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**A Case Study of Marketing Strategy
and Logistics System of Changhong,
a Chinese Home Appliances Enterprise**

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Abstract

The growing process of Changhong, a representative Chinese home appliance enterprise, is described in this paper. Changhong succeeded in transforming from a former state-run military-radar factory into China's leading consumer-electronics manufacturer. However it has been experiencing hardship since 1998 and reported significant losses in 2004. The success and failure of Changhong marketing strategy are expounded. This paper reports Changhong's recent efforts in strategy shift. It shows Changhong is attempting to integrate upstream and downstream resources, and trying to use logistics and supply chain management as competitive business weapons, faced with new challenges in the high-end products market.

Key words

Marketing strategy, Logistics system, Home appliances enterprise

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1 Brief introduction of Changhong corporation: from a military factory to a home appliances enterprise

Sichuan Changhong Electric Co., Ltd (abbr. Changhong) is headquartered in the city of Mianyang, a one-hour drive from Chengdu, the capital of Sichuan Province. It developed from the former Sichuan Radio Factory, a state-owned military factory, founded in 1958. The construction of the military factory was aided by the former Soviet Union, which was one of 156 key projects of New China's first five-year plan. The plant specialized in manufacturing airborne radar, oriented in military goods production.

The former Sichuan Radio Factory was renamed as Changhong Machinery Factory in 1965. Changhong factory started to develop and manufacture civilian products when military products demand began to decline in the middle of the 1970's. In 1972, the factory started to develop monochrome TV and took the lead in the pilot production of monochrome TV with "Changhong" brand in China defense industry in 1973. In 1974, Changhong factory started to develop color TV. But the production value of civilian products was always less than 20% during the five years (1973-1978)¹.

Changhong factory signed a technical collaboration agreement with Matsushita Electric Industrial Co. of Japan (abbr. Japan Matsushita) to cooperatively construct a color TV assembly line in Mianyang in 1979. The line was re-equipped and debugged in May, 1980 and put into production in Sep., 1980. Simultaneously, another monochrome TV production line was independently designed and installed by Changhong factory, which was also compatible to color television production. Thus, Changhong factory's TV yearly production capacity increased greatly and exceeded 10,000 in 1980.

In 1981, the product structures of Changhong factory had changed greatly. The production value of civilian products accounted for 80% for the first time². It was the symbol of Changhong's "military-to-civilian conversion".

The Changhong factory was firstly subordinated to the fourth Ministry of Mechanical Industry of China, then to the Ministry of Electronic Industry of China. It was then under the supervision of Sichuan province in 1985.

Ni Runfeng was appointed the Director of Changhong factory in 1985. In Aug., 1986, an automatic production line for color TV sets was introduced from Japan Matsushita. And then Changhong started the mass production for color TV. In 1986,

the TV yearly output jumped to 320,000 including 196,000 color TVs.

In Oct., 1987, Sichuan Changhong Electronic Holdings Co., Ltd. (abbr. Changhong Holdings) was established. Then the joint stock system transformation of state-owned Changhong was put on track. Sichuan Changhong Electric Co., Ltd was founded in 1988 with the parent company of Changhong Holdings. Changhong Holdings was supervised by the City of Mianyang since 1988, having transferred from Sichuan province.

In 1988, Changhong grew and developed into a large-scale, state-owned enterprise, with small batch production capacity of precise airborne radar, and mass production capacity of high quality TV. The TV yearly production capacity achieved 1,000,000 in 1988.

In 1994, Changhong became a public company with shares listed on the Shanghai Stock Exchange. Then Changhong was honored as the largest TV Manufacturer in China in 50th International Statistics Conference in 1995.

Changhong Color TV in the term of China market shares achieved 16.7% in 2004 so that Changhong color TV consecutively ranked the first on the list in the term of China market shares from 1990 to 2004³. Up to Dec., 2003, the global consumers for Changhong Color TV have exceeded 80,000,000⁴.

Now Changhong is one of the largest Chinese consumer electronics providers specializing in R&D, manufacturing and marketing consumer electronics products. In 2006, Changhong continues to be honored as the World's 500 Most Influential Brands (by World Brand Laboratory), with its total brand valued of RMB 43.755 billion.

At present, Changhong has branches and joint ventures with over 30,000 employees worldwide, and has more than 20,000 Sales and Service outlets available worldwide now.

2 Process of developing business in market and products

2.1 Process of spatial markets development

Changhong underwent spatial markets development from local market, to nation market, then to international market, as shown in figure 1.

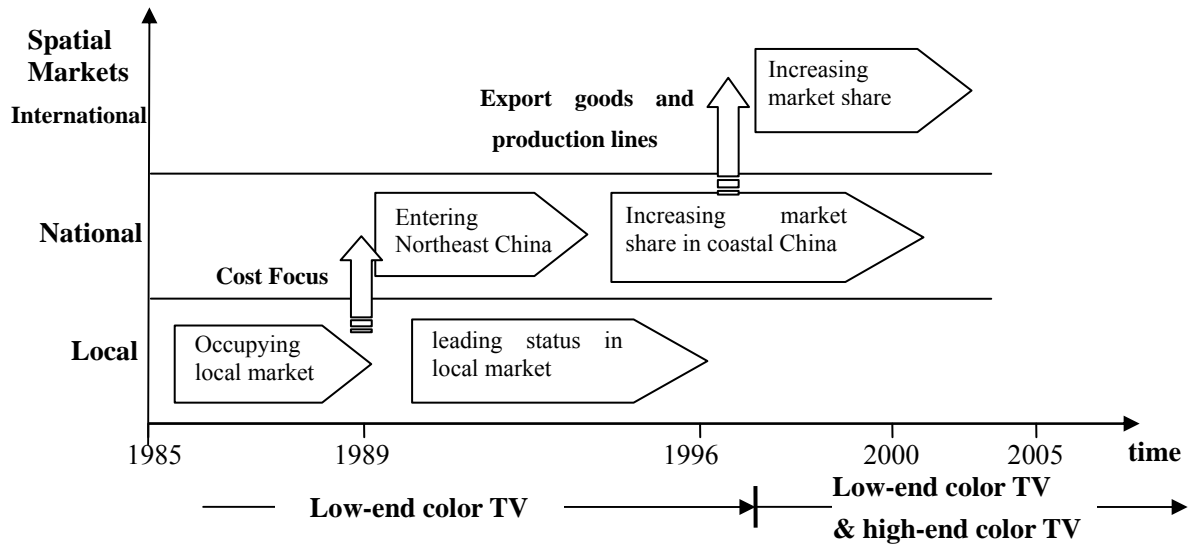


Figure1 Process of spatial markets development for Changhong

1. Local market

Changhong concentrated on the interior markets in Sichuan province and Southwest China during 1985-1988.

Changhong started mass production of color TVs since an automatic production line for color TV was introduced from Japan Matsushita in 1986. According to the actual situation and its own ability, Changhong adopted the “base strategy”: firstly occupying markets of Sichuan province, then Southwest China. The “base strategy” proved to be successful. As a result, Changhong grew rapidly and once took an above 90% share of Sichuan province market during 1985-1988. In a sense, Changhong also benefited from the special geography condition of Sichuan basin at that time.

2. National market

Located in Sichuan province, Changhong gradually marketed its color TV to all over China during 1989-1996, and started to compete with the domestic and foreign color TV manufacturers on the national scale. Finally Changhong gradually ranked first on the list of China market shares.

Many color TV production lines had been introduced from overseas to Chinese TV plants in the 1980’s, and China began to levy excise tax on color TVs in 1989. Hence, a lot of color TV products were stocked in many factories waiting to be sold in 1989. After getting the agreement from the Price Bureau of Sichuan province, Changhong reduced the price of each color TV by RMB 350 Yuan on August 9, 1989. The TVs stocked in Changhong therefore were rapidly sold out. After the first domestic color TV price war launched by Changhong in 1989, Changhong had succeeded in marketing its color TV to Northeast China rapidly, where technology

lagged behind central and coastal regions. Changhong won customers over with low return rates, solid quality control and excellent after-sales service.

Changhong color TV ranked the first on the list in the term of China market shares in 1990 (by China industrial Information issuing Center, 2004).It was the first time for Changhong to become a TV sales champion in China. When the yearly output of Changhong color TV exceeded 1 million in 1992, Changhong has become a significant enterprise in Chinese color TV manufacturing sector.

