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Unveiling Secrets of Successful Chinese Software Companies

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***Abstract*— There are secrets and business of successful software companies explained by Hoch in 2000 and Cusumano in 2004, but there existed none cases from China. This occurred maybe the Chinese software companies are in infancy and the survey is challenge in China. However, the software industry plays an important role in innovation and pushing the economical transformation in China economics. So, in this work, we first archived and abstracted the success experiences from the international software companies. Next to setup a criteria to define the successful Chinese software companies (SCSCs) in China and got the materials and data through the telephone survey, interviewing, searching the professional magazines and reviewing the documents of some companies. More, to pigeonholing the data and finding the characteristics that led to success and comparing the characteristics with the international ones. The results showed that SCSCs verified the international characteristics, and displayed some special characteristics that distinguished the SCSC with the international ones. The special characteristics listed as follows. First, the entrepreneurs own the power to find the market space and could provide the high aptness, compact function and high quality product. Second, SCSCs owned the intellectual property rights independently of product, product-type company not service-type company gradually developed into SCSCs. Third the SCSCs usually originated from the middle and low range market, this is representative road that produced SCSCs. Fourth, the founder acts as the leader of the company unremittingly up to now, and control the strategy that decided the fate on the crisis of transformation which make the company stride forward to the Ruritania of the founders. Fifth, make the business on the robust status that to avoid the big variation. Sixth, the core business is prominent and professional.**

***Keywords*—software company in China, Success Characteristic, Special Characteristic, Product, Service**

I. INTRODUCTION

As the world's software market becomes increasingly globalized and the trend of IT outsourcing continues to strengthen, China is expected to play a key role in the global software arena and deserves close attention [1]. A significant contributor to China's sustaining economic growth, China's domestic software market is gigantic. Its total value in 2007 was 52.7 billion dollars, accounting for 8.7% of the global software market [2]. With China's growing outsourcing services and domestic demand, the expected compound annual growth rate for her software market is 16.2% from 2008 to 2012 [2]. According to the criteria of top 500 software company published by *Software Magazine* [10], many Chinese companies beat the criteria and could have been ranked. However, unlike India which mainly provides IT outsourcing services to foreign countries, China's computer industry is primarily focused on serving domestic demands in recent years [1]. Thus, little is known about what led to the success of Chinese software companies, although such knowledge would be beneficial to those who are interested in China's software market. Hoch [6] and Cusumano [4] have investigated successful international software companies' characteristics related to business strategies, critical decision making, and core business functions. Yet, their research does not include Chinese companies. Few prior studies have examined the characteristics of successful Chinese software companies (SCSCs) vis-à-vis those of international companies. Do SCSCs and their international peers share common characteristics? Given China's unique cultural and business contexts, we suspect that the answer is yes. In this article we will lead you to enter the dragon by unveiling the secrets of SCSCs.

II. SELECTING SUCCESSFUL COMPANIES

This study is focused on independent software vendors (ISVs). Drawing from and extending Hoch et al's [6] criteria for software company success, we determine whether a company is a SCSC by evaluating eleven dimensions, including business areas and product lines, ranking in the segment market, company age, accreditation systems, revenues of the past three years, profit of the past three years, number of employees, number of channels and their coverage, primary business design and transformation, partnership network, marketing strategy and performance. We conducted a focus group consisting of software company senior managers and industry experts to assess the legitimacy and comprehensiveness of these dimensions. To select SCSCs, we first developed a list of candidate companies based governmental data provided by MIIT (Ministry of Industry and Information Technology, China) [8] and commercial research reports published by IDC [7] and CCIDNET [2]. The candidates included the top three companies in each segment of China's software market. They were analyzed and compared from the eleven dimensions we identified and a focus group

consisting of industry experts was conducted to help us determine the most successful companies. Finally, ten companies were identified as SCSCs for this study – the top three mass market product (including security software) companies (KINGSOFT, RISINGSOFT, and JIANGMIN), four enterprise solution product companies (top two ERP providers – UFIDA and KINGDEE and top two PLM software providers – EXTECH and KMSOFT), the top two professional service companies (NEUSOFT and China Software Service) and the top one middleware company (TONGTECH). Table 1 shows some general information of the ten companies.

