were surprised. They thought DTC would not come for bidding, and Guodian Longyuan Electrical Co., Ltd had already crossed out DTC from the bidding list. The presence of Huang Zheng made the people astonished. They asked him many questions, such as “Can you deliver the goods on time?”, “Will the wind power project start to work? And when?” Huang Zheng answered affirmatively, “Although DTC’s Base in Hanwang Town was hit severely, our workshops and wind power production lines in Deyang did not suffer major loss, and can resume production very soon!” His answer set Guodian Longyuan’s mind at ease, and also caused a deep admiration among the other competitors who attended the meeting. Finally DTC won “the first bidding after the earthquake”, the order for 33 set of wind turbines with the price of more than 0.3 billion Yuan RMB as it had wished.

In the following days, DTC actively paid visits to more than 100 old customers and sent them the information that DTC had not been completely destroyed by the earthquake, and the contract could be fulfilled without delay. Good news came one by one: on the seventh day after the earthquake, DTC signed a wind power contract with the price of 1.244 billion Yuan RMB with Wind Power Investment Co., Ltd of China Energy Conservation Investment Corporation at one time; on the tenth day after the earthquake, it signed a contract with DFPS Company in India for a set of industrial turbine of 50,000KW; on the twelfth day after the earthquake, it signed a contract of 1.365 billion Yuan RMB with China Huaneng Group for fossil power and wind power units. On July 7th, 2008, Shandong Electric Power Construction Co., Ltd. signed a supply contract with DTC for 6 sets of super-critical coal fired units with 660,000 KW to export to India, which became the first major contract for the coal fired units exported from China. Within one year or more after the quake, DTC had received new contracts of more than RMB ¥ 20 billion Yuan, in which the orders of more than RMB ¥ 1 billion Yuan came from other countries. These orders expressed the trust and expectation from all social circles, and supported DTC to resume production immediately.

In order to reduce the loss and resume the production at once, more than 1,000 sets of equipment and important materials of 3 billion Yuan RMB were moved out from the affected areas within one month after the quake. On May 17th, the Wind Power Division of DTC in

Deyang Base resumed production and started the manufacture for wind turbines, delivering the signal of resuming production to the external world. On May 24th, by renting factory buildings and devices from partners in Deyang or close to Deyang, DTC allocated most of the employees to work in more than 100 factory buildings, which not only arrange their work, but also delivered the unbreakable confidence in full resumption of production to the customers. To enhance production capabilities, the factory buildings in Hanwang Town which were not seriously damaged were reinforced, the devices were fixed immediately, and the infrastructure, such as water, electricity, gas and communication networks were resumed, and finally DTC resumed production in the quake ruins in Hanwang Town on June, 6th, and the first lot of eight industrial turbines were delivered from Hanwang Town on June 20th. Under the dangerous conditions due to continuous aftershocks, DTC set up quakeproof tents and articles for living in the workshops. If there was an aftershock, the employees could run into the quakeproof tents. All employees that had no work at night should return to the safe areas in Deyang to live.

During the period of production resumption in Hanwang Town, the employees overcame the psychological fear caused by the aftershocks, and insisted on working in the affected areas, reflecting high levels of cohesion and dedication spirit. Such an enterprise spirit made DTC achieve an output value of RMB ¥ 10.8 billion Yuan with the production of 22 million KW in 2008, creating the miracle of production and operation after the quake; in 2009, DTC achieved the output value of RMB16.7 billion Yuan with the production of 27 million KW; in 2010, DTC achieved the output value of RMB19.2 billion Yuan with the production of 32 million KW. In 2011, DTC is expected to achieve an output value of RMB 21 billion Yuan with the production of 40 million KW. DTC shows its good situation of leaping development in recent 3 years.

#### **5.1.2.5 Scientific Reconstruction**

DTC leaders had been thinking about the reconstruction in a different area while carrying out the earthquake relief works. On May 27th, 2008, DTC held a discussion meeting about the site selection for a new production base of DTC. After deep analysis and investigation, on 2nd, 6th, 12th of June, DTC decided to select Deyang as the site for its new base. On August 29th, 2008, the Post-quake Reconstruction Feasibility Research and Construction Plan of DTC passed the review of the Chinese Government. The first workshop started to be built on August 1st, 2008. On May 12th, 2010, a new DTC with the first-class equipment, the most advanced technologies, first-class management and the best quality was completely

constructed, with a floor area of more than 2600 Mu (about 433.3 acres), an investment of 5 billion Yuan RMB and the assets of 40 billion Yuan RMB. DTC's reconstruction in another place was not a simple duplication, but was in accordance with the basic requirements of "More advanced, safer and more sustainable development" and the "First-class management, most advanced technologies, first-class equipment and best quality", and stepped toward the world-class enterprise with "New structure, new system and new level".

With superior consciousness, worldwide foresight and strategic thinking, DTC will handle well the six kinds of relationships: "Scale and level", "Hardware and software", "Manufacture and research", "Conventional capabilities and weak links", "Limited development and sustainable development" as well as "Leading position in China and leading position in the world". The site selection demonstration and planning for the new factory were performed with overall consideration and scientific planning in terms of advantage, safety, economy, sustainability, ensuring the safety and reliability of the natural environment, including earthquake resistance and flood control, convenient and favourable living conditions, such as transportation and municipal facilities, and in accordance with the objective requirements of the economy and social development, such as environment protection and ecological civilization. The planning highlighted the need of industrial structure adjustment and the improvement of core competition capacities for the enterprise, and adhered to the optimized process flow and the policy of energy saving and emission reduction, eliminating out-dated technologies and forming the structure of manufacturing centre with components of products as the units, focused on the construction of testing and developing capacities and greatly improving the testing and developing capabilities and core manufacture capabilities of the new energy products, such as nuclear power, wind power and gas turbine power generating. During the construction of the new base, a batch of key process devices was purchased, and the further integration of CAD/ CAE/ CAPP/ CAM/ ERP/ PDM was realized by means of the structured comprehensive wiring system. The layout of the new base took full consideration of environmental protection and adopted 110 KV lines and heat treatment furnace with higher efficiency and lower consumption. Water-based cutting liquid was adopted during the metal machining and the possibility of being recycled after machining. The dust, harmful gases and effluents were discharged after centralized processing, meeting the standard requirements, which solidified DTC's leading position in the power equipment manufacturing industry.

### **5.1.3 Verification of DTC's Corporate culture**

On February 12th, 2009, Li Changchun, Member of the Standing Committee of the Political Bureau of the Central Committee of the CPC visited DTC and said that “DTC Spirit” is a spirit epitomized in the fact that DTC’s staff sublimated the national spirit of the Chinese nation during the earthquake relief works. DTC Spirit is embodied in and burst under the impact of the serious natural disaster and financial crisis. It is a spirit of “Fearing no sacrifice, having the courage to attain the goal through dauntless and persistent efforts, hard work, independent innovation and continuous improvement”. “DTC Spirit” is manifested in the disaster and forged by the history; it is the inheritance and sublimation of many other great spirits, such as “Daqing Spirit”, “Two-bomb and One-satellite Spirit”, “Manned Space Flight Spirit” and “Qinghai-Tibet Railway Spirit” in the specific background of the new period of China’s Reform and Opening-up and earthquake relief.

The “DTC Spirit” not only has the glorious tradition of the Chinese working class with passionate national sentiment, the sense of social responsibility and that of mission and hard working, but also has the strong and distinct characteristics of the time, which is the common spiritual realm owned by the Central Enterprises at the new age. Therefore, the Chinese Government called on the whole nation to learn from “DTC Spirit”, which has become the benchmark and outstanding representative of the state-owned companies, and became the object of study of experts and scholars.

Actually, DTC confronted two crises in 2008: the earthquake and the financial crisis. DTC overcame these two crises, during which the corporate culture that had been formed in the enterprise on a long-term basis played an important role, proving that this corporate culture is effective and excellent. Why could DTC overcome the difficulties and realize the second great development? The reason lies in the following key factors:

#### **5.1.3.1 Reasonable Strategic Layout**

In DTC’s strategic layout, the Headquarter and the Conventional Turbine Workshops were set up in Hanwang Town; the Research Centre, Sales Centre and Wind Power Centre and the heavy-duty workshops for gas turbine, nuclear power and steam turbine were built in Deyang; the Semiconductor Material Factory of DTC was built in Emei City, Sichuan Province; the Wind Power Blade Co., Ltd, Wind Power Technology Co., Ltd and the Seawater Desalination Engineering Co., Ltd were built in Tianjin; the joint venture company of heavy-duty gas turbine company was built in Guangzhou.

Why DTC made this arrangement? The first reason was to retain the talented people. After 1978, along with the Reform and Opening up of economy in China, the advantages of location and salary in the companies of coastal and developed areas emerged. Due to the restriction of geographic environment and salary level, more than 500 employees left DTC and went to work in the coastal the cities. Chen Kuanjin, the third Director of Dongfang Steam Turbine Works (hereinafter referred to as DSTW, the predecessor of DTC) realized the challenges from the external competitors, and decided to set up the Deyang Base Preparatory Office in 1986, dispatching designers and sales personnel from Hanwang Town to Deyang City so as to stabilize the technical force, which received obvious results. The second reason is for the development of DTC's heavy industries. With the development of turbine technology, DTF realized that large capacity, high parameter and heavy industrialization would be the development direction of products in the future. As the load bearing of Hanwang road and the height of bridges restricted the development of enterprise, the fourth director of DTC, Sun Changji decided to set up Deyang Heavy-duty Equipment Subsidiary Plant to develop heavy-duty gas turbines, turbines for nuclear power and coal fired turbine of 1000MW. The third reason was to get closer to the users. Wind power is the resource-based product, which shall be closer to the wind-rich areas mainly distributed in Northeast, Northwest, North of China and the coastal areas. In order to get closer to the users, resolve the problem of road transportation and lower costs, DTC's leaders began to decide to establish the supporting companies for wind power in Tianjin, Jiuquan, Jilin and Inner Mongolia to promote the development of an industrial chain of wind power.