In 1993, a large screen color TV production line was completed and put into production in Changhong, which was independently designed and made by Changhong. And then a flagship product of Changhong known as “Red Sun”, 29-inch-screen color TV series product, was put into batch production in 1993. Thus, Changhong color TV succeeded in entering the Yangtze River Basin area and Southern China where many foreign companies are active because the 29-inch-screen color TV series product became the best seller at that time.

When Changhong color TV accumulative total output exceeded 10 million in 1995, Changhong was honored as the largest TV Manufacturer in China in 50th International Statistics Conference, 1995.

In 1996, the import customs duties on color TV in China dropped from 35% to 23% so that foreign color TV manufactures wanted to seize the chance to further increase their market shares in China. Before 1996, the foreign big screen color TV (especially bigger than 25-inch-screen color TV) had dominated Chinese market, especially big cities such as Beijing, Shanghai and so on. Facing the competition with the foreign companies, Changhong made a decision to launch the second price war, and utilized the slogan of “the same quality, the same technology” . Changhong reduced the color TV price by 18% in 1996. As a result, the sales volume of Changhong color TV exceeded 4,800,000 in 1996 and domestic market share rose from 22% in 1995 to 27% in 1996. In 1997, Changhong color TV took a 35% share of the overall domestic market.

After the second price war, Changhong color TV had become the sales champion in China and “Changhong ” had become the top brand in China color TV industry.

3. International market

From 1997 until now, Changhong has started to establish production bases in other provinces of China and other countries, and is stepping to expand overseas markets.

Before 1996, Changhong only had a production base in the headquarters of

Sichuan Mianyang. In Dec., 1996, Jinlin Changhong Electric Co., Ltd (abbr. Jinlin Changhong) was set up, invested together with Changchun Hongqiao Electric Factory. Jinlin Changhong engages in manufacturing TV, broadcast TV products etc.; In Oct., 1996, Jiangsu Changhong Television Co., Ltd (abbr. Jiangsu Changhong) was established, invested together with Nantong Sanyuan Industry Main Corporation. Jiangsu Changhong engages in manufacturing broadcast TV equipments; In Sep., 2003, Guangdong Changhong Electronics Co., Ltd (abbr. Guangdong Changhong) was founded, invested together with Zhongshan Industrial Development Co., Ltd. Now Guangdong Changhong plays an important role in Changhong, combined with research, production and sales together, whose products cover 6 fields including Digital TV, LCD(Liquid Crystal Display) TV, PDP(Plasma Display Panel) TV, rear-projection TV, Components and parts etc. Guangdong Changhong also becomes the Overseas Operation Center of Changhong. Based on Mianyang headquarters, Changhong has established Jinlin, Jiangsu, and Guangdong production bases in China. Thus, the Changhong umbrella layout of production base in China has come into being.

Since 1999 Changhong production lines for color TV and air conditioner were exported to Russia, Indonesia and Algeria in order to build an international brand image. A color TV production line and the first air conditioner production line were respectively set up in Russia in 1999 and 2001, introduced from Changhong. The first color TV production line and air conditioner production line were put into production in Indonesia respectively in 2000 and 2002, introduced from Changhong. By now local production in Indonesia for Changhong products has been put into practice. In Mar., 2003, SKD (Semi Knock Down) assembly production line for color TV exported from Changhong was put into production in Algeria.

Moreover, Changhong has started to export products directly or indirectly to foreign countries since 1998. But the process of overseas marketing is not smooth, especially in USA. There is a rapid growth in export trade and America became the biggest export country for Changhong within 2001-2002(see figure 2). Changhong color TV export volume reached 3,980,000 in 2002, up sharply from 120,000 of 2001. The export revenue accordingly jumped from RBM 776 million of 2001 to RBM 5541 million of 2002. But the payment in arrears from Apex Digital Inc. (abbr. APEX), an American main importer of Changhong, increased from US\$ 42 million of 2001 to US\$463 million of 2002. Moreover, in May 2003, Changhong color-TV suffered an anti-dumping accusation in USA⁵. In May, 2004, the United States

Department of Commerce of USA announced a 26.37% anti-dumping tax would be levied on Changhong color TVs exported to US⁶. In Dec., 2004, Changhong brought an accusation against APEX for huge debts in Los Angeles Supreme Court.

With the negative result of APEX dispute and anti-dumping investigation in US, Changhong export trade appeared a large scale drop since 2003, as shown in figure 2.

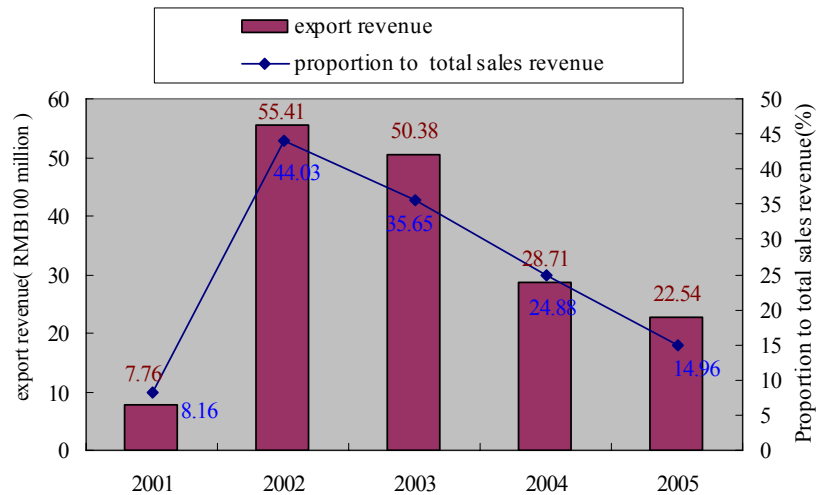


Figure 2 Changhong export revenue and its proportion to total sales revenue during 2001-2005

Sources: Based on 四川长虹股份有限公司（600839）2001-2005 年年度报告

Presently Changhong markets its products in more than 90 countries including Southeast Asia, Middle East, Europe, Australia, South America, and Commonwealth of Independent States (such as Russia, Ukraine, Kazakhstan) etc. Changhong has established overseas branches and representative offices in USA, Europe, Australia, Russia, Southeast Asia and Middle East.

On Dec.6, 2006, Changhong Czech production base was put into pilot production, which currently is the largest overseas plant of Changhong. Changhong announced the first phase project took a total of US\$100 million. There are five Flat-Panel TV production lines in 33,000 m² space with annual output expected to exceed one million units in the first phase. The products manufactured in the Czech production base will be all sold in the Czech Republic and other countries of Europe. It symbolizes an important new starting point of Changhong's internationalization strategy.

2.2 Process of business diversification

Changhong only devoted to manufacturing color TV for many years until it started the multiple operations in 1996, as shown in figure3.

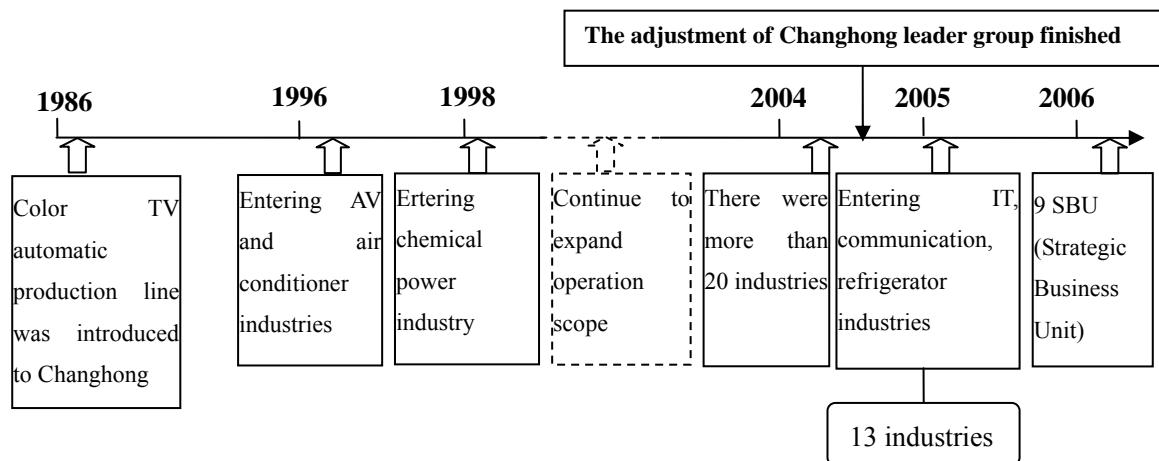


Figure 3 Process of Changhong business diversification

Resources: Created based on the information from 四川长虹股份有限公司（600839）年度报告 and Changhong website (<http://www.changhong.com.cn>)

In Dec., 1995, the first batch of Changhong VCD products was launched. In 1996, Changhong made progress towards the air conditioner industry. In December, 1996, Changhong air conditioner department and digital AV (Audio Video) department were established.