TABLE I. THE TEN SUCCESSFUL CHINESE SOFTWARE COMPANIES

Company Name	Founding Year	Core Business
UFIDA	1988	Business Software
Kingdee	1993	Business Software
Neusoft	1991	Industry solutions & outsourcing
China Software service	1980	Industry solutions & outsourcing
TongTech	1992	Middleware
Kingsoft	1989	Office and Security
RisingSoft	1991	Security
Jiangmin	1996	Security
Extech	1994	Product Lifecycle Management sofeware
KMSoft	1996	Product Lifecycle Management sofeware

III. CHARACTERISTICS SHARED BY CHINESE AND INTERNATIONAL SUCCESSFUL SOFTWARE COMPANIES

Based on the findings of Hoch [6] and Cunsumano [3, 4, 5], we developed a set of common characteristics of international successful software companies and used it to evaluate the ten SCSCs. The results demonstrate that the SCSCs possess most of the important characteristics of their international peers. Their commonality can be highlighted in the following four areas.

A. Stable Leadership and Continuous Innovation

Like international successful software companies, SCSCs typically have leaders who have a long tenure and are able to innovate continuously to expand the companies. The CEO of UIFDA has been in his position since the company was founded in 1988. Under his leadership, the annual revenue of UIFDA grew from about 8,000 US dollars in 1988 to 180 million US dollars in 2007, its sales dollar amount of 2007 was as much as 20,000 times of that of 1988, and its number of employees has increased from two in 1988 to over 6,000. UIFDA's product provision has evolved from finance packages to total enterprise solutions consisting of three steady product lines designed for mini, small and medium, and large enterprises. UIFDA has the largest share in China's finance software and ERP markets. It has developed the first ERP on the JAVA platform in the world and will release the ERP based on an independent SOA platform in 2008. Following a path similar to UIFDA's, KINGDEE started as a finance software provider and became the second largest provider of enterprise solutions through continuous product innovations. The president and CEO of KINGSOFT have been the twin leaders since 1992 until the CEO retired in 2008 and the president took over his position. Now, KINGSOFT is the first provider of Chinese office suite and electronic-dictionary, and one of the top three providers of security software. The CEO of TONGTECH has not changed since 1992. He led the revolutionary and strategic reform that transformed TONGTECH from a system integrator company to a middleware ISV. TONGTECH started a software factory plan in May 1999, whose objective is to build structured software development and management systems to improve quality and efficiency of software development and enhance the company's competitiveness. TONGTECH is the first provider of middleware of China, and one of the top three providers in China's middleware market, with the other two being IBM and BEA. The CEO of NEUSOFT has also held his position since the company was founded in 1991. NEUSOFT is the biggest outsourcing provider in China. It is the first Chinese company which developed CT (Computerized Tomography) machine with independent intellectual property in 1994. At present NEUSOFT is capable of providing total digital imaging solutions to hospitals. The CEO of EXTECH has been on the post since the company was founded in 1994 and witnessed the company's development from a start-up to the bellwether of China's PLM market.

B. Strong R&D Team and Rigorous Testing

The SCSCs we studied have the strongest R&D teams in their segment industries and obtained the CMM/CMMI level 5 certification to guarantee their product quality. They actively took part in the 863 program supported by the Chinese government to encourage technological development and innovations, thereby enhancing their own R&D capabilities. UFIDA has about 800 R&D employees and KINGDEE has about 500. More than 700 employees at KINGSOFT's are doing R&D work. UIFDA, KINGDEE, and NEUSOFT have received the CMM/CMMI5 accreditation. UFIDA also established a national level enterprise technology R&D center and joint labs with Microsoft and INTEL to facilitate collaboration. The SCSCs emphasize product quality. In UIFDA, the daily build routine has been carried out since 2002. Testing is a task of great importance in UIFDA. On average, every two development engineers are supported by a specialized test engineer. In addition, UIFDA frequently hire professional testing companies and conduct testing participated by all of its own employees and client companies' employees. When KINGSOFT released an alpha version of its anti-virus product in April 1999, it performed a large-scale testing that involved about two million participants who could download the software through over 200 websites including SINA.com and SOHU.com or install the software from CDs bundled with newspapers and magazines of more than 10 media companies such as China Information World and Computer World. The testing lasted 18 months until the software's market launch in November 2001. Additionally, KINGSOFT provide free specialized antivirus tools for specific viruses.