Based on the reasonable and strategic layout and the impetus of the leaders, although the workshops of DTC in Hanwang were seriously damaged, the research centre and technical centre, which represented the core forces of DTC, remained undiminished. At the same time, DTC moved to Deyang, and then the Deyang branch became the headquarters of DTC, fully undertaking the functions of head office. DTC's decentralized arrangement effectively avoids overall risks; depending on its own functions, this enterprise can resume production and overcome difficulties.

### **5.1.3.2 Complete Organization Structure**

After the earthquake, the leading group of DTC became a member of the temporary headquarters and held on at the epicentre of the disaster in Hanwang, where the decision-makers and the spiritual support of the enterprise were located. During the disaster relief period, in spite of the fact that many workshops were damaged, the organizational

structure remained unchanged, and the directors continued to fulfil their responsibilities. If someone died, new leaders would soon take their place.

During the process of resettlement, several temporary resettlement sites were established and trans-department management team was set up. During resumption of production, taking the workshops as units and the working teams as sub-units, DTC continuously organized production in the factory buildings rent temporarily and the workshops provided by the partners. During the reconstruction, DTC established the Reconstruction Headquarters, and dispatched the personnel covering the technical, management and engineering departments to organize project teams for planning and implementing the reconstruction project. During this period, each functional department kept on implementing all their management duties and formulating a great number of temporary emergency management measures. In the course of reconstruction, DTC's leaders were classified into two groups: one was responsible for conducting the earthquake relief works and all the leaders of this group stayed in Hanwang all along and did their own jobs. Zhang Zhiying, the General Manager, was in overall command. while the other leaders conducted the earthquake relief works at the forefront. Before the task of saving people was completed, all members would stay in Hanwang, and nobody went home. Another group was responsible for the resettlement of employees. Zhang Wenfeng, the Executive Deputy General Manager of DTC, was in charge of this group. All the leaders ate and slept in the tents, instructing the staffs and coordinating the resettlement for 24 hours a day, receiving the external emergency supplies and transporting relief materials to Hanwang promptly, which made the morale hold steady on the home front. Most of the managers of DTC carried out the relief works in Hanwang, and few of them coordinated the resettlement in Deyang.

All the leaders remained at the most dangerous posts, and stayed at the most difficult places together with the workers. The leaders set a good example in times of danger, their great personalities aroused the powerful cohesion of this enterprise, thus ensured the normal operation of DTC and the solidarity of the staff. Actually, most of the organizational structure and management mechanisms had been created and established by the former leaders. For example, in March 1984, affected by the boosting measures for the enterprise reform system of the Chinese Government, the third director of DTC vigorously implemented the organizational reform for enterprise and management innovation, updating the workshops into subsidiary plants, and the functional sections/offices into functional departments, which realized the devolution of powers and responsibilities and decentralization of authority, and

motivated the management enthusiasm of the subordinate departments. Although the names of some units have changed, most of them still remain until now.

The reform of organizational structure embodied the modern enterprise management idea of devolution of powers, authorization and unification of rights, responsibilities and benefits. DTC began to carry out the economic responsibility contract system in 1983, and converted the internal management mechanism. In 1984, the internal corporate bank was opened for business, realizing tax planning and modern financial management. Later, Sun Changji, the fourth director, and He Muyun, the fifth director, successively changed the wage system of technical grading into the wage system of dynamic structure, reforming employees' distribution system on wage. DTC set up the Charter of Factory as Legal Person in 1989, defining the rights, responsibilities and benefits of the legal person. In 1992, the Review System of Professional and Technical Posts was carried out, and the Profession Incentive Mechanism for talents was established. DTC reformed the welfare-oriented public housing distribution system and established the welfare marketization mechanism in 1992. Meanwhile, DTC leaders continuously inherited and developed the organizational structure and management system for the enterprise. The efficient organizational structure and management system with unified rights, responsibilities and benefits formed for a long time, which stood the impact and test of the earthquake and helped DTC to overcome the difficulties, had become an important constituent of the core competitiveness of the enterprise.

### **5.1.3.3 Guidance of DTC Spirit**

After the Earthquake, the workers were frightened, and also very scared. The central plant of DTC in Hanwang had been built for more than 40 years, and many workers had devoted their youth to it. Not only the plant they had been working in for such a long time, but also their family members, relatives and friends were trapped at the epicentre of the earthquake in Hanwang. The emotion, family love and friendship accumulated for more than 40 years impelled a majority of workers to gather together in the disaster area and participate in saving lives and salvaging materials. Depending on their own strength to support earthquake relief efforts and rescue themselves, they successfully minimized DTC's losses. Since DTC was a Third Frontline Enterprise, many workers' parents, children and spouses worked in the same company. The special family-based workforce structure made workers realize that if the earthquake resulted in business failures of DTC, their own family would also break down. If DTC could not resume production, the lives of staff would get into

trouble. The close dependence relationship and strong crisis awareness made workers unite tightly to overcome the difficulties and resume the production and business operation very quickly. On the second day after the earthquake, DTC planned the reconstruction at different places. This goal gave employees new hope and confidence. With hope and confidence, DTC had the strength for hard working and for starting a new undertaking, inspiring the staff to complete the planned three-year reconstruction tasks in only two years.

The corporate culture bursting in the disaster was the corporate culture formed by DTC over more than 40 years, with a deep penetration into the staff awareness, determining and influencing the behaviours of the staffs. This group-based corporate culture encouraged workers to choose to be fearless. The workers in Deyang branch who had not been affected by the earthquake regarded saving lives as their most important responsibility after making the resettlement for 8,000 people rescued from Hanwang and knowing that many colleagues were still buried in the ruins. The Second Subsidiary Plant of Main Machine Division in Deyang allocated four big trucks for urgent need, and organized more than 200 people taking rescue tools to save lives in Hanwang in the rain. They played a leading role at that time, which inspired more employees to go to the dangerous areas in Hanwang from the safe areas in Deyang for rescue thus giving great confidence to the people in the affected zones to defeat the disaster.

DTC Middle School suffered a disastrous loss in the earthquake. On his way going to the disaster area, Xiao Min, the Deputy General Manager saw a crane driving to the plant. Xiao Min asked Chen Yuanzhong, the driver of DTC, to change his direction and go to the Middle School of DTC for rescuing the students. Later it was known that Chen Yuanzhong's wife was buried in the plant, and Chen was going to drive the crane to save his wife, but he finally drove the crane to the Middle School to save the students. Unfortunately, his wife was dead due to lack of timely treatment. So many outstanding teams and individuals and such deeds, placing collective benefits ahead of individual interests, did happen in the disaster areas. Such behaviour greatly aroused the cohesion of DTC's organizational culture and sublimated DTC Spirit.

#### **5.1.3.4 Farsighted Industrial Adjustment**

As a Third Frontline Enterprise in China, DTC was in a less favoured place on the aspects of geographic and congenital conditions. Nevertheless, DTC has a keen perception and farsighted judgment with rich experiences in market competition. In respect of coal-fired power generation, in 1986 when a 300 MW turbine was put into operation, the leaders started



to pay attention to more advanced units. Sun Changji, the fifth director of DTC signed a cooperation contract of 600MW with Hitachi, Japan on May of 1991. Six years later, the first set of 600MW turbine was put into service and became the main model of turbines produced by the company for about 15 years. In 1999, three years after the production of a 600MW unit, the company started to develop the more advanced 1000MW unit. At present, DTC provides five sets of 1000MW units for customers annually. As to the wind power, when nobody thought there was any future in the wind power market of China in 2004, the seventh Director of DFSTW (DTC), Xu Zhengwei decided to develop equipment for wind power and signed the Technical Import Contract for 1.5 MW Wind Power Generator Sets with REPOWER of Germany. Three years later, when the Chinese wind power market began to get off the ground, DTC had already achieved outstanding achievements in wind power products. Soon afterwards, Zhang Zhiying, the ninth leader, and Zhang Wenfeng, the tenth leader, made a decision to set up subsidiary plants in Tianjin, Jiuquan and Jinlin, since they were closer to the wind field and better for the rapid development of wind power products. Six years later, DTC's production of wind power products reached 1600 sets, maximizing the profits at the blooming time of wind power industry. In respect of gas turbine, the commissioning of the first product was successful on May 2005. Six years later, the company could produce five sets of gas turbines per year and 14 sets in total have been produced and exported to Russia. In what concerns turbines for nuclear power, the first product was manufactured in 1999. The company could produce six sets of nuclear turbines per year after 12 years. During 5 years from 2006 to 2010, DTC got orders for 23 sets of nuclear turbines, with the contract value of RMB14.7 billion Yuan, taking the leading position in the industry. Furthermore, DTC also made look-ahead adjustments in other respects.

During the development for so many years, on account of the strong innovation spirit and keen perceptions of DTC's leaders, once they realized the external institutional environment was about to change and figured out the future development direction of products, they would make appropriate adjustments for product structure and technical reserve in advance and carried out internal system reforms and adjustment of related corporate culture, making DTC's products and industries meet the requirements of future development. This is why DTC can take the development opportunities of the market. The far-sightedly industrial adjustment helped DTC to overcome the difficulties in the earthquake, making DTC develop against the market trend in the economic depression worldwide. For example, DTC decided to start construction for general assembly workshops of wind turbines in Deyang in

2005, laying the firm foundation for the prophase cultivation of the wind power market. Since those workshops were built in Deyang and not affected by the earthquake, after five days of the quake, the production for wind turbines was resumed, which demonstrated DTC's actual strength and confidence to the customers. On the basis of the output of 200 sets of wind power units in 2007, DTC produced 800 sets of wind power units in 2008. In 2009, the output reached 1,300 sets, and the output in 2010 was 1600 sets. The output value of wind power units accounted for more than 50% of DTC's gross output value. This not only helped the enterprise to resume production and operation, but also supported firmly the construction and development of DTC's new base.