In Jul., 1997, Changhong purchased the former Sichuan Mianyang Five Continent Power factory. In Feb., 1998, Sichuan Changhong Battery Manufacturing Co., Ltd launched its business operation. It was the symbol of Changhong to enter the chemical power industry.

During 1998-2004, Changhong diversified their business continually. Up to 2004, Changhong businesses have involved nearly 20 fields, including digital color TV, rear-projection TV, digital panel display, air conditioner, AV, battery, digital components, digital network, commercial electronics, technical equipment, mold processing, packing, plastic, computer games, safety & security products etc. Changhong viewed air conditioner, AV and battery as the prime business besides color TV before 2004. But Changhong has made little progress in air conditioner business since 1996, and is unable to take advantage of economies of scale in AV and battery businesses because of their low revenues (see table1). During 2000-2005, Changhong color TV, air conditioner, AV and battery's revenues and their proportion to prime operating revenue (POR) is reported in table 1.

On July 17, 2004, Changhong announced that Ni Rufeng, who had been the leader in Changhong for 19 years, would resign his positions in Changhong and Changhong Holdings, and Zhao Yong would serve as the Chairmen of Changhong and Changhong Holdings. Thus at the end of 2004, Changhong announced to make a

breakthrough in three adjustment dimensions from a traditional household appliances enterprise (see figure 4).

(1) In the industry value chain dimension, Changhong will participate in manufacturing critical components and software in the upstream field.

(2) In the industry structure dimension, Changhong will shift to Information Appliances (IA) and Information Technology (IT) products.

(3) In the commercial mode dimension, Changhong will step to enter the fields of Content Provider (CP) and SP (Service Provider).

Table 1 2000–2005 Changhong color TV, air conditioner, AV and battery’s revenues and theirs percentage of prime operating revenue (POR) unit: RMB 100million

time	POR		POR		POR		POR	
	color TV	Percentage (%)	air conditioner	Percentage (%)	AV	Percentage (%)	battery	Percentage (%)
2000	88.22	82.39	16.83	15.72	0.76	0.71	0.37	0.35
2001	71.04	74.67	16.07	16.89	4.58	4.81	0.47	3.31
2002	94.65	75.21	14.55	11.56	-	-	-	-
2003	111.11	78.62	11.39	8.06	-	-	-	-
2004	85.91	74.45	15.01	13.01	-	-	-	-
2005	99.33	65.95	19.01	12.62	-	-	-	-

Sources: based on data from 四川长虹股份有限公司（600839）2000 年年度报告摘要, 2001-2005 年年度报告

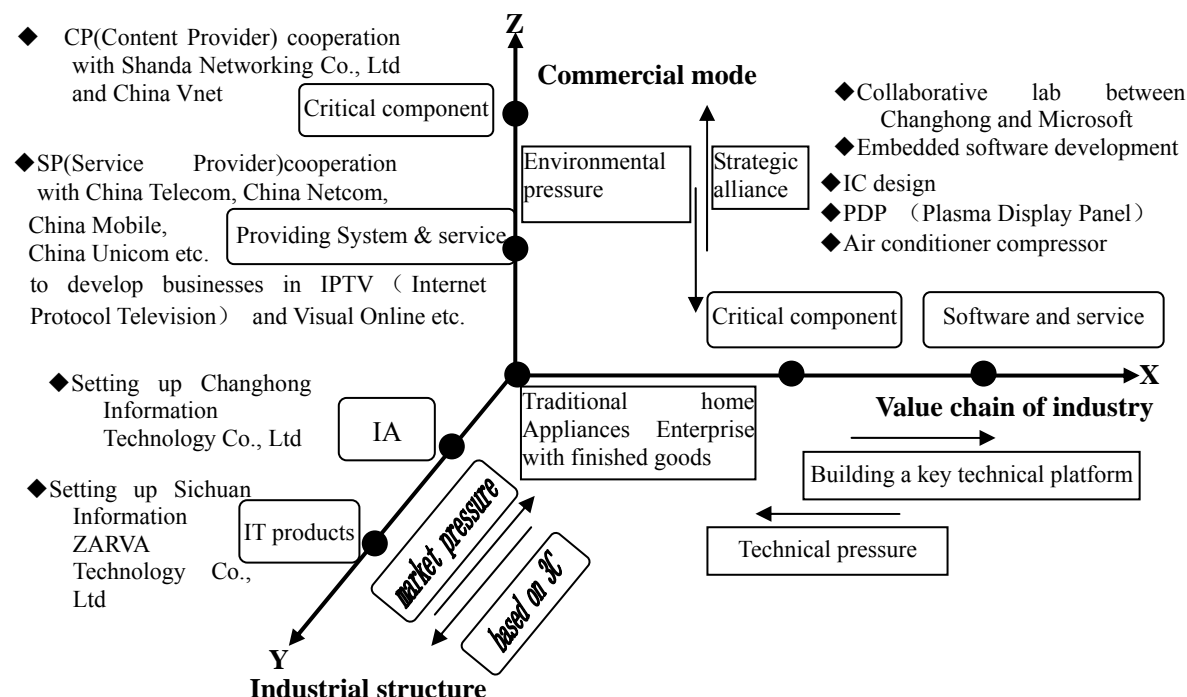


Figure 4 the adjustment dimensions of Changhong operation business

Source: Changhong website: www.changhong.com.cn, accessed on 2006.10.24

Now Changhong divides its prime business into core business, strategic business, and new business. The color TV will still be Changhong's core business, with the intention of reducing its proportion of total business gradually. The air conditioner, refrigerator, and battery are regarded as the strategic business, which will be the new forces following the core business; the new business is Information Appliances represented by IT, network and communication products with characteristics of high growth potential. Now Changhong has stated that it is stepping to enter IA, the future development direction, aiming at shifting to 3C (Computer, Communication, Consumer Electrics) industry.

Since 2004, several new holding companies of Changhong have been established, which engage in the new business of Changhong(see table 2). These new companies play core roles in IT field of Changhong new businesses.

In Apr. 2005, Changhong announced that Mianyang A'hong Communication & Digital Information Group Co., Ltd (abbr. A'hong Communication Co.) was established(see table 2). And then on Sep., 23, 2005, Changhong mobile license for GSM and CDMA got the approval of National Development and Reform Commission of PRC. It symbolizes Changhong has entered communication service.

In Nov., 2005, Changhong became the largest shareholder of Hefei Meiling Co., Ltd., one of primary refrigerator manufacturers in China. It is the symbol of Changhong entering the business of white goods.

Table 2 the new holding companies of Changhong that engage in the new business

Name	Establishing Time	Major product or service	Proportion of Share held Changhong
Sichuan ZARVA IT Product Co., Ltd.	2004.10	Software, hardware, and fittings of computer	56.67%
Changhong IT Co., Ltd	2005.4	Software and hardware products related to computer, communication, and home appliances(3C)	99.50%
Mianyang A'hong Communication & Digital Information Group Co., Ltd	2005.4	Communication terminal, mobile products and consumer electronic products	45.00%
Sichuan Changhong Network Science & Technology Co., Ltd	2005.5	Set top-box of digital TV, digital ground satellite receiving facilities	80.00%
Sichuan Panovasic Technology Co., Ltd	2005.7	integrate circuit and software related to computer, communication, and home appliances(3C)	70.00%

Note: Sichuan Changhong Zhaohua Information Technology Product Co., Ltd. was renamed as Sichuan ZARVA IT Product Co., Ltd. in Feb., 2006

Source: the mid- term report of 2006 year issued by Changhong.

In contrast to establishing some new holding companies, Changhong has set up some jointly operated companies in related service fields since 2004(see table 3).