C. Emphasis on Marketing

Successful software companies usually have experiences of marketing success, and their marketing strategies are considered "best practices" in their segment markets. They always take advantage of various media to demonstrate their new products and solutions and introduce successful customers so that their visibility and reputation are increased. UFIDA and

KINGDEE hold a grand customer forum each year, respectively. It is their most important marketing campaign of the business year and they invest millions of RMB yuan in the event. UFIDA also hosts an annual manufacturer summit which invites research experts, successful customers, R&D experts, partners, and government officers to communicate on issues regarding management optimization and solution design in manufacturing firms. In addition, UFIDA holds over 300 small-scale symposiums on special topics that aimed at niche market requirements, and dozens of service symposiums. UFIDA's customers will receive a company periodical which distributes news of UFIDA products and service, success stories, and management best practices. In 2002 KINGDEE established the Oriental Pearl Club – a customer club intending to strengthen their ties with customers. About 60,000 companies around the country joined this club. The club holds a customer success experience sharing event almost every two days. KINGDEE puts all the customer success stories together and publishes a yearly book reposting those cases. KINGSOFT established its leadership in the electronic dictionary market by launching the "Red Storm of Genuine" marketing strategy in 1999, and released a free personal version of the GOOGLE-KINGSOFT electronic dictionary in 2008 to enhance customer loyalty. Through marketing campaigns such as "Blue Security Revolution" and "10,000-mile March Anti-virus Campaign" KINGSOFT volunteered to remove computer viruses for free in every region of China and raised security awareness among computer users. KINGSOFT hosted a press conference in 2003 to announce its signing a contract to provide WPS office software to more than 2,000 middle schools in Shanghai, which greatly increased its visibility. In the office software market dominated by Microsoft, KINGSOFT was able to hold its ground and became the leader of the office software market in China.

D. Network of Partners

Similar to international successful software companies, SCSCs all have a large, effective, multi-layer partnership network. UFIDA is one of the 12 ISV global partners of Microsoft. This partnership allows UFIDA to stay current with Microsoft's technological advancement. Both UIFDA and KINGDEE established a long-term collaborative relationship with IBM in R&D. The relationship between KINGDEE and IBM allows them to jointly design business solutions. UFIDA and KINGDEE also have partners for secondary development and local customization. UFIDA connects with a wide range of partners providing complementary solutions such as PLM solutions, bar code systems, instant messaging software, mobile and PDA appliances, VPN solutions, online banking solutions, and specific industry solutions, forming an ecosystem of integrated enterprise solutions. In sales and service, UIFDA and KINGDEE have hundreds of agents all over the country. These agents have various certifications and sell different products based on their qualifications. Both UFIDA and KINGDEE also have dozens of partner service companies specialized in implementing UFIDA and KINGDEE products. TONGTECH developed a partner network composed of qualified partners, value adding partners and strategic partners. KINGSOFT created a partner network including sales partners, value-adding partners, technology partners and network marketing partners. NEUSOFT and China Software & Service cooperate with well-known companies such as Microsoft, IBM, ORACLE, BEA, CISCO, SUN, and FUJITSU.

IV. UNIQUE CHARACTERISTICS OF SUCCESSFUL CHINESE SOFTWARE COMPANY

Given China's unique context, it is reasonable to contend that a company that has all the characteristics of international successful software companies might not succeed in China. Just like socialism in China should be "socialism with Chinese characteristics", software companies need to possess some "Chinese characteristics" to be successful in China's software market. To reveal the unique characteristics of SCSCs, we followed the case study research methodology to collect and analyze data.