#### **5.1.4 Challenges for DTC's Corporate Culture**

##### **1. Challenges to the corporate culture due to the Changes of Geographic Environment**

After the earthquake, DTC moved from the town where the staff had stayed for 42 years to the bustling city, which is more superior in both living and working conditions. The place to cultivate the organizational culture has changed, and the previously outstanding cultural traditions, such as hard working, diligence and frugality, may face new challenges.

##### **2. Challenges to the Organizational culture due to the Changes of Human Resources**

After the earthquake, with the increase of temporary labour, DTC's staff and temporary labour accounted for half of the total employment each. Certainly the constituency of personnel and the variety of policies of human resources also impact on DTC's organizational culture.

##### **3. Challenges to the Organizational culture due to Changes of Products and Strategies.**

The products, technological processes, technologies and devices have changed, and new development strategies have been formulated and implemented: how the organizational culture can follow up the change is also a problem that DTC has to resolve.

##### **4. Challenges to the Organizational culture due to Changes of Institutional Environment**

After the earthquake, the organizational structure, operation and management mode have been adjusted, and the enterprise system was reconstructed, which will influence the organizational culture of DTC.

## **5.2 Suggestions for Corporate Culture Development Based on Institutional Changes**

Wenchuan (Sichuan Province) earthquake discussed in Section 4.2 proves that DTC's organizational culture is excellent and also raises challenges it may face. This section will focus on major changes faced by DTC and offers suggestions, in accordance with analysis conclusions in Section 4.1, on how the current leaders of DTC may adjust the corporate culture based on the direction of institutional changes, so as to keep them at the same pace and promote the enterprise's sustainable development.

### **5.2.1 Environmental Changes Faced by DTC**

#### **5.2.1.1 External Environmental Changes**

##### **1. Changes in the drive mode of economic growth**

China's economy will continue to grow at a relatively high rate from 2011 to 2015, although it is hard for the extensive growth mode featuring high investment, consumption and pollution and low efficiency to last. The Chinese government requires enterprises to speed up the transformation of economic development from investment-driven mode to innovation-driven mode, from quantitative scale to quality and efficiency in terms of input factors and from middle and low end to middle and high end in terms of technical structure.

##### **2. Changes in institution reform focus of SOEs.**

Zhang Wenkui, Deputy Director of Enterprise Institute under Development Research Centre of the State Council of PRC, pointed out in relevant research (2011) that SOE reform would focus on the parent company of major SOE group from 2011 to 2015. For example the commercial company management system based on diversified shareholding structures shall be promoted in the parent company, except the State-owned parent company of some special industries and platform companies especially established as the holder of State-owned shares. Since the end of the 20th century, the reform system has been completed in most small and medium sized independent SOEs. At present, SOEs are mostly in the form of groups, i.e. one wholly State-owned parent company has several wholly owned or holding sub-companies and groups are usually big in scale. The future institutional reform of SOEs of China will focus on shareholding system reform of these parent companies, i.e. transforming their shareholding system into mixed ownership with diversified shareholding structures.

##### **3. Changes in the industrial environment of power generating equipment.**

China power industry will develop in a direction of clean energy, large scale and integration from 2011 to 2015. (a) Clean energy: Based on the proportion of emission reduction accounting for 40% and non-petrochemical energy accounting for 15%, China power industry will invest more in clean energies, such as hydropower, nuclear power, wind power and solar energy. Currently, clean energy accounts for about 25% of power in China and it is expected to go up to 30% in 2015 and 35% in 2020. (b) Large scale: As planned by the National Energy Administration, China will focus on “5+1” energy development mode from 2011 to 2015, i.e. establishing five comprehensive energy bases, including Shanxi, Ordos Basin, Southwest, Eastern Inner Mongolia and Xinjiang and building nuclear power stations in central-eastern China. South-western areas, including Sichuan, Yunnan and Tibet, will focus on hydropower; Central-eastern areas, including Liaoning, Shandong, Zhejiang, Jiangsu, Fujian, Guangdong, Hunan and Hubei, will focus on nuclear power; the three Norths (northwest China, north China and northeast China) will focus on 10,000 MW wind power bases; thermal power will be mainly developed in Ordos, Shanxi and Eastern Inner Mongolia in the form of power stations near coal-mines; gas power stations will be constructed in east China considering peak demands, gas resources and price factors. (c) Integration: Considering that wind power and photovoltaic (PV) energy are mostly in remote areas and their intermittence and fluctuation, the integration of wind, PV and energy accumulation and the integrated transmission of wind, PV and thermal power energy can effectively improve the overall economic efficiency of the power system.

#### **5.2.1.2 Internal Environmental Changes**

(1) Changes in industry and product structures. At present, DTC has basically formed the industrial structure focusing on fire coal, gas turbine, nuclear power and wind power, supplemented by industrial turbine, power station auxiliaries and spare parts, ship power device, nuclear control rod drive and new materials. Coal-fired turbine will be mainly developed in a direction of clean coal generation technology for lower emission and higher efficiency; nuclear turbine will be mainly developed in the direction of self-alliance efforts of the third generation nuclear power technology of pressurized water reactor; gas turbine will be mainly developed in the directions of design and test technology, material technology, thermal barrier coating technology and cooling technology. Meanwhile, great efforts will be put into the development of large land and offshore wind turbine units, wind farm efficiency forecast, key technology control, transmission consumption of wind power base, highly efficient photovoltaic and solar thermal power generation technology, coproduction and

utilization of biofuels and comprehensive utilization technology of renewable energy.

(2) Changes in enterprise's functional regions. DTC's strategic layout and function regions have been adjusted after Wenchuan earthquake. The strategic and manufacturing centre has been moved from Hanwang Town to Deyang City and the wind power industry has been developed along market regions and wind power generation and service centres were built in Tianjin, Gansu, Jilin and Inner Mongolia.

(3) Changes in enterprise's business environment. DTC's customer group has suffered two major changes: the focus has been shifted from state-invested users to both state-invested and private users (on an equal basis) and from China market to both China and overseas markets (on an equal basis). The enterprise accelerates its pace of internationalization and the impact of international politics, economy and exchange rates on the business are growing. Besides, more and more domestic competitors enter the field of wind power products; the enterprise has to compete with professional leading companies in new energy products; gas turbine products will face the challenges of Top 500; market competition is getting fiercer.

(4) Changes in the enterprise's human resources. With the development of the enterprise, the staff has grown from 7,000 to more than 12,000. The current human resources consist of contracted employees, dispatched personnel and outsourcing personnel. The enterprise has shifted from contracted employment to various employment modes and now temporary personnel and outsourcing personnel may be found working at all levels. Enterprise employees show a trend to be younger with an average age of below 35 and a better education level. Human resource policies also face the challenges brought by the shift from town to city and the shift from enterprise employee to city and social member. In recent years, employee salaries are fast increasing and the enterprise's advantages in HR perks are disappearing.

(5) Changes in enterprise's senior management. From the first Factory Director in 1979 to the seventh Factory Director in 2005, there were seven factory directors over the 26 years, with senior management being renewed every 3.71 years. From the eighth Factory Director of 2005 to the tenth Factory Director of 2010, there are three factory directors over the 5 years, with senior management being renewed every 1.67 years. Service term of the current senior management is 1 year. The frequent renewal of senior management impacts the fast development of corporate culture to some extent.

(6) Changes in enterprise's institution environment. Wenchuan earthquake ruined not only the factory equipment but also the 42-year-old management system. To survive from the earthquake, the enterprise designed a transitional and emergency management institution on

human resources and enterprise management from 2008 to 2010. In 2011, when all new workshops and equipment were put into service and after DTC resumed the operation, DTC revised all management institutions based on new environment. The institution system of DTC shifted from an extensive one to a fine one, from harmony to strictness and from function to project management, with more attention being put to performance management and institution implementation. These new institutional changes will surely impact the development of organizational culture.

**Table 5-1 Comparative Table for Changes of DTC in “2006-2010” and “2011-2015”**

NO.	Environment	Years of 2006-2010	Years of 2011-2015
1	Business environment	Focus on domestic market	Focus on both domestic and international markets
2	Product objects	Focus on thermal power	Develop various power generation modes, with new energy percentages growing
3	Technical innovation	Based on introduction	Innovation and introduction
4	Enterprise system	Factory	Stock company
5	Organization structure	Mainly based on linear function system	The combination of linear function system, department system, sub-company system and project system
6	Management mode	Extensive management	Lean management
7	After-sale service	Far away from users	Close to users
8	Location of headquarters	Small town	City

Source: *Outline of Development Plan (2006-2010)* and *Outline of Development Plan (2011-2015)* of DTC

## 5.2.2 Changes in DTC's Development Strategy

The current General Manager of DTC prepares the Outline of the Development Plan (2011-2015) based on the 2006-2010 development achievements and the 2011-2015 environmental characteristics. From Table5-2, it can be seen that the major changes of development strategies of DTC during 2011-2015 and 2006-2010 are as follows:

### 5.2.2.1 Enterprise Mission and Vision

In the 2011-2015 development strategy, DTC clearly states its mission as “developing the energy and power equipment industry of China”. Shifting from “power generation

equipment” to “energy and power equipment”, the connotation of the mission has been greatly expanded to the concept of diversified development. Meanwhile the enterprise vision is that of “becoming a provider of green energy and power equipment system”. Green energy is the reflection of the enterprise core purpose in its vision. The idea of “system provider” shows that the enterprise is not satisfied with the current manufacturing environment of energy and power equipment industrial chain and strives to expand upstream and downstream to develop the whole chain and to promote industrial chain resource control and core competitiveness.