Table 3 the new jointly operated companies of Changhong

Name	Establishing Time	Major product or service	Proportion of participating in shares by Changhong
Mianyang Changxin Advanced Materials Development Co., Ltd.	2004.10	Design, R & D, technical service, sale and manufacture of plastic and chemical material	35.00%
Mianyang Hongren Electronic Co., Ltd.	2004.12	R & D, sale and production Electronic linker, power cable, electronic component; sale of electronic products	35.00%
Sichuan Jinghong Packaging Products Co., Ltd.	2005.9	Production of packaging cushioning material	35.00%
Sichuan Changxin Refrigeration Components Co., Ltd.	2005.10	Sale and manufacture of fittings and components of air conditioner compressor	35.00%
Sichuan Changhe Science & Technology Co., Ltd.	2005.8	Sale and production of rubber products and rubber mould	35.00%
Shenzhen Julong Optoelectronic Co., Ltd.	2006.1	Design, R & D, sale and production of LCD (Liquid Crystal Display)	10.00%

Source: the mid-term report of 2006 year issued by Changhong.

After a series of adjustment measures, in 2005, there are 13 industries in Changhong, including color TV, digital flat-panel display TV, air conditioner, parts of apparatus, packing, plastic, components, technical equipment, AV, network, battery, mold processing, and electronic engineering.

In Oct., 2006, Changhong announced to divide its operation businesses into 9 Strategic Business Units (9 SBU), including Multimedia, White Electronic Appliance, Overseas Business, Components and Parts, IT, Service, Real Estate, New Energy, and New Business.

According to the third quarter report of 2006 released by Changhong, the revenue of Black Electronic Appliance business in Changhong represented by color TV reached RMB 5.960 billion Yuan during Jan. to Sept., 2006, accounting for 48.84% of prime operating revenues (POR). It's the first time for brown goods (TVs and so on) accounting for less than 50% in Changhong history. The revenue of white goods, IT products, and mobile phone business respectively achieved RMB 2.446 billion Yuan, RMB 2.026 billion Yuan, and 0.999 billion Yuan, accounting for 20.04%, 13.45% and 8.19% of POR during Jan. to Sept., 2006.

The statistics indicates that there is a rapid growth in white goods and New Business represented by IT and communication products, resulting from the restructuring since Jul., 2004.

3 Management strategy shift: From economy of scale to core competence

3.1 Changhong's success and failure

1. 1985-1988: initial period

Changhong started the mass production of color TV since inducing an automatic line for color TV production from Japan Matsushita. In 1986, Changhong TV yearly output jumped to 320,000 including 196,000 color TVs.

In 1988, Changhong launched 21-inch-screen color TVs onto the market which soon became the best selling item. Changhong therefore obtained remarkable profits by raising price to meet the increasing market demand.

2. 1989-1997 year: The rapid growth period, becoming the largest color TV manufacturer in China

After the two famous price wars in 1989 and 1996 launched by Changhong, Changhong has succeeded in entering other provinces of China, and established the leading position in Chinese color TV manufacturing sector.

In 1995, Changhong Home Appliance City laid a foundation in Mianyang High-tech Industry Develop District, and Changhong was honored as the largest TV Manufacturer in China in 50th International Statistics Conference.

Changhong developed at a remarkable pace during 1994-1997. Its sales amount and net profit rose sharply during the period, and Changhong reached its historic highest point of Prime Operating Revenue (POR) and net profit in 1997(see table 4 and figure 5).

3. 1998-2004 year: profit decline, and huge losses in 2004

1998 year is considered as the turning point in Changhong development process. In 1998, Ni Runfeng, the director of Changhong, made a serious mistake in choosing competitive method in 1998. Changhong signed a monopoly supply agreement with China eight big Color Picture Tube (CPT) plants in 1998 to purchase about 3 million domestic CPTs including 76% 21-inch, 63% 25-inch, almost all 29-inch and larger than 29-inch CPTs of total domestic CPTs. Changhong managed to monopolize domestic CPTs in order to drive other indigenous color TV manufacturers out of business. In order to survive, other color TV manufacturers adopted two countermeasures⁷:

First, they attempted to legalize the massive smuggling CPTs stored illegally in Guangdong, by seeking support from the Ministry of Information Industrial of PRC, Ministry of Foreign Trade and Economic Cooperation, PRC;

Second, they secretly purchased the CPTs stored in the eight CPT plants, which already belonged to Changhong.

In addition, Sony launched the pure flat color TV in 1999, followed by the domestic color TV manufacturers. Therefore the demand of traditional CPT withered.

Finally Changhong plan of monopoly supply CPT failed thoroughly for these reasons above.

Table 4 1994–2006 financial index of Changhong

time	Prime Operating Revenue (RMB 100 million)	Net profit (RMB 100 million)	Return on Equity %	Earnings per share (RMB Yuan)	Net cash flow from operating activities per share(RMBYuan)
1994	42.74	7.07	48.13	2.97	-
1995	67.64	11.51	37.70	2.28	-
1996	105.88	16.75	33.98	2.07	-
1997	156.73	26.12	29.11	1.71	-
1998	116.03	17.43	16.31	0.876	1.099
1999	99.17	3.86	3.08	0.178	1.401
2000	107.07	1.14	0.90	0.053	1.05
2001	95.15	0.84	0.66	0.039	0.63
2002	125.85	1.76	1.36	0.081	-1.37
2003	141.33	2.06	1.57	0.095	-0.34
2004	115.39	-36.81	-38.93	-1.701	0.35
2005	150.61	2.85	2.91	0.132	0.66
2006(Jan.-Sept.)	122.04	2.21	-	-	-

sources: 四川长虹股份有限公司（600839）1995-2000 年年度报告摘要，2001-2005 年年度报告，2006 年第三季度报告。

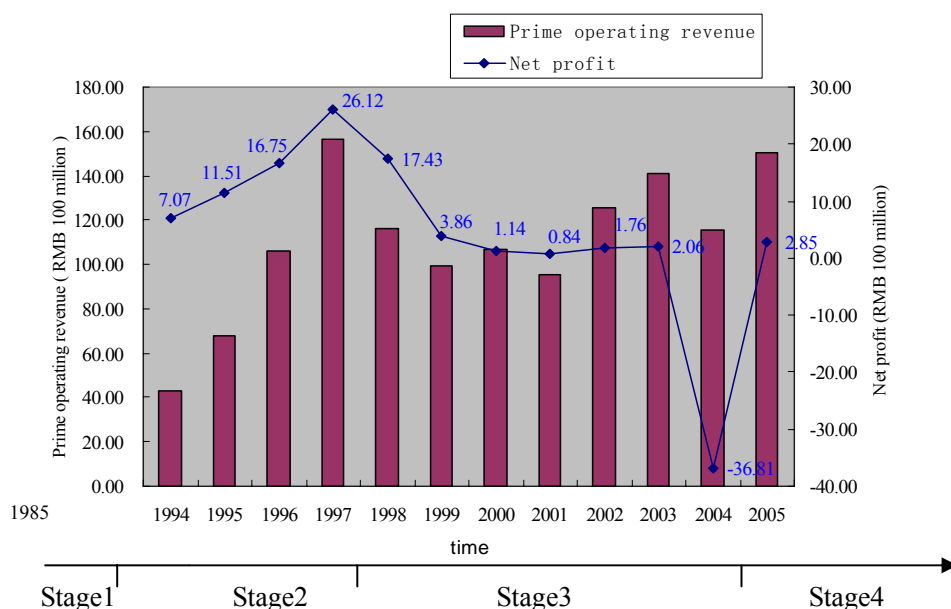


Figure 5 1994–2005 MOR and net profit of Changhong

sources: Created based on the data from 四川长虹股份有限公司（600839）1995-2000 年年度报告摘要，2001-2005 年年度报告。

With the negative result of 1998 CPT campaign, Changhong account payable and notes payable rose from RMB 3.55 billion at the beginning of 1998 year to RMB 6.19 billion at the end of 1998 year, by a form of straight line. The inventory rose from RMB 3.55 billion at the beginning of 1998 year to RMB 7.71 billion at the end of 1998 year, up 116.78%.

Consequently Changhong net profit dropped from 1.743 billion RMB of 1998 to 0.386 billion RMB of 1999, only with the Return on Equity (ROE) of 3.08 % (see table 4 and figure 5).