First, in the interviews we showed company executives a list of characteristics of successful international software companies identified by Hoch et al. [6] and Cusumano [3, 4, 5] and asked them to name characteristics of SCSCs that were not listed. Second, we conducted a focus group consisting of six academic researchers and senior managers from software companies to validate the unique characteristics of SCSCs. The characteristics were then confirmed by reviewing the opinions of the SCSCs' CEOs regarding business strategies and operations published in various periodicals. Finally, we performed a systematic analysis of all the materials collected during the study, resolved contradicting views via debating and collecting additional information, and finalized six unique characteristics of SCSCs. These characteristics are discussed as follows.

A. Find and Fit Niches

SCSCs have capabilities of finding market niches in China and providing efficient products to meet specific demands of the niche market. UFIDA is one of the first providers of finance management software. The two founders of UFIDA developed a finance management product in 1988 based on Dbase III running on individual PCs. This occurred when computers started to be used to support management in China and the software provided special accounting functions to help accountants. The primary objective of UFIDA's early products is to improve accounting efficiency, thus librating accountants from burdensome and repetitive manual accounting work. UFIDA established a large customer base through selling its finance management software, which laid the foundation for its future dominance in the enterprise system market. KINGDEE's growth is similar to UFIDA's. KINGSOFT's early product was Word Processing System (WPS) developed by its founder, Qiu Bojun, in 1988. Written in assembly language, WPS was able to process Chinese character input and typesetting. Relying on word of mouth to diffuse, WPS was the most popular software (its highest market share reached 90% at one time) in China in the early 1990s. WPS was even a required course in curriculums for computer science majors in Chinese universities. WPS dominates the Chinese word processing market and KINGSOFT becomes well-known because of WPS. Recognizing the trend of computer networking and the need of integrating multi-platform systems, TONGTECH positioned itself as a middleware manufacturer. Now it is the market leader in China's middleware market.

B. Products Outperform Services

SCSCs usually evolved from product companies that own intellectual property rights rather than service companies. All of the ten SCSCs started as product companies. UIFDA and KINGDEE started from finance management software products, KINGSOFT from office software products, TONGTECH from middleware products, and EXTECH and KMSOFT from PLM software products. NEUSOFT and China SOFTWARE & SERVICE provide both services and products. Yet, these two companies' business is primarily focused on software products.

C. Start Low

The typical road to success for SCSCs started from winning the middle or low end market. UFIDA's and KINGDEE's early finance management software was designed for small and medium enterprises. Even after they expanded to the ERP market, their ERP products were oriented toward SMEs. In contrast, international ERP vendors such as SAP are focused on the high end market from the right beginning. Two Chinese companies, CASE SOFTWARE and RIMABSOFTWARE, tried to provide enterprise solutions to the high end market, but both failed. KINGSOFT at first entered the low end personal software market. It then expanded into the high end market to serve governments and large enterprises after it improved product quality and achieved reputation from its experiences in the low end market. RISINGSOFT's and JIANGMIN's anti-virus software products also started from the low end personal market and later expanded into the high end market.

D. Founder Also Leader

The founders of the SCSCs have kept their leadership continuously and oversaw the critical strategic transformations, which ensured the companies to march toward their long-term goal without interruptions. The founders of UFIDA, KINGDEE, KINGSOFT, NEUSOFT, TONGTECH, EXTECH and JIANGMIN have been leading the companies since the companies' birth. They never lost control over their companies by equity transfer. Their faith, ambition and vision are driving forces of the companies' growth and innovation. UFIDA's goal is to become one of top 50 software providers of the world by 2010 and now it is the largest ISV of enterprise systems in Asia. KINGDEE's goal is to be the leading provider of enterprise systems in Asia by 2010. KINGSOFT's dream is that every computer in the world runs KINGSOFT software.

E. Stable Operations

The SCSCs maintained stable and robust business operations and avoided large fluctuations. UFIDA, KINGDEE, NEUSOFT, China Software & Service, RISINGSOFT, JIANGMIN, EXTECH, and TONGTECH never encountered a financial crisis. Their stable operations helped to retain core personnel and create virtuous cycles of human resource development, which contributed to the companies' success.