### **5.2.2.2 Enterprise Orientation and Strategy**

In the 2011-2015 development strategy, DTC clearly states its orientation of “dedicating to major equipment related to national economic lifeline and national welfare and people’s livelihood and focusing on major power equipment”. This orientation concentrates the enterprise’s resources in core industries and large power equipment of China and reflects the competition strategy of “concentration”. Development strategy of the enterprise has been shifted from “building DTC into an enterprise group featuring strong foundation industry, development of diversified power resources, scientific management and prominent core competitiveness with good reputation abroad and leading status at home” to “building DTC into an energy and power equipment manufacturer and service provider featuring various power generation modes and prominent core business with leading status at home and abroad”. The enterprise development strategy shows the extension of the service industry chain and the international development orientation; enterprise development has been shifted from domestic market to international market, reflecting the enterprise strategy to enter world competition.

### **5.2.2.3 Enterprise Operation and Innovation**

In the 2011-2015 development strategy, DTC adheres to the combination of technical introduction and independent research and development and attaches great importance to innovation. The enterprise economic scale has grown by four times and labour productivity by one time. Investment on research and development is included in enterprise strategy for the first time, reflecting the innovation-oriented business mode in the future. DTC will strengthen its ability in strategic control, market response, risk prevention and decision execution, improve business management efficiency and shift from the development mode driven by external opportunity to a mode driven by internal management efficiency. Based on the core of ensuring service efficiency and quality, the enterprise will promote service

industrialization, improve service level and build a professional service team during 2011 to 2015, including a highly efficient service system, first-class service equipment, a professional service base and a strong service support system. The enterprise will implement international strategy, strengthen international market expansion and service in terms of thermal power, gas turbine, wind power and renovation, study demands of overseas users in different regions, prepare different marketing strategy and after-sales service management system for exported units, improve international reputation of DTC's products and realize the overall development of design, production, sale and service.

**Table 5-2 Comparison Table for Strategic plans of DTC in 2006-2010 and 2011-2015**

No.	strategic plan	Years of 2006-2010	Years of 2011-2015
1	Company mission	Not identified	To develop the energy and power equipment industry of China, integrate resources of energy and power equipment manufacturing industry and build up the enterprise into an energy and power equipment manufacturing giant with leading place at home and abroad.
2	Company vision	Not identified	To become a green energy and power equipment system provider with leading place at home and abroad.
3	Enterprise orientation	Not identified	A large international manufacturing and service company dedicated to major equipment concerning national economic lifeline and national welfare & people's livelihood, with large power equipment being the foundation industry.
4	Development strategy	Adhere to scientific sustainable development strategy; strive to build DTC into an enterprise group featuring strong foundation industry, diversified development, scientific management and prominent core competitiveness with good reputation abroad and leading status at home.	In compliance with the purpose of "benefiting people with green power", adhere to sustainable development strategy and "one-step-ahead development policy"; oriented to market demands and supplemented by capital operation, take great efforts to build up thermal power, nuclear power, gas power and wind power industries, expand new energies and build DTC into an energy and power equipment manufacturer and service provider featuring in various power generation modes and prominent core business with leading status at home and abroad.
5	Business mode	Not identified	Combine technical introduction and independent research and development and realize the overall development of design, production, sale and service.
6	Total industrial output value	RMB 5.5 billion (2010)	RMB 30 billion Yuan (2015)
7	Industrial added value	RMB 2.5 billion (2010)	RMB 3.8 billion Yuan (2015)
8	Business revenue	RMB 5.5 billion (2010)	RMB 28 billion Yuan (2015)
9	Total profits	RMB 450 million (2010)	RMB 1.05 billion Yuan (2015)



10	Total research & development investment	Not identified	RMB 1 billion Yuan (2015)
11	Overall labour productivity	RMB 250,000/person (2010)	RMB 480,000 Yuan /person (2015)
12	Production volume	15,000 MW (2010)	Above 25,000 MW (annual)

Sources: *Outline of Development Plan (2006-2010)* and *Outline of Development Plan (2011-2015) of DTC*

#### 5.2.2.4 Enterprise Industry and Products

DTC will strive to build up a strong industrial division of turbines and form a core profit supporting system and a large industrial division of wind power to promote economic growth. It will actively develop the turbine industrial division and form a third growth pole; lay a solid foundation for gas turbine development and take a leading place in technology; develop new energy industries such as energy accumulation, wind and PV energy accumulation and integration and new materials to form new driving forces; steadily expand engineering services, power block and intelligent power station industries, so as to extend to manufacturing and service fields; form the development layout of core industry, emerging industry and future industry, allocate relevant resources and attach importance to new energy in terms of industry and to innovation in terms of product. This is the future development direction of the enterprise.

#### 5.2.3 Recommendations for the Development of the Corporate Culture of DTC

As analysed and summarized in Section 4.1 and 4.2, the organizational culture will be affected by both institutional and leadership changes. Nowadays, the corporate environment, strategies and leadership have significantly changed. Therefore, neither the successful implementation of corporate strategies nor the sustainable development of the enterprise can come true unless the organizational culture is changed with the new environment to ensure the culture to be synchronized with institutional characteristics. The analyses of the conclusions from in-depth interviews with six plant directors (general managers) as well as the questionnaires filled up by managers and employees indicate that although the essence of the organizational culture of DTC needs to be inherited, the environmental changes impel the incumbent enterprise leaders to introduce the following new elements into the corporate culture for continuous development.

##### 5.2.3.1 “Openness” Element shall be Injected into the Corporate Culture of DTC

The Outline of Development Plan (2011-2015) sets the objective to become an

international leading company and formulates the global marketing strategy. For thermal power, vigorously expand international markets in India, Africa, Middle East and Vietnam, and ensure that annual overseas orders exceed 8,000 MW. For nuclear power, take an active part in overseas nuclear power projects of various nuclear power groups and endeavour to win 1 or 2 overseas nuclear power project orders from 2011 to 2015. For gas turbines, place stress on international market development, attach importance to establishment and improvement of the service mode, and strive to obtain contracts of long-term service. For wind power, energetically develop Southeast Asian, South American and other international markets in the global perspective; and zealously widen Southeast Asian, Middle Eastern, African, South American and other overseas markets for small turbines in the hope that annual orders will increase by over 30 sets. This is a sign that the enterprise has become an international giant in respect of strategy and marketing.

However with more industrial divisions and larger size, the enterprise becomes more rigid and bureaucratic and even lives with big-enterprise syndrome. Additionally with its strong viability shown during the Wenchuan Earthquake, the first-class hardware conditions created by the setup of the new base, the stronger comprehensive corporate strengths and the better corporate performance, the enterprise shows a disposition to arrogance and self-complacency. All of this masks problems and keeps the senior management further away from truth. Fewer and fewer problems are revealed, and revealed problems are solved more and more slowly. Therefore, to enable the enterprise to enhance its self-correcting ability a modest but open and all-inclusive mechanism is required.

When the enterprise was headquartered in Hanwang which was a small town with relatively isolated geographic location, human culture and information environment, the enterprise was scarcely bothered by the outside world or shaken by any hazardous information from the outside world, and employees were self-centered corporate men, which contributed to the creation of corporate cohesiveness and team culture. After it moved to Deyang, the enterprise has been in contact with open society, human culture and network information environment, and employees have become social beings. Consequently, the organizational culture has to face the challenges that employees are required to adapt themselves to urban life with open minds as urban residents and that they are also required to have a mechanism which can not only protect them against external adverse factors but also sustain the solidarity and firmness inherited from the organizational culture.

The incumbent enterprise leaders shall be deeply concerned about how to integrate

“openness” into the organizational culture according to the above-mentioned changes. After analysis of the data, we believe that the corporate institution and the organizational culture may be reformed as follows:

(1) Establish a system or mechanism to support the internationalization of the enterprise. In terms of product, the enterprise has developed the 600MW-level 60HZ turbine for the Middle East and has set the objectives to expand international markets for thermal power, gas turbine, wind power and industrial turbine, but it has not done enough studies on the product requirements for overseas markets. Enterprise leaders shall set up a specialized agency under the Product Design Department to follow up and analyse the product requirements for overseas target markets and to develop and reserve in advance more products that can meet the demands in international markets. For instance, foresee that the turbine will be of high capacity and parameters abroad, and develop the 1000MW-class 60HZ turbine in advance; optimize the economic efficiency of the 600MW unit to be exported and develop the new energy product suitable for overseas markets in accordance with the strict requirements of overseas markets for economic efficiency and environmental protection. In terms of structure, the enterprise has set up the International Cooperation Agency, but the organizational resource it put into the international market has accounted for less than one third while the export order has accounted for one third. Can the International Cooperation Agency be upgraded to the Overseas Business Department? Or set up the equivalent agencies in overseas target markets to gather technical or market information and to expand the international markets closed to users? In terms of international rules, the enterprise has many standard systems, but none of them is internationally accepted. Can it integrate or establish a set of product quality standards applicable to international markets? At present, CE Certification is a good choice. If the products can pass CE Certification, it means it will obtain the product passport to the European market. In terms of personnel, the enterprise has the personnel qualified for international marketing, but it is still in want of the personnel qualified for international technology, management and finance. The enterprise shall recruit and cultivate the international personnel for these fields. International rules and finance shall be added to internal employee trainings, and grass-roots employees may be expected to acquire basic language competence to make the whole enterprise culturally internationalized.