There was a sequential drop during 1998-2001(see table 4 and figure 5). The Sales Gross Profit Margin (SGPM) of color TV, the core business in Changhong, also kept declining in a form of line during 1998-2001. In 2001, the SGPM of color TV fell to the lowest point, with the SGPM of 10% (see figure 6). The several reasons why Changhong profits and color TV SGPM decline during 1998-2001 are described as follows:

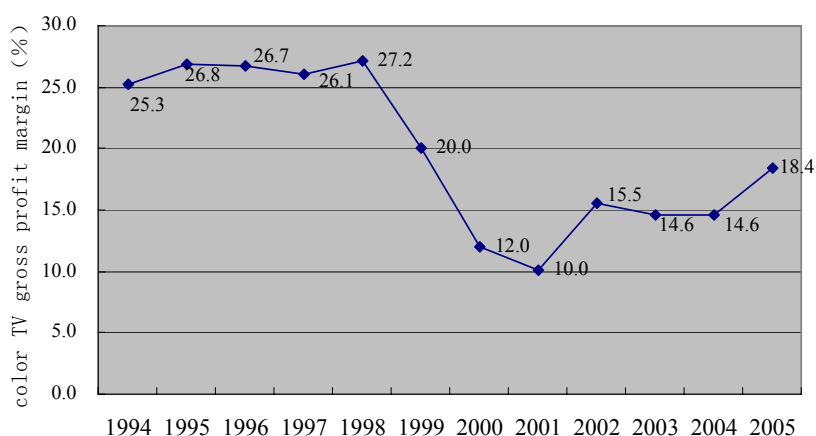


Figure 6 1994–2005 gross profit margin of Changhong color TV

Sources: Created based on the data from 四川长虹股份有限公司（600839）1995-2000 年年度报告摘要，2001-2005 年年度报告

First, since 1998, there was an intensified competition in the domestic market, and ordinary color TV's price dropped further. Hence, the Sales Gross Profit Margin (SGPM) of Changhong color TV keeps declining during 1998-2001.

Secondly since 1999, color TV technology is turning to a new generation around the world, from ordinary color TV represented by CRT (Cathode Ray Tube) TV to Flat Panel Display (FPD) TV represented by Plasma Display Panel (PDP) TV, Liquid Crystal Display (LCD) TV, and rear-projection TV; from analogue TV to digital TV. With the China's accession to the WTO in 2001, foreign color TV manufacturers sped up the indigenization steps in China by increasing investment in China. Thus, the

advantages in terms of channel and cost, which indigenous companies are proud of, play no significant role in big cities. Some foreign manufacturers such as Sony, Matsushita, Sharp, LG, Samsung, Phillips etc., advance ahead of indigenous companies in the color TV structuring due to their advantages in core technology.

Due to the failure CPT campaign of 1998 consumed huge amount of investment, the development pace of Changhong was behind other indigenous color TV manufacturers and foreign companies during 1998-2000.

Moreover, one misfortune came on the neck of another. Zhengzhou Baiwen Co., Ltd (abbr. Zhengzhou Baiwen), an important wholesaler of Changhong, posted significant losses in 1998. With the negative result of Zhengzhou Baiwen event, Changhong operating expense increased by 25.4%, however simultaneously prime operating revenue decreased by 14.94% in 1999, compared with 1998.

Figure 5 indicates that there was a slight improvement within 2001 to 2003. It mainly resulted from the promotion of export trade (see figure 2). As shown in figure 6, the SGPM of Changhong color TV also increased from 10.0% of 2000 to 15.5% of 2001. It suggests that Changhong has found some chances in high-end color TV, which has a higher profit margin than low-end color TV. On the 8th of December 2000, a PDP color TV production line was put into production in Changhong. In Feb., 2001, Changhong launched the High-Definition rear-projection TV, which has become the current knockout product. In Jul., 2002, the 30-inch-screen LCD, the biggest screen in China, was manufactured in Changhong. In a sense, Changhong's knockout product, the rear-projection TV, became the main driving force for the growth of the SGPM of Changhong color TV.

In 2004, Changhong plunged into the huge international debt dispute with APEX. According to the annual report of 2004, Changhong posted RMB 3.681 billion Yuan in loss for 2004, with earnings per share of negative RMB 1.701 Yuan. It is the first time for Changhong to be a loss-making company since it has become a listed company and publicly issued stocks in 1994.

The main reasons for the loss were reported in the annual report of 2004:

First, up to December 31, 2004, there was the account receivable of US\$ 463.81 million which should have been paid by APEX. Based on Specific Identification, US\$ 313.81 million (RMB 2.59 billion) should be withdrawn as bad debts reserve. In fact, RMB 2.50 billion had been withdrawn as bad debts reserves in 2004, which was reckoned in 2004 administration expense.

Second, RMB 1.01 billion was withdrawn as inventory falling price reserves

according to the present accounting policy, which was also reckoned in 2004 administration expense.

Due to the huge administration expense in 2004, Changhong plunged into money-losing status.

4. from 2005 year up to present: reform, net profit recovers by “V curve”

Changhong announced to turn loss into profit in the first quarter report of 2005. In 2005 Changhong achieved the MOR of RMB 15.06 billion and the net profit of RMB 285 million, up 30.53% and 107.74% compared with last year. The earning per share is RMB 0.132 Yuan in the reporting period of 2005. Within Jan. to Sep., 2006, Changhong achieved the MOR of RMB 12.20 billion, the net profit of RMB 274 million, up 19.22% and 0.89% compared with last year (see table 4 and figure 5).

The reasons for Changhong net profit to recover by the “V curve” (shown in figure 5) are analyzed as follows:

Although Changhong announced that it is profitable during 2001 to 2003, actually Changhong had already laid down the money-losing foreshadowing since 2001.

In 2001, the color TV industry appeared an overall landslide in China⁸. Changhong achieved the net profit of RMB 84 million in 2001⁹. Nevertheless the net profit was RMB -58.06 million if deducting non-recurring profit and loss. It indicates that the so-called profitability in 2001 was actually offset by earnings from the non-recurring profit and loss. According to the annual report of 2001, the connected transaction between Changhong and its parent company (Changhong Holdings) played a significant role in the non-recurring profit and loss. The connected transaction included selling assets to parent company, charging parent company for loan service-fee, parent company paying some advertising fee for Changhong and so on.

In 2002, Changhong achieved the net profit of RMB 176 million. But net cash flow from operation activities dropped from RMB 1.373 billion Yuan in 2001 to RMB negative 2.974 billion Yuan in 2002, and the net cash flow from operation activities per share decreased from RMB 0.63 Yuan in 2001 to RMB -1.37 Yuan in 2002(see table 4). This indicated that the profit ability was weak because of the negative net cash flow per share¹⁰. In 2002 Changhong MOR achieved RMB 12.585 billion Yuan, in which export revenue was RMB 5.541 billion Yuan, accounting for 44.03% (see figure 2). Compared with 2001 fiscal year, the export revenue of 2002 rose by over 600%. The data indicated that Changhong export business played an important role in

the growth of operation achievement of 2002. Meanwhile Changhong account receivable from APEX increased from US\$ 42 million in 2001 to US\$463 million in 2002(see table 5), accounting for 90.75% of total account receivable amount in 2002. This became the potential danger for money-losing in the future.

In 2003, Changhong suffered the anti-dumping investigation in USA so that export trade in USA appeared a large scale drop since 2003(see figure 2). On the other hand, the account receivable kept rising (see table 5).

Table 5 2001–2004 the trade and balance of account receivable between Changhong and Apex Digial Inc. (APEX) unit: \$ 100 million

time	Sales amount	Cash back	the balance of account receivable
2001.12	-	-	0.42
2002	6.11	1.90	4.63
2003	4.24	3.50	5.37
2004	3.56	1.09	4.64

Resource: 四川长虹股份有限公司（600839）2004 年年度报告

In May, 2004, the Department of Commerce of USA announced a 26.37% anti-dumping tax would be levied on Changhong color TVs exported to the US. In Dec., 2004, Changhong brought an accusation against APEX for huge debts in Los Angeles Supreme Court of USA.

A wind of change blew with the coming of Mr. Zhao’s chairmanship. According to the annual report of 2004 released by Changhong on April 16, 2005, Changhong announced that RMB 2.50 billion was withdrawn as bad debts reserves and RMB 1.01 billion was withdrawn as inventory falling price reserves, which was reckoned in 2004 administration expense. Therefore there was RMB 3.681 billion Yuan in loss for 2004. In fact, this was already a foreseeable result.

According to the annual report of 2005, Changhong administration expense dropped from RMB 4.021 billion of 2004 to RMB 0.34 billion of 2005, down 91.59%. Hence, at a new beginning point, Changhong has turned a loss into profit in 2005 due to the sharp fall in administration expense.