F. Focus on One Core Business

The SCSCs always focus on one core business, and achieve leadership in the segment market. No matter what their core business is, be it enterprise solution, anti-virus or middleware, they make this focus distinctly clear and never waste resources on non-core businesses. Thus, the SCSCs do not have broad product lines as MICROSOFT, ORACLE, and IBM have. They are more similar to SAP that specialized in a specific area.

In summary, the unique characteristics of SCSCs are related to the history of China's software industry, national economic development, and experiences and innovativeness of entrepreneurs.

V. Discussion

As our analysis reveals, SCSCs not only imitate international successful software companies in many ways, but also have their own unique characteristics. The basic path to success for Chinese software companies is to rely on a high quality product that fits the Chinese market to establish a broad customer base at first and then gradually upgrade the product and add new product lines, thus realizing the breakthrough from middle and low end markets to the high end market.

Strategic decision making proves to be critical for SCSCs to approach success. For example, since its early days UFIDA believed that finance management should be productized. While many peer companies proposed that each finance management project should be a customization, UFIDA stuck to its belief and grew from a two-person start-up to the largest enterprise solution provider in Asia which hires more than 6000 employees. UFIDA has made critical decisions on product development. From 1997 to 2001 UFIDA spent 30 million U.S dollars to develop Java-based ERP-NC for the high end ERP market, which enabled it to compete with SAP and ORACLE in China's high-end market of enterprise systems. KINGDEE's decision to develop China's first finance management software based on the Windows platform when DOS-based finance software was still popular helped the company achieve considerable competitive advantage. KINGDEE seized a large market share after releasing its advanced finance management software in 1992. TONGTECH strategically decided to transform from a system integrator to a middleware provider in 1992. To date, it is the No. one brand in China's middleware market and holds 30% of the market share. TONGTECH made another strategic decision in 2007 to move from a direct sales model to a distribution model, which is expected to boost its revenues remarkably. KINGSOFT was devoted to the WPS office software in the past two decades and made huge investments on product development. Its two significant investments on WPS optimization are noteworthy. First, Qiu Bojun sold his villa in 1996 for a quarter of a million dollars to develop WPS97 based on Windows. Second, KINSOFT spent five million dollars to develop WPS2005 in 2002. The professional version WPS is small (23MB) and compatible with a wide range of file formats. While it can realize all the functions of Microsoft office suite, its price is only a quarter of Microsoft office suite's price. It is known as the first brand of office software in China and beat Microsoft office many times in group purchases due to its high performance-to-price ratio.

SCSCs also have deficiencies in terms of international market exploration, platform dependency and selection, and low price. First, SCSCs are hardly seen in the international software market. A few exceptions include NEUSOFT and

CSS which provide outsourcing services to foreign clients, KINGSOFT which has sales offices and provides security software in Japan and Vietnam, and UFIDA which has sporadic international clients. As indicated in Aspray et al [1]'s report, China's software companies mainly provide outsourcing services to Japanese software companies. The majority of NEUSOFT's 83 million US dollars outsourcing service income are from the Japanese market. Overall, SCSCs generate very limited revenues from the international market. Second, Chinese software companies have been enslaved to infrastructural technologies such as operation systems, database systems, development tools, and web browsers. They lack control over these technologies, so their product design will likely be constrained by the technology providers. Third, the price of domestic software is relatively low in China. This might be due to China's traditional value systems that emphasize tangible wealth but underestimate intangible wealth such as information, knowledge, and software.

However, the providers of business software are bigger than others in the revenue and play more important role in influencing the China software industry. Based on the results of Olson & Zhao [9] and Soja [11], the future step is to explore the secrets of business software ISVs of China from the detailed products and multi-project implementations.

In conclusion, the SCSCs we studied suggest that if a software company wants to achieve success in China it must understand the Chinese context and develop products that fit Chinese companies' scale, demand, and level of software application.

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