(2) Establish a mechanism to reveal and correct the internal problems of the enterprise. Enterprise leaders may further change the organization structure, simplify the organizational system of the branch plant, reduce the tiers between DTC and each teams and squad and

shorten the span of control to make the leader “closer” to the grass-roots problems in respect to organizational structure. Enterprise leaders shall strengthen the performance evaluation of the enterprise operation and shall set up a specialized agency to find out, gather and report to enterprise leaders major grass-roots problems on a regular basis. Enterprise leaders may advocate discussing problems instead of achievements at internal meetings and create a sound cultural atmosphere centered on being practical and realistic and on revealing and solving problems. Enterprise leaders should also improve the proposal mechanism for grass-root employees, pay more attention to employees’ proposals and to the adoption, implementation and evaluation of as well as reward for these proposals, set up the closed-loop management system, and cultivate the proposal culture for grass-root employees.

(3) Establish a mechanism to manage the personnel under open circumstances. Enterprise leaders shall not only establish a system to educate new employees about corporate history and practice at the time of their employment, but also educate old employees about organizational culture on a regular basis so that it can be widely accepted by the staff and can be passed from the old to the new employees. Enterprise leaders shall be good at cultivating and strengthening the corporate culture by the typical cases and the employees’ own experiences. Enterprise leaders shall research into the mechanism for social workers inside the enterprise, intensify the enterprise’s service for and relations with the society, and adapt themselves to employees’ change from a corporate man to a social man. Enterprise leaders shall analyse the management of public relations; keep an eye on the effects of new media on employees; study and establish a spokesman mechanism for corporate news; set up a network management platform under the Corporate Culture Department; issue corporate policies through the internet information platform; establish a mechanism to avoid the disturbance that external negative information brings to the enterprise; guide employees’ opinions on networks; and build up good social and online images for the enterprise.

### **5.2.3.2 “Service” Element shall be Injected into the Corporate Culture of DTC**

In the 1980s, DTC created the “Spirit of 24-hour Service” which meant that a person specially designated by the enterprise would arrive at the power plant within 24 hours after a product of the enterprise had been found with malfunction. This showed the deep concern for and swift response to clients’ needs, and it became the service strength against market competition. However with the development of the enterprise, the “Spirit of 24-hour Services” failed to be the enterprise’s strength in the service industry. Zhang Laiwu (2011) said that China spent its first thirty years in stimulating the rapid growth of enterprises with

investments and the later thirty years in making enterprises service-oriented. Therefore, the innovation can be made by the enterprise shifting its focus from marketing and production to service. The focus on production means the enterprise gives priority to the secondary industry, and that on service means the enterprise gives priority to the tertiary industry, namely the service industry. Service can be the driving force for scientific research in the upward perspective and can be the extension of the service for products and employees in the downward perspective. Since the enterprise has set the strategic orientation that it is expected to be a manufacturing-service-oriented international giant from 2011 to 2015, it shall incorporate the service in the corporate strategy, work out supporting structures and mechanisms, offer required resources, strengthen the cultural activities in such a service-oriented enterprise and promote its development with the aid of service and culture.

(1) Improve the institution and culture designed to serve users. DTC has already produced 250,000 MW turbine units and 4,450 wind turbine units with 81 wind fields, all of which require the service support from their manufacturer after their warranty periods. This is a huge service market. The Outline of the Development Plan (2011-2015) has also stated that it is necessary to set up an efficient service system, provide the enterprise with first-class service devices, construct a professional service base and establish a powerful service supporting system, but how to put them into practice still remains a problem. Although the enterprise has set up the Service Business Department, it places emphasis on preliminary installation and commissioning of these units with insufficient resources left for after-service. Enterprise leaders should create a file for each unit, work out a service scheme for the whole service life of each unit, and divide the service life into several phases, each of which is provided with a special service program that will be introduced to the user in advance if a phase ends, so as to form the streamline marketing and service for the whole service life of a product and to enlarge the size of the service industry of the enterprise. For wind power products which are intensive geographically, the enterprise may reconstruct the existing service centres according to the service mode of 4S automobile stores; and for thermal power, nuclear power, gas turbine and other products which are not provided with any service centre at a place close to their users, the enterprise may add some services for such products to a service centre for wind power products, or set up an user service centre at a place where units are intensive geographically and provide such centre with necessary spare parts to meet users' needs promptly and to consolidate and develop DTC's Spirit of 24-hour Service in respect to organizational structure. When designing a product, the enterprise may implant a smart

software module in it and set up a remote fault monitoring and diagnosis system to follow up its running state on a real-time basis and offer service supports to users. At present, the service personnel, who are from other internal posts, are inexperienced in serving customers, so the enterprise may prepare an unified service manual and strengthen the special trainings for the service personnel to upgrade the customer service.

(2) Improve the institution and culture designed to serve suppliers. The competitiveness of the industrial chain depends on the quality of the supply chain. DTC now has over 900 suppliers with different sizes and quality. Enterprise leaders shall plan the optimization of the supplier team and cultivate a supplier resource with high quality. Enterprise leaders shall treat the supplier management as an integral part of the management of industrial chain and value chain, and shall set up special departments responsible for analysing and formulating the supplier strategy for the enterprise in terms of value chain and in the technical perspective and for defining the parts and processes which shall be self-fabricated and those which shall be contracted out. Now the product outsourcing is decentralized, so enterprise leaders shall research into the centralized management of outsourcing so that the outsourcing strategy can be implemented smoothly with low cost and high efficiency.

(3) Improve the institution and culture designed to serve employees. Enterprise leaders have been sticking to the principle of being people-oriented and serving employees since the establishment of the enterprise. When the enterprise was headquartered in Hanwang Town, it had very strong cohesiveness mainly because its employees were subject to centralized working and accommodation, which was convenient to serve employees. After it moved to Deyang, the internal cohesiveness of the enterprise has been challenged by the fact that the enterprise has a larger size and more employees and the enterprise leaders have fewer opportunities to meet frontline employees as they are dispersed over the city. Therefore, enterprise leaders should continue to hold the employees' annual athletic meeting, the workers' representative assembly and other recreational and sports activities, and should set up a mechanism to keep in touch with the frontline. In addition, enterprise leaders may plan a dialogue mechanism between employees and leaders, and create a mechanism to enable the online communication with employees so as to find out the problems in the frontline, to understand and meet the employees' needs, and to narrow the gap between leaders and employees. Enterprise leaders may vigorously develop the sub-cultures of branch plants, workshop sections or teams and squads as the case may be and enhance the corporate cohesiveness with them. They should also pay more attention to employee training and

resource development and offer a platform for employees' growth and development.

(4) Improve the institution and culture designed to serve the society. The Government has been offering public services to the enterprise since it moved to the city. Therefore, the enterprise shall serve the society. Enterprise leaders should plan a greening system, carry out the environment-friendly production, meet the emission standards and protect the environment. Enterprise leaders should plan and set up a mechanism to aid the society, take an active part in various social assistance activities, and fulfil social responsibilities as well as mobilize employees to participate in public philanthropic activities held by the community to show their good social image.

### **5.2.3.3 “Implementation” Element shall be Injected into the Corporate Culture of DTC**

Focusing on “harmony”, the organizational culture of DTC has always been functioning in order to enhance solidarity and promote development in the process of business growth. In addition, it also meets the requirements for development of current Chinese society. However, with the development of the enterprise towards institution management stage, “harmony” organizational culture faces some improper situations. Institution construction and strict management must be carried out under the value of “harmony” as the core of the organizational culture; failing to do this may lead to a decline in the implementation and business operation failure. According to the present situation, in order to build a large company, a “harmonic” organizational culture shall be promoted and the institution shall not be relaxed. Thus, DTC proposes in the Outline of the Development Plan (2011-2015) “to strengthen strategic management, improve strategic management and implementation capability and improve strategy implementation-oriented performance appraisal system so as to combine work performance of the departments at all levels with DTC's operating performance closely so as to effectively support the implementation of the strategy.” In this thesis it is believed that implementation capacity construction can be strengthened through the following measures.

(1) Divide the strategic goals into daily operations. The enterprise leaders shall guide the daily business operation based on the Outline of the Development Plan (2011-2015) and divide the strategic targets of the five-year development plan into annual comprehensive business plans and policy objectives; break the annual plan into quarterly and monthly plans as well as take the strategic targets as key performance indicators (KPI) of all departments. Implement objective management and arrange it for all departments month-by-month and year-by-year so as to combine strategy with daily operation and ensure effective

implementation of strategy in the daily operation.

(2) Comprehensively review and integrate enterprise institution systems. Presently, DTC has many systems, which are very perfect but are not well implemented. The enterprise leaders should simplify and integrate management institutions of all functional departments into a systematic, process-oriented and informatized basis so as to reduce duplication of functional departments, form a uniform and clear institutional platform as well as enhance the institution's adaptability and its implementation capability. The enterprise leaders shall strengthen institutional training and especially establish a regular implementation capability training for older employees. The enterprise leaders should focus on the performance evaluation of the institutional operation and shall arrange special departments to inspect and evaluate its implementation.

(3) Improve the examination and motivating mechanism of implementation. Organizational culture of DTC is based on workshop sections and teams, which are carriers for implementing DTC's institutions and reflecting the corporate culture. The leaders should focus on team management and combine DTC's management institutions with the management institutions of the teams. The enterprise leaders shall focus on the closed-loop management of the institution, with particular emphasis on long-term examination, assessment and motivation of implementation across workshop sections and teams. They shall also combine the elements of management, assessment and distribution to form an implementation system so as to guide the leaders at the basic level to pay attention to implementation in terms of performance assessment and distribution, create a grassroots (workshop sections, teams and employees) implementation culture, reduce attenuation and interruption of implementation at the basic level as well as promote efficient operation of DTC.