3.2 Different management ideas of the two generation managers

On July 17, 2004, the adjustment of the new leader group was finished. Changhong announced that Ni Runfeng would not serve as the directors of Sichuan Changhong and Changhong Holdings and Zhao Yong would serve as the Chairmen of

Changhong and Changhong Holdings.

The two generation managers have different management ideas.

1. Ni Runfeng phase

Ni Runfeng was born in Jinzhou of Liaoning province in 1944 with his ancestral home in Shandong Province. In 1968, Ni graduated from the former Dalian Technology School (now Dalian University of Technology), majoring in mechanism structure. He was then assigned to the former state-owned Changhong Machinery Factory. Ni successively acted as the technician, assistant engineer, engineer, the vice director of the 2nd Research Institute of Changhong, the vice factory director of Changhong Machinery Factory. In 1985, 41 year-old Ni Runfeng was appointed the Factory Director of Changhong Machinery Factory. In the same year, Changhong introduced the automatic color TV production line from Japan, and stepped onto the way to color TV manufacturing. In June, 1988, Sichuan Changhong Electric Co., Ltd was founded, and Ni was appointed the chairman and the General Manager.

On June 3rd, 1998, Ni Runfeng won the 3rd Nikkei Asia Prizes, becoming the first man to win the prize in the Asian business community. They appraised him like this: Ni Runfeng transformed a faltering state-run manufacturer of military radar equipment into China's top television manufacturer by focusing on quality and after-sales service¹¹.

Located far inland before 1996, Changhong was far away from raw materials, the spare parts and components, and was also far from high-end consumer market. Therefore the production cost and logistics cost of Changhong were higher than other enterprises, such as enterprises located in Guangdong province(TCL, Kanka, Skyworth) and enterprises located in Shandong province(Hisense, Haier). The most leading-edge color TV manufacturers in China are situated along the coast except Changhong. Thus, Ni managed to create a cost advantage, resulting from economies of scale. Changhong therefore, continuously expanded manufacturing scale and became the biggest color TV manufacturer in China. In addition, Ni adopted the “base strategy” and “one child strategy”: centralizing resources to focus on manufacturing color TV, and firstly occupying markets of Sichuan province and Southwest China, then expanding to other provinces of China. The strategy proved to be successful. As a result, Changhong grew rapidly since 1985.

After Changhong became the biggest color TV manufacturer in China in 1995, Changhong started to diversify its business. Ni managed to set up a big enterprise with the ability of providing for oneself. The business goal was to generate “the

aircraft carrier” enterprise, namely “large and complete” enterprise. During the Ni Runfeng time, the scope of multiple operations in Changhong was therefore very broad (see the discussion in 2.2).

Ni always initiated the scale and the price as the competition method. Changhong relied on the advantage of the fund and scale to win in the competition. According to the statistic data of Ministry of Information Industry of PRC, there were more than 200 color TV factories in China in 1989 when Changhong launched the 1st price war. There were only about 70 color TV factories and the top 6 players have increased their market share from 35% in 1994 to nearly 70% in 1999(see figure 7). In 2006 there are only 13 core enterprises in China color TV manufacturing sector: TCL, Changhong, Kanka, Skyworth, Hisense, Haier, Prima, SVA, Panda, Shinco, Malata, West Lake, and Amoi (from Ministry of Information Industry of PRC, 2006).

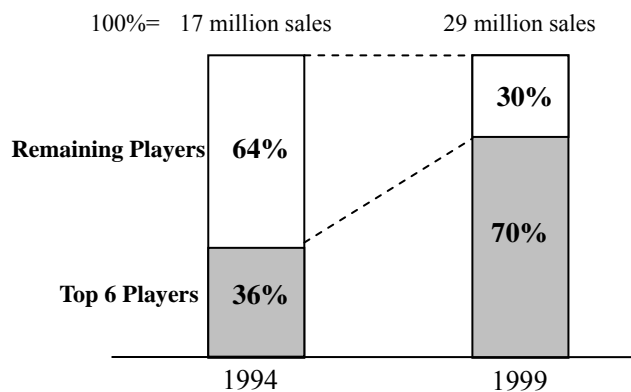


Figure 7 increase in color TV’s market share by leading player

Source: Staffan Hertzell, China’s evolving logistics landscape, McKincey & Company, Greater China Office, 2001.8.30.

Moreover in Ni Runfeng time, the supply chain of Changhong was a typical push (or make-to-stock (MTS)) system. As a result, a mass of inventories (including raw materials and the finish products) were held in Changhong warehouses (see figure 8). This was shown to be a problem, when Ni made the serious mistake to launch the famous CPTs campaign in 1998, the inventory in Changhong rose sharply, as shown in figure 8.

Before 1998, the demand exceeds supply in Chinese color TV market as a whole. Therefore at that time, a pull system might have been appropriate. However, when the low-end color televisions became high homogeneity, the peak season for ordinary color TV came to an end around China after 1998. In addition, Changhong, the big color TV manufacturer, fell behind other indigenous companies in marketing system. Hence Changhong began to experience a growth limit since 1998.

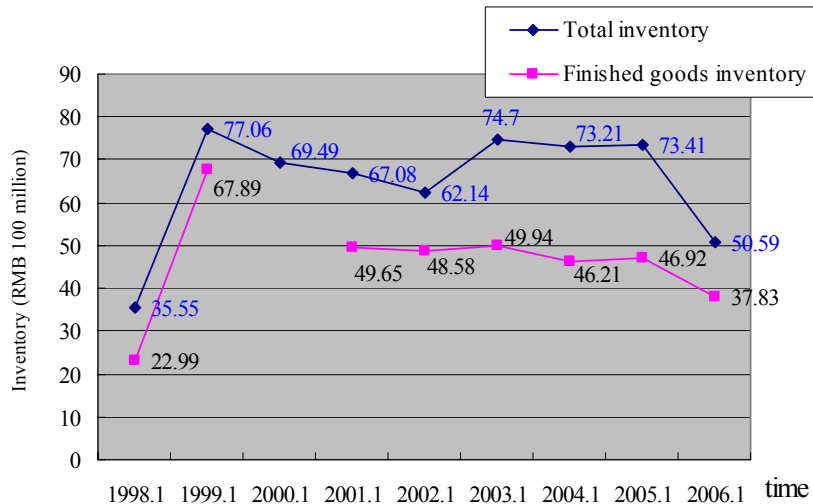


Figure 8 the inventory in Changhong at the beginning of 1998–2006 year

Sources: Created based on the data from 四川长虹股份有限公司（600839）1998-2000 年年度报告摘要，2006 年中期报告。

2. Zhao Yong Phase

Zhao Yong was born in Jun., 1963. He graduated from Tsinghua University in 1991, and gained PhD in pressure machining specialty. Prior to Changhong, Zhao was a teacher in the school of mechanical engineering of Tsinghua University. In Changhong, he had acted as vice-chief engineer, chief engineer, and vice director.

In Jun., 2000, Zhao Yong was named the general manager of Changhong, while Ni Runfeng resigned his position as the general manager, only serving as the chairman of Changhong and Changhong Holdings. But just after 8 months, in Feb., 2001, Changhong announced an adjustment for the organization again. Ni was appointed CEO, and Zhao Yong was appointed the executive president. Then in May, 2001, Zhao resigned his position in Changhong, and then served as deputy mayor of Mianyang People's Government.

In July, 2004, Changhong announced that Ni Runfeng would not serve as head of Changhong and Changhong Holdings, and 41 year old Zhao Yong would serve as the Chairman, vice secretary of Changhong and Changhong Holdings, and the general manager of Changhong Holdings. Presently, Zhao Yong acts as the Chairman and secretary of Changhong and Changhong Holdings.

After Zhao was appointed the leader of Changhong, a mobilization meeting for management strategy reform was held on Aug., 16th, 2004. As well as a Leading Work Group for advancing reform was set up with the group leader of Zhao Yong. On Aug., 26th, 2004, Changhong invited Roland Berger Strategy Consultants, a famous European consultant firm, to train its middle managers in order to retrain them in the

strategy shift. From then, the biggest reform in Changhong history has begun.

Zhao proposed to transform Changhong from scale-orientated enterprise to technology-orientated one. In 2004, Changhong announced it was making a breakthrough in three adjustment dimensions (see the discussion in 2.2). Zhao stated to regard technology innovation as the core strategy of Changhong with its competitive advantages at present and in the future. Changhong took out RMB 5 million to award the near 200 technology innovation experts at the 2004 Technology Innovation Conference. And it also promised to increase the award in the later years. Guided by the tech idea, Technological Center was set up again in headquarters, and Industrial Design Center was reinforced in 2005. Furthermore, Changhong proposed to pay more attention to introduce, train and reserve technical personnel.

There are 2 key issues in this biggest reform. First, there is the management strategy shift, transferred from scale-oriented to profit-oriented. It is said that Zhao hasn't managed to make Changhong become the sales champion of flat-panel TV in China. He proposed Changhong would become the first profitable flat-panel TV manufacturer in indigenous companies. Second, there is a big change in organization structure. Zhao proposed to transform Changhong from an "aircraft carrier" to a "combined fleet". He tried to change the original centralization pattern by transferring the power of Changhong headquarters to the different industrial companies. The new organization structure based on different businesses is being built (see the discussion in 3.5). The relevant service departments and sub-companies will be formed according to the different technology and market characteristics of different products. And the general managers of different businesses will have the power over production and marketing.

Moreover, Zhao claimed to shift the supply chain of Changhong from a push (or make-to-stock (MTS)) system to a pull system (or make-to-order (MTO)). In a MTO system, end-user orders are collected by salesmen and then transmitted to manufacturers who in turn order the required components and semi-finished products from their suppliers. But product and information flows cannot move instantaneously through the present supply channel of Changhong. First, freight transportation between raw material sources, production plants and consumption sites is usually time-consuming. Changhong has to hold high level inventories (including raw materials, semi-finished products, and finished products) in warehouses in order to overcome inefficiencies in managing the logistics system.

Zhao has taken actions to reduce the inventory in order to minimize total

operating cost. He proposed a “marketing plan in 90 days” to reduce the inventory since Sept., 2004. According to the new plan, the production and marketing plan need be determined in 90 days, unlike a year before. The new plan increases the marketing efficiency and might put forward a more accurate production plan based on market demand. Moreover, Changhong asked the sales sub-companies to implement a clearance sale. Nevertheless, as a result, these sub-companies had to reduce their employee’s salary in order to lowering the loss.

These measures had brought tangible effects in 2005. At the end of 2005, the inventory reduced to RMB 5.06 billion Yuan, including the finished goods of RMB 3.78 billion Yuan (see figure 8). The finished goods inventory in Changhong has never been less than RMB 4 billion Yuan since 1998.

In addition, information in Changhong supply channel flows slowly because order collection, transmission and processing in Changhong take long time. Changhong lacks in information technology to manage its inventory. Zhao has taken some measures to reform the logistics system and information system in order to support time-based competition (see the discussion in 4.1, 4.2, and 4.3).

Zhao proposed to reinforce Changhong core competence by cultivating key technological innovation, system integration innovation and business mode innovation.

3.3 Marketing strategy

1. Distribution channel

The development process of Changhong distribution channel is analyzed as follows:

(1) Stage 1: 1985-1989

During the first stage, there is strong demand but limited supply in overall China market. Changhong devoted to expanding production capacity when demand exceeded supply in Chinese market. The distribution channel can be described as:

Manufacturer → state-owned distribution company → retailer → end user

Due to the constraints of a planned economy at that time, these state-owned distribution companies, such as Supply and Marketing Cooperatives, hardware and electrical appliances Co., operated in limited, local distribution areas. Simultaneously Changhong color TV mainly sold only in Sichuan province and southwestern China.

(2) Stage 2: 1990-1998

Changhong developed at a remarkable pace with fast-growing production

capacity in 1990-1997. In stage 2, Changhong primarily depended on a few large wholesalers when marketing its products around China.

The distribution channel can be depicted as:

Manufacturer → huge Wholesaler → Retailer → End user

Manufacturer → huge Wholesaler → the secondary distributor → Retailer → End user

Advantage: Manufacturers can utilize the sales network and other recourses of these huge wholesalers to distribute products rapidly in large quantities, resulting in low sales cost and simple management mode. And manufacturers can engaged primarily in production with the rapid capital turnover

Weakness: Manufacturers only contact with the huge wholesalers and send goods to a distributor with no real idea which customers those goods eventually reached. Manufacturers lack ability to respond to a changing marketplace. And there is also high channel risk due to excessively relying on the huge wholesalers.

For instance, in 1996, Changhong developed a solid working relationship with the former Zhengzhou Baiwen Co., Ltd (Zhengzhou Baiwen), one of the top ten huge wholesalers in China that time. Zhengzhou Baiwen purchased large quantities of Changhong color TVs by bank acceptance draft then in turn either sold the goods to multi-outlet retailers or to other groups of smaller distributors, who deliver the goods to local stores and retailers. In 1997, Zhengzhou Baiwen even gained the exclusive distribution rights of two production lines products in China for 2 months, including the most popular products of 21-inch-screen and 25-inch-screen color TVs. It was reported that the color TV sales amount in Zhengzhou Baiwen accounted for more than 30% of Changhong gross income in 1996 and 1997. In a word, Changhong still excessively counted on the huge wholesalers in the late period of stage 2.

In fact, there was already a “time bomb” in the channel system in 1996 because Changhong failed in modifying its channel system over time when the original distribution channels were not working as planned.

Firstly, many problems occurred in the cooperation between changhong and its main wholesalers. For example, after becoming the prime distributors of Changhong color TVs, Zhengzhou Baiwen was less positive in constructing distribution channel and network, sales promotion, after-sales service than before. Moreover, Zhengzhou Baiwen was out of control of Changhong in many issues. In May, 1998, Changhong had to terminate the cooperation until Zhengzhou Baiwen reported significant losses.

Secondly, Changhong failed to deal with the channel conflict. For example, in Mar., 1998, 7 department stores in the city of Ginan refused to sell Changhong color

TVs because of Changhong's discrimination policy against some distributors.

Thirdly, since the middle of the 1990's, color TVs are not the family symbolic product any more, consumer's purchase behavior has already changed greatly. With the rapid growth of color TV demand in Chinese countryside, and the increasingly fierce competition in Chinese urban market, the indigenous main color TV manufacturers had paid more attention to sales outlets, and extended their sales forces to small cities and towns. Meanwhile, Changhong still had no idea how and when an end sale occurred by excessively relying on the huge-scale wholesalers. It has lagged behind its competitors such as TCL in terms of channel modification.

Fourth, innovative distribution channels have emerged with the rapid growth of chain retailers. Moreover, the ordinary color TV moves into later stages in the product life cycle and high-end color TVs are expected to be the leading items. Of course, the CPT campaign in 1998 aggravated problems.

With the negative results, Changhong prime operating revenue was decreasing, however simultaneously operating expense was rising during 1997-1999, as shown in figure 9.

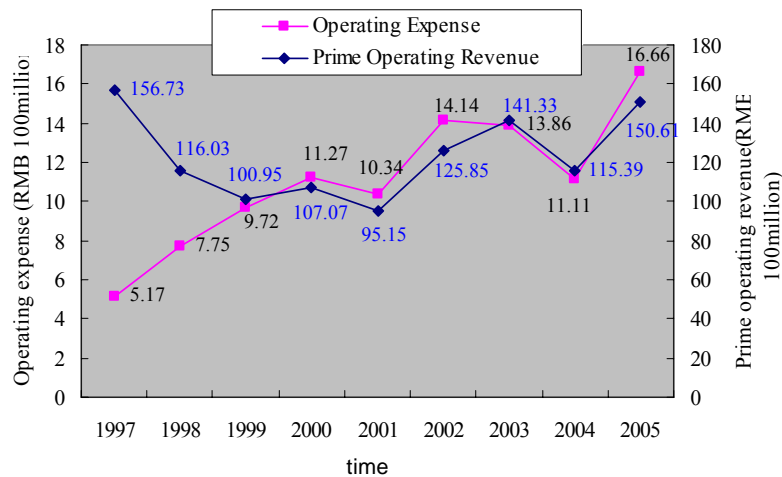


Figure 9 the operating expense and prime operating revenue of Changhong during 1997-2005

Sources: Created based on the data from 四川长虹股份有限公司 (600839) 1995-2000 年年度报告摘要, 2001 -2005 年年度报告

(3) Stage 3: from 1999 till now

Changhong has started to set up sales sub-companies around China since 1997, which are the basic sales & marketing organization and sales force. In the stage, Changhong has begun to modify the channel system and set up small regional distribution system according to market segmentation. The channel map is illuminated in figure 10.