#### **5.2.3.4 “Lean” Element shall be Injected into the Corporate Culture of DTC**

Currently, DTC is faced with two major problems in business operation. First, with the rapid expansion of business scale and product diversification, the technological progress, management and control mode and the employees' skills and quality cannot keep pace with the development so that the product quality faces crisis. Second, substantial growth in total assets, huge depreciation and inventories and cost increase result in sharp decline of return on assets and return on net assets. Therefore, the "quality and efficiency improvement" shall become the core of enterprise management and revolve around “lean” management. The enterprise proposes in the Outline of the Development Plan (2011-2015) to adhere to the



implementation of "informatization-based lean production" model and promotion of the refined manufacturing so as to provide users with first-class products and services. Under this strategy, currently the enterprise is promoting lean management projects. Thus, how to follow up the organizational culture is an issue that the enterprise leaders need to consider. In this thesis it is believed that "lean" culture should be created from the following aspects.

(1) Inject "lean " culture into employees. Employees are not only input elements but also core elements for lean enterprise construction. The enterprise leaders shall pay attention to design various mechanisms and carriers, develop long-term corporate entrepreneurship culture education for the employees by focusing on "hard work and dedication" and guide and train the employees to form awareness and behaviour of "frugality, saving, thrift and economization". The enterprise leaders should, based on employees and position analysis, formulate the one-focus and multi-skill development program for key employees and develop the system of multiple opportunities and posts for one employee if the circumstances allow them to do so and design appropriate motivation mechanisms to mobilize the enthusiasm of the employees. The enterprise leaders shall focus on regular assessment and analysis of human resources and job matching situation so as to optimize personnel structure and reduce surplus employees. The enterprise leaders shall improve the team and employees performance appraisal system, and in particular, implement cost and quality assessment of front-line employees, link the quality and cost with income of employees so as to guide them to standardize operation, improve quality, reduce cost and improve efficiency.

(2) Inject "lean" culture into products. Lean design determines lean manufacturing. The enterprise leaders shall separate research and development from design, introduce and develop lean internationalized research and development talents and adhere to the product research and development mechanism featuring "designing, reserving, researching and producing a generation of product respectively". Products developed by the enterprises shall take into account resource conservation and environmental protection, which shall be especially promoted in economic optimal design of various units. In terms of product research and development, design cost accounting and evaluation mechanism shall be established. The enterprise leaders shall develop design and process manuals and establish a mechanism for standardization and modularization of design and technology so as to facilitate standardization and generalization of manufacture. The enterprise shall strengthen planning and assessment of primary design period, improve design quality and reduce production waste due to design modification in later periods.

(3) Inject "lean" culture into the process. Presently, the enterprise has designed multiple information systems according to functions. The enterprise leaders shall form DTC's unique information platform to lay foundation for the enterprise management computerization by the opportunity to modify ERP system to SAP system and the original multiple information platforms. The enterprise leaders shall re-optimize production and management processes and reduce non-value-added production processes and cross-functional management links. The enterprise leaders shall promote the execution of the workshop cost accounting and evaluation system, and in particular strengthen workshop inventory management, accelerate fund turnover and increase enterprise operating profit.

(4) Inject "lean" culture into supply chain. The enterprise leaders shall study supply chain management strategy and in particular foster professional supplier teams. The enterprise leaders shall establish a set of effective supplier quality management methods to enhance the product quality of the supply chain. The enterprise leaders shall focus on cost analysis and control of supply chain and the supply chain logistics costs so as to enhance overall competitiveness of the supply chain.

(5) Inject "lean" culture into organization design. The enterprise leaders shall analyse and assess the operation efficiency of sub-factory system, sub-company system, department system and project system and research an institution that can improve the management efficiency and enthusiasm of the department and project systems. The enterprise leaders shall attach importance to the management efficiency of functional departments and may try the organizational reform of "super department" mode so as to reduce cross-functional management, integrate, centralize and unify enterprise management resources as well as improve management efficiency.

## Chapter 6: Research Conclusions and Prospects

Although there have been abundant literature about organizational culture ( e.g. Jacques, 1951; Kroeber and Kluchhon, 1952; Willen Verbeke, 1998; Smirchich, 1983; Rousseau, 1998; Sathe, 1985; Peters and Waterman, 1982; Deal and Kennedy, 1982; Schein, 1990; Hofstede, 1990, 2005; Ochi, 1981 ) and its measurement (e.g.. Quinn and Rohrbaugh, 1981,1983; Denison, 1996; Sarros, Gray and Densten, 2002; Schein, 2010), there is still an urgent need for research on the historical bases, the social environment, the traditions, and the institutions of organizational culture, since they are very important for organizational culture (Weber & Dacin, 2011). Because SOE is a kind of unique Chinese phenomenon, very few research has already been done so far and only a fragmented probe exists, mostly concentrated on aspects of general management. As for research on the organizational culture of SOEs, the extant research is mostly normative and confined to significance and content. For the institutional change, extant research mostly discusses the stages, paths and costs of institutional change. However, the influence of institutional environments of SOE on leadership values, core philosophy, behavioural norms and organizational culture, as well as the influence of organizational culture of SOE on the HR policy and social responsibility are still a wide gap that needs to be filled. This is the theoretical starting point of this research.

As one of important SOEs, the history of DTC is typical and representative. Its already existing culture has always played an important role in the development of DTC, however, there are still many problems that the company, and such kind of SOEs, face. How may the culture support better and better the development of DTC? How to keep the excellent quality of the culture of DTC in the future? How to coordinate the relationship between culture and institutional change? Due to the important role of SOEs in the social life in China, these problems should be paid great attention to. This is the practical starting point of this research.

Based on the theoretical and practical background, taking DTC as the research object, the case study method (Eisenhardt, 1989; Yin, 2009) was used to explore the stages of institutional change of this particular SOE and the corresponding characteristics of each stage as well as the culture, and the coordinate mechanism between institution and organizational culture.

The research contents and main conclusions will be described briefly below, as well as

the significance and limitations of this research. Some practical suggestions for organizational culture management are also given.

## 6.1 Research Contents

According to the institutional process theory of corporate culture (Kondra and Hurst , 2008), the research model is proposed as figure 3-1. Five propositions are proposed accordingly: (1) The institutional environment and its change will influence the management style of the enterprise; (2) The characteristics of the organizational culture will influence the management style of the enterprise, and make the management style thereof with comparative stability; (3) The corporate culture is one component of the organization, and the external institutional environment of the enterprise will influence the corporate culture inside the enterprise; (4) The management style will influence the organizational performance, reflecting on several aspects, such as group efficiency and organization satisfaction; (5) In the long run, the relatively low organizational performance inside the enterprise will promote the reform of the corporate culture in turn.

Following the case study method (Eisenhardt, 1989; Yin, 2009), taking DTC as the research object, data were collected from all possible ways and triangulated, so as to explore the above propositions.

All the research contents may be concluded as below:

(1) The stages of the development of SOEs and DTC and corresponding characteristics of each stage.

Institutional development phases of Chinese SOEs: by collecting and analysing documental materials, following the development line of property rights system, the development process of Chinese enterprises' system, this thesis has presented and discussed the development phases as well as the main institutional changes at each phase. In what concerns the institutional development phases of DTC, based on company internal documents and by conducting interviews with six top leaders in the company and a questionnaire survey administered to middle-level cadres, the thesis has studied how the system of Chinese SOE influences that within DTC, the institutional development procedures of DTC as well as its development phases along with the main characteristics at each phase.

(2) Corporate cultural development phases of DTC: by conducting in-depth interviews with six top leaders and the questionnaire survey administered to middle-level officers, and by

consulting internal documents of the company, the thesis studied the corporate cultural development process of DTC and its development phases along with the cultural characteristics at each phase.

(4) The organizational culture of DTC experienced many tests and challenges during the 2008 catastrophic earthquake: by conducting in-depth interviews with the six leaders and consulting internal materials of the company, the thesis studied how the organizational culture functioned when DTC was under the impact of such a serious incident, the severe Wenchuan earthquake in Sichuan, the challenges that the earthquake brought about to the culture of DTC and the future reform and direction of the corporate culture in DTC.

(5) The influences of the institutional environment and the organizational culture on the management style: based on the knowledge in the documents and on the field research –in-depth interviews, questionnaire survey – the thesis studied, taking DTC as an example, how the institutional environment and corporate culture exerts influences on the management style.

(6) The influence of the management style on corporate performance: based on the knowledge in the documents and on field research – in-depth interviews and questionnaire survey, and by making analysis of those internal materials, the thesis studied, taking DTC as an example, how the organizational culture exerts influences on the company's team efficiency, the employees' degree of satisfaction with the company and its financial performance as well as how the corporate performance promotes the corporate cultural changes.

## **6.2 Main Conclusions**

(1) The institutional changes of Chinese SOEs can be divided into four phases: the first phase falls upon a time from 1966 to 1982, a phase when the system mainly featured the planned economy and the Third Frontline construction; the second phase, from 1983 to 1992, mainly features the market economy reform and transformation of operational mechanisms; the third phase from 1993-2005, mainly features the construction of the market economy system, and the fourth phase, from 2006 to the present, mainly features the construction of modern corporate system.

(2) The internal institutional changes of DTC can also be divided into four phases. As a wholly SOE, its internal system is directly decided by that of Chinese SOEs, with the

institutional development phases within the company coinciding with those of the Chinese state-owned enterprises. At the first phase, DTC was serving as a government sector producing turbines as planned, with the harmony of interpersonal relationship, technological innovation and after-sales services being as the key factors in the corporate system. At the second phase, based on the planned economy as the main body but complemented by the market economy, DTC powerfully advanced the reform and innovation, with the harmony of interpersonal relationship, after-sales services and technological innovation being still the key factors that were driving the corporate system. At the third phase, DTC got involved in market competition and further reformed its internal system, with after-sales services, technological innovation and harmony of interpersonal relationship being the critical features of the corporate system, that is, the same features with a different order of importance. At the fourth phase, DTC has been constructing the modern corporate system and pushing forward the work of post-earthquake reconstruction. At this phase, technological innovation, market competition and after-sales services are all the more important factors in the corporate system, that is, harmony of interpersonal relationships gives way to a new feature: market competition.