With the emergence of new retailer channel, Changhong began to strengthen the direct cooperation with these large consumer appliance chain stores, such as Guomei, Suning etc. In tier one or tier two cities, the channel can be shorter:

Manufacturer → Chain retailer → End user

However, the traditional distributors and retailers are still the dominant sales channel. And in tier three or tier four cities, it is still multi-tier distribution system:

Manufacturer → Sales sub-company → distributor → Retailer → End user

Manufacturer → Sales sub-company → Retailer → End user

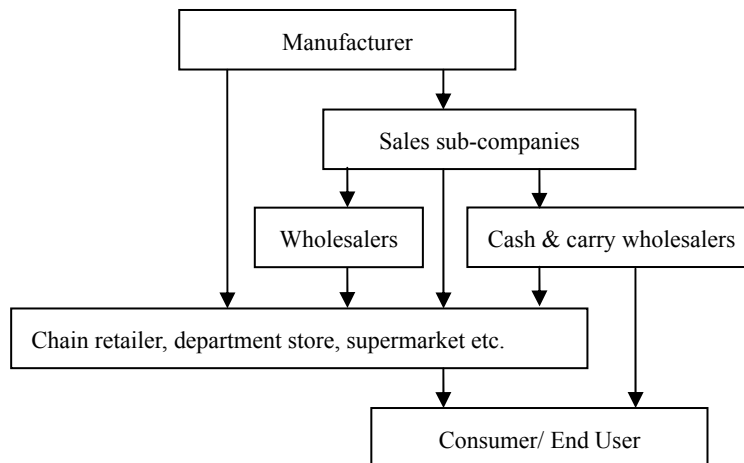


Figure 10 Distribution channel map of Changhong

Advantage: The extensive sales force is often necessary if the supplier wants to retain control of the product. It is good for manufacturers to control and manage the retail network, such as prompt information feedback, sensitive to market, and the control of retail price and so on. And producer is closer to retailers and end-users.

Weakness: there are huge sales & marketing expenses as well as high level inventory in manufacturers.

At the end of 2005, there were 177 sales sub-companies in China. In tier one or tier two cities, these sub-companies should contact with different distributors and retailers. All kinds of sales expense and the fixed asset of each sales sub-company are uniform calculated by Changhong. In small towns, 3 or 4 workstations are set up under sales sub-company level. These workstations should directly deal with the small retailers in each township.

The obvious characteristics in the course of Changhong distribution channel development are expounded as follows:

(1) From multi-tier system to flatted structure system

It is a more common way that Changhong directly contacts with retailers, especially in tier one cities. Thus, many goods get to customers through a simple,

flatted structure distribution system without a wholesaler level now.

(2) Enhancing the relationship with its distributors or retailers

Learning from the failure of its initial strategy in the late of stage 2, Changhong has paid more attention to work closely with the retailers. It takes a lot of money to set up about 200 sales sub-companies, which can also collect more accurate consumer and competitor information.

(3) From one type of channel dominant to multiple types channel

At present, Changhong products distribution involves multiple channels including direct channels and indirect channels. And Changhong doesn't depend on only one or two types of channel any more. Of course, it also means it is more difficult to manage the marketing channels.

(4) From selective distribution to almost intensive distribution

After 1998, Changhong expands the number and types of outlets for its products in order to offer greater intensity of distribution, especially in the township. In a sense, Changhong has begun to utilize almost intensive distribution.

Presently, Changhong is attempting to forge a long-term partnership with its distributors and dealers, and improve the marketing information system.

2. Marketing organization structure: from centralized to decentralized



Figure 11 Changhong sales & marketing organization in 2000

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

Before 2000, the sales & marketing organizations of Changhong was established basically based on a hierachical system, as shown in figure 11. There is not clear functional definition for each management level because the headquarters falls into all kinds of issues, including strategic, tactical, and operational issues (see figure 11).

Before 2004, the sales sub-companies around China undertook the sales and

marketing of all types of products, including color TV, rear-projection TV, air conditioner, AV and battery. All kinds of sales expenses and the fixed asset of each sales sub-company are uniform calculated by Changhong headquarters.

The organization structure of Sales & Marketing Dept. in Changhong headquarters in 2000 is illustrated in figure 12.

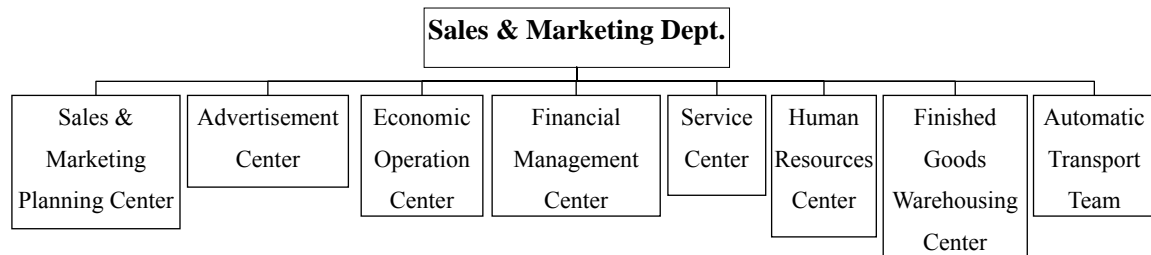


Figure 12 the organization structure of Changhong Sales & Marketing Dept. in 2000

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

Facing white-hot competition and increasing demand in China's countryside since the middle of 1990's, each of the Chinese home appliances manufacturers carried on the reform in marketing system. Changhong also started to frequently adjust the sales & marketing organization structure since 1996(see figure 13)

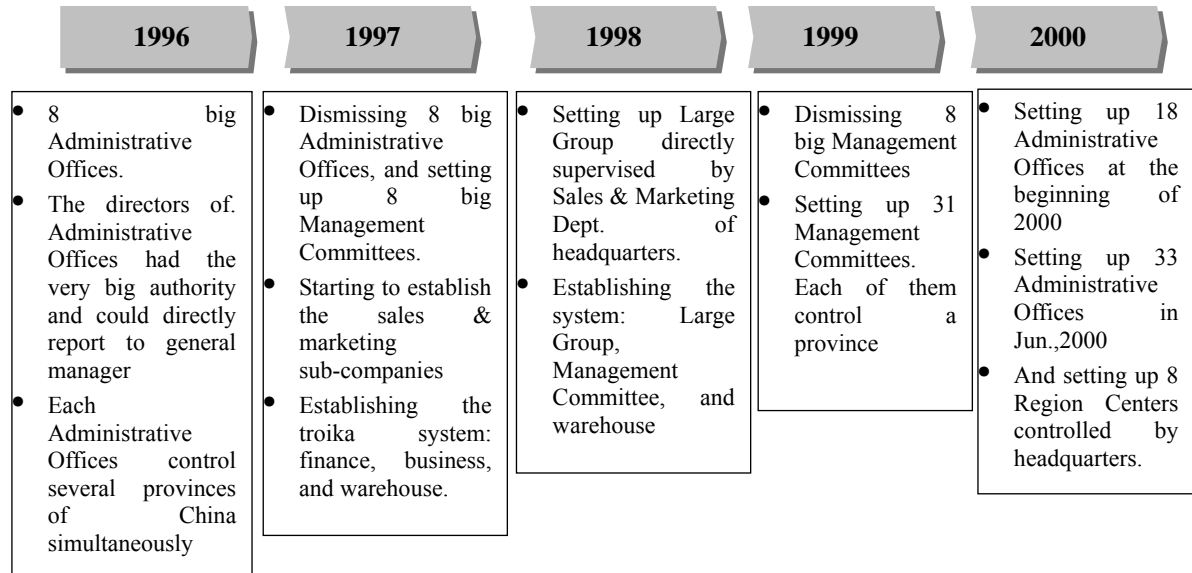


Figure 13 the adjustment of Changhong marketing organization during 1996-2000

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

When Zhao Yong first served as the general manager of Changhong Electric Co., Ltd in Jun., 2000, he tried to reform the sales & marketing system with the assistance of Roland Berger Strategy Consultants. The consultant firm stated that the frequent

adjustment in Changhong sales & marketing organization structure during 1996-2000 was the important reason why there was an unclear functional definition for each management level in 2000.

In 2000, there were 4 prime businesses in Changhong, including color TV, air conditioner, AV and battery. The 