(3) The development phases of the organizational culture correspond to the changes in the institutional environment. Influenced by the internal system, the development of the organizational culture of DTC can also be divided into four phases. Along with the consistent cultural characteristic of harmonious interpersonal relationship, the first phase was identified also by the important feature of “fighting with hard work”, a notable cultural characteristic; the second phase was mainly characterized by “reform and innovation”; the third phase by a “matter-of-fact attitude and exploration”; and the fourth phase by “entrepreneurship and innovation”.

(4) The organizational culture of DTC was proven to be of strong vitality in the 2008 earthquake. Then the culture burst and showed its great “soft” power. When employees were undergoing the great disaster of the earthquake, they helped the company to agglomerate the strength of its staff although they were also confronting huge personal misfortunes, accelerating the recovery and reconstruction of the company and improving its development level. However, the severe disaster of the earthquake surely brought huge changes to DTC, which impacted on its organizational culture. Not only the consistency of DTC’s splendid corporate cultural features was influenced, but also the corporate cultural reform requires to be accelerated so as to adapt to the environmental changes and keep the enterprise

development in a continuing way.

(5) Institutional environment and organizational culture hold influences on the management style. Since the management style is a personified representation of the enterprise leadership at the institutional level, both the external and internal systems confronting DTC will influence the internal management style. The organizational culture will, along with the institutional changes, constantly adjust itself, which explains the fact that the cultural features always carry the marks of the system.

(6) The management style influences corporate performance: a management style which is positive and effective, and which meet the requirements of the institutional environment and organizational culture helps to enhance the morale in the company and improve the financial performance. The relationship of influence is, of course, not a linear one though as a delayed influence is possible to exist.

All the conclusions above, to some extent, improve and enrich the existing research on SOEs and related institutional change (e.g. Zhang Shixue , 2006 ; Yu yan , 2009). Culture and institution depend on each other in their nature (Jenna and Scott, 2006) and they are complementary (Zhang Zhixue, Zhang Jianjun and Liang Junping, 2006). Based on existing literature about organizational culture and its assessment, these conclusions may help to understand more deeply the connections between institution and culture.

### **6.3 Theoretical Significance**

(1) A mechanic inter-influence model of institutional environment, organizational culture and management style has been proposed, and the analysis of the conclusions may have an important theoretical contribution to the research on the corporate evolution. It was found that an SOE must conform to the system of SOEs established by their owner: the country; the system will impose requirements for the company's cultural reform, and together with those of the company's institutional reform will affect the management style as a personified representation of leadership at the institutional level. The case study of DTC can also be verified through this mechanic model, which may serve as an important tool to research the corporate evolution of SOEs in the future, or be a reference in the study of corporate changes of other types of enterprises such as private and foreign-owned companies.

(2) The description of the relationship between the "structure unifying" influence of the institutional environment and the "culture hydrogenising" influence of organizational culture

helps to explain the adoption of a diversification development strategy by enterprises undergoing institutional environmental pressures. We studied and found that on one hand, the similar external institutional environment of the SOEs will lead to their unified internal system structure, and on the other hand, the organizational culture, which is relatively stable and which accounts for the uniqueness of an enterprise, produces heterogeneous enterprises. The correlation between these two influences results in a variety of management styles among those different SOEs. What is more, the “unified structure” system of SOEs and the heterogeneous market competition environments correlates with each other again and leads to a complicated external environment for those SOEs that, in order to meet the different requirements of the country and the market, make the critical decision to adopt a diversification development strategy.

(3) It is an important theoretical inspiration for the development of Chinese SOEs in a transitional economic environment to take DTC – a large and successful SOE – as a case study and make analysis as well as conclusions as to the long-term organizational evolution. We studied and found that as DTC is an example of SOE with a similar external environment to other companies, the research conclusions may apply to some extent to other SOEs. For example, at the first phase, the system featuring state-planned economy and Third Frontline construction made the third-line SOEs have generation marks of obeying the state orders and dedicating to third-line construction, which cultivated an organizational culture mainly featuring fighting with hard work and spirit of devotion. This culture produced, in turn, a management style featuring maintenance of harmonious inter-personal relationships, encouragement of self-dependence and independent research and product development. Another example is that at the fourth phase, the state accelerated the institutional reform of the state-owned property, which brought innovation requirements for the corporate cultural reform; these requirements then encouraged the company to build a modern enterprise system and adopt a diversification development strategy. Above all, the conclusions drawn based on the study of DTC as an example may serve as a reference, to some extent, for the development of other SOEs.

## **6.4 Practical Suggestions**

Although only one company, DTC, is taken as one example of SOEs in this research, the findings may offer others valuable experiences and lessons which could be used for reference such as summarized below:



(1) Leaders should pay close attention to their organizational cultures: Since the external institutional environment of SOEs directly affect internal organizational cultures, according to the findings of this research, leaders of SOEs should not only pay close attention to the SOE system and related institutions, but also to the internal organizational culture, which should be adjusted and improved on time based on the different stages and the relevant characteristics of the development of the SOE system and institutions, and make the internal organizational culture develop with the change and development of outside institutional environments. Finally they should strive to make inside organizational cultures continuously fit the outside environment.

(2) Organizational culture is an important part of core competitiveness: The findings of this research show that although DTC and other SOEs have homogeneous outside institutional environment, they have heterogeneous organizational cultures, that is, DTC culture is unique to DTC. It is precisely this uniqueness that has been supporting the development of DTC. SOEs should pay high attention to their organizational culture, create core competitiveness which is not replicated and imitated through constructing and developing excellent organizational cultures which are unique and fit the specific characteristics of the SOE itself, so that it has a hard basis of cultural heterogeneity to win in market competition.

(3) The role of leaders should be highly emphasized: The findings of this research also show that leaders play an important role in the process of creating and developing organizational culture to adapt to outside environment. All top leaders of DTC have been internally promoted. It is the internal promotion mechanism that can guarantee the inheritance of the excellent organizational culture of DTC generation after generation, which has accelerated DTC rapid development. The experience of DTC shows that the mechanism of promotion should be paid high attention to as well as the construction and development of such mechanism. Internal promotion mechanism gives a good chance to inherit the organizational culture generated from the beginning: if the culture is excellent and beneficial to its development, the organization could develop and expand well with the strong support of its culture.

(4) Specific management style is very important and necessary: The case of DTC shows that under the influences of both outside institutional environment and inside organizational culture, DTC formed a distinctive management style which has competitive advantage. To some extent, this style leads to DTC's good organizational performance. So, under complex pressure from outside environment, enterprises should foster excellent management style to

establish core competitive advantage and improve performance constantly.

## **6.5 Limitations and Prospects for Further Research**

Limited by time and energy, there still exist the following deficiencies in this thesis:

(1) Although all the research is based on detailed information and reliable data, whether the conclusions from only one company – DTC – could be extended to other SOEs in China, still needs empirical evidence. In the future study, larger sampler should be used to test the conclusions of this research and further verify the applicability of the theoretical model.

(2) Limited by the volume of work, the questionnaire survey for this thesis was conducted among middle-level cadres and the scores provided by them are the source to figure out the institutional features and management characteristics of DTC at each development phase of the company. As a result, the data have some limitations and follow-up questionnaire surveys among other staff are necessary to further verify the effectiveness of the data.

(3) The evaluation of DTC's organizational culture in this thesis is mainly based on existing documents and in-depth interviews. However existing documents have the time lag syndrome while in-depth interviews have been limited to only ten interviewees. The nature of organizational culture means close connections with every organization member, so, in subsequent research, questionnaires to all levels of organization members should be employed to enrich the quantitative study of organizational culture, aiming to assess culture more exactly.

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## Annexes

Questionnaire No. \_\_\_\_\_

Construction of Corporate Culture of Dongfang Turbine Co., Ltd

Questionnaire (for Managers)

December, 2011

### Description:

1. We hope you can take about 30 minutes to complete this questionnaire. We believe the opinions you provide will be helpful to the development of the “Eleventh Five-Year Plan” and the cultural construction of Dongfang Turbine Co., Ltd (referred to as DTC hereinafter). Therefore, we suggest you to express your true opinions about the topics on DTC’s corporate culture construction.

2. Please read each item carefully, make your different judgment to the following behaviours and choose the corresponding levels. All the answers to the questions shall be your subjective judgments and without “right” or “wrong” or “true” and “false” answers. Please answer the questions in accordance with your real thoughts and do not be influenced by others.

3. This questionnaire is with secret ballot. The questionnaire paper you fill in will be treated as confidential document strictly, and these questionnaires will be connected and filed by specially-assigned persons.

Thank you for your valuable opinions in advance!

### **Part I Survey on Personal Information**

1. Your title is: (1) Worker; (2) Technician; (3) Administrative staff; (4) Middle-level cadre; (5) Leader of DTC; (6) Retired staff

2. Your present age is: \_\_\_\_\_ years old.

3. Your gender is: (1) Male, (2) Female.

4. Your education background is: (1) Primary school education; (2) Junior high school education; (3) Senior high school or technical secondary school education; (4) College or university education; (5) Graduate education.

The major you studied last is: (1) Natural science (math, science, chemistry, biology, etc.); (2) Engineering;

(3) Economics; (4) Business administration; (5) Politics and law; (6) Recreation and sports ; ( 7 ) Accounting or finance; (8) Others.

5. The year when you graduated from school and started to work is: \_\_\_\_\_(year); the year you started to work in DTC is: \_\_\_\_\_(year).

6. Your present post in DTC is: \_\_\_\_\_. The duration that you have been working on this post till now: \_\_\_\_\_year(s).

No.	Items	The following questions are talking about DTC's achievements. Do you think they are in compliance with the present situation or not?					Compared with the conditions when you came to work in DTC, do these questions become more and more important to DTC or not?				
		Completely inconsistent	Inconsistent	Undefined	Consistent on the whole	Extremely consistent	Not important at all	Not very important	Remaining unchanged	Becoming more important	Becoming essential
1	DTC's achievements result from integration of enterprise resources	5	4	3	2	1	5	4	3	2	1
2	DTC's achievements result from the guidance of DTC's leaders	5	4	3	2	1	5	4	3	2	1
3	DTC's achievements result from the excellent workforce	5	4	3	2	1	5	4	3	2	1
4	DTC's achievements result from the solicitude for the growth and progress of the staffs	5	4	3	2	1	5	4	3	2	1
5	DTC's achievements result from emphasis on the realization of overall goals of the enterprise	5	4	3	2	1	5	4	3	2	1
6	DTC's achievements result from creation of values for DTC's customers _____ the power plants	5	4	3	2	1	5	4	3	2	1
7	DTC's achievements result from the advanced equipment and workshops	5	4	3	2	1	5	4	3	2	1
8	DTC's achievements result from the thoughtful services for the customers	5	4	3	2	1	5	4	3	2	1
9	DTC's achievements result from the cooperation between DTC's systems and departments	5	4	3	2	1	5	4	3	2	1
10	DTC's achievements result from production of high-quality turbine products	5	4	3	2	1	5	4	3	2	1
11	DTC's achievements result from close attention to working team construction	5	4	3	2	1	5	4	3	2	1

12		DTC's achievements result from the courage to compete with opponents									
		5	4	3	2	1	5	4	3	2	1
No.	Items	The following questions describe the running evaluation and satisfaction of the department where you are working , do you think they are in compliance with the present situation or not?					Compared with the conditions when you just came to the department, do you think the conditions become better or get worse?				
		Disagree	Not quite agree	Undefined	Agree to some extent	Absolutely agree	Deteriorate significantly	Become a little bit worse	Remain unchanged	Become a little bit better	Improve markedly
1	All the staffs in your department make plans and try their best to achieve the goals of such plans together	5	4	3	2	1	5	4	3	2	1
2	Your department can make correct decisions and solve the problems well	5	4	3	2	1	5	4	3	2	1
3	Your department can make internal communication and share the information related to the important events and conditions	5	4	3	2	1	5	4	3	2	1
4	The department you are working has sense of responsibility to achieve the goals of your department successfully	5	4	3	2	1	5	4	3	2	1
5	The members of your department can positively respond to the special working requirements of your department	5	4	3	2	1	5	4	3	2	1
6	You have sufficient confidence and trust to the members in your department	5	4	3	2	1	5	4	3	2	1
7	You are satisfied with the members in your department	5	4	3	2	1	5	4	3	2	1
8	You are satisfied with your immediate leader	5	4	3	2	1	5	4	3	2	1
9	You are satisfied with your present job	5	4	3	2	1	5	4	3	2	1
10	You are satisfied with DTC	5	4	3	2	1	5	4	3	2	1
11	So far, you are satisfied with your progress and achievements in DTC	5	4	3	2	1	5	4	3	2	1

12	You are satisfied with your development opportunities in DTC in the future	5	4	3	2	1	5	4	3	2	1
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**If calculating from the time when you knew about DTC, and dividing DTC’s development during these years into 3 to 5 stages, do you think how to divide it? And what are the characteristics of each stage?**

**Filling explanation: fill in the form from the first stage to the last stage that you would divide into; for example, if you divide the period into three stages, then just fill in the contents from the first stage to the third stage.**

**The first stage: from \_\_\_\_\_(year) to \_\_\_\_\_(year).**

No.	Items	During the first stage, what’s the importance of the following respects in DTC’s development?					During the first stage, compared with other enterprises, especially the competitors of the same industry, what’s The actual performance of DTC?				
		Not important at all	Not very important	A little important	Relatively important	Very important	Doing extremely bad	Doing bad	At the same level	Doing well	Doing very well
1	Evaluation of mechanism construction	5	4	3	2	1	5	4	3	2	1
2	Distribution mechanism construction	5	4	3	2	1	5	4	3	2	1
3	Sense of competition of market	5	4	3	2	1	5	4	3	2	1
4	Development and training of staffs	5	4	3	2	1	5	4	3	2	1
5	Interpersonal harmony	5	4	3	2	1	5	4	3	2	1
6	Technical innovation	5	4	3	2	1	5	4	3	2	1
7	Customer oriented	5	4	3	2	1	5	4	3	2	1
8	Quality of products	5	4	3	2	1	5	4	3	2	1
9	After-sales service	5	4	3	2	1	5	4	3	2	1



10	Social responsibility	5	4	3	2	1	5	4	3	2	1
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**What are the typical characteristics of DTC's corporate culture at the first stage:**

**The second stage: from \_\_\_\_\_(year) to \_\_\_\_\_(year).**

No.	Items	During the second stage, what's the importance of the following respects in DTC's development?					During the second stage, compared with the other enterprises, especially the competitors of the same industry, what's the actual performance of DTC?				
		Not important at all	Not very important	A little important	Relatively important	Very important	Doing extremely bad	Doing relatively bad	At the same level	Doing well	Doing very well
1	Evaluation of mechanism construction	5	4	3	2	1	5	4	3	2	1
2	Distribution mechanism construction	5	4	3	2	1	5	4	3	2	1
3	Sense of competition of market	5	4	3	2	1	5	4	3	2	1
4	Development and training for staffs	5	4	3	2	1	5	4	3	2	1
5	Interpersonal harmony	5	4	3	2	1	5	4	3	2	1
6	Technical innovation	5	4	3	2	1	5	4	3	2	1
7	Customer oriented	5	4	3	2	1	5	4	3	2	1
8	Quality of products	5	4	3	2	1	5	4	3	2	1
9	After-sales service	5	4	3	2	1	5	4	3	2	1

10	Social responsibility	5	4	3	2	1	5	4	3	2	1
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**What are the typical characteristics of DTC's corporate culture at the second stage:**

**The third stage: from \_\_\_\_\_(year) to \_\_\_\_\_(year).**

No.	Items	During the third stage, what's the importance of the following respects in DTC's development?					During the third stage, compared with the other enterprises, especially the competitors of the same industry, what's the actual performance of DTC?				
		Not important at all	Not very important	A little important	Relatively important	Very important	Doing extremely bad	Doing relatively bad	At the same level	Doing well	Doing very well
1	Evaluation of mechanism construction	5	4	3	2	1	5	4	3	2	1
2	Distribution mechanism construction	5	4	3	2	1	5	4	3	2	1
3	Sense of competition of market	5	4	3	2	1	5	4	3	2	1
4	Development and training for staffs	5	4	3	2	1	5	4	3	2	1
5	Interpersonal harmony	5	4	3	2	1	5	4	3	2	1
6	Technical innovation	5	4	3	2	1	5	4	3	2	1
7	Customer oriented	5	4	3	2	1	5	4	3	2	1
8	Quality of products	5	4	3	2	1	5	4	3	2	1
9	After-sales service	5	4	3	2	1	5	4	3	2	1

10	Social responsibility	5	4	3	2	1	5	4	3	2	1
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**What are the typical characteristics of DTC's corporate culture at the third stage:**

**The fourth stage: from \_\_\_\_\_(year) to \_\_\_\_\_(year).**

No.	Items	During the fourth stage, what's the importance of the following respects in DTC's development?					During the fourth stage, compared with the other enterprises, especially the competitors of the same industry, what's the actual performance of DTC?				
		Not important at all	Not very important	A little important	Relatively important	Very important	Doing extremely bad	Doing relatively bad	At the same level	Doing well	Doing very well
1	Evaluation mechanism of construction	5	4	3	2	1	5	4	3	2	1
2	Distribution mechanism construction	5	4	3	2	1	5	4	3	2	1
3	Sense of competition of market	5	4	3	2	1	5	4	3	2	1
4	Development and training for staffs	5	4	3	2	1	5	4	3	2	1
5	Interpersonal harmony	5	4	3	2	1	5	4	3	2	1
6	Technical innovation	5	4	3	2	1	5	4	3	2	1
7	Customer oriented	5	4	3	2	1	5	4	3	2	1
8	Quality of products	5	4	3	2	1	5	4	3	2	1
9	After-sales service	5	4	3	2	1	5	4	3	2	1

10	Social responsibility	5	4	3	2	1	5	4	3	2	1
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What are the typical characteristics of DTC's corporate culture at the fourth stage:

The fifth stage: from \_\_\_\_\_(year) to \_\_\_\_\_(year).

No.	Items	During the fifth stage, what's the importance of the following respects in DTC's development?					During the fifth stage, compared with the other enterprises, especially the competitors of the same trade, what's the actual performance of DTC?				
		Not important at all	Not very important	A little important	Relatively important	Very important	Doing extremely bad	Doing relatively bad	At the same level	Doing well	Doing very well
1	Evaluation mechanism of construction	5	4	3	2	1	5	4	3	2	1
2	Distribution mechanism construction	5	4	3	2	1	5	4	3	2	1
3	Sense of competition of market	5	4	3	2	1	5	4	3	2	1
4	Development and training for staffs	5	4	3	2	1	5	4	3	2	1
5	Interpersonal harmony	5	4	3	2	1	5	4	3	2	1
6	Technical innovation	5	4	3	2	1	5	4	3	2	1
7	Customer oriented	5	4	3	2	1	5	4	3	2	1
8	Quality of products	5	4	3	2	1	5	4	3	2	1
9	After-sales service	5	4	3	2	1	5	4	3	2	1

10	Social responsibility	5	4	3	2	1	5	4	3	2	1
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**What are the typical characteristics of DTC's corporate culture at the fifth stage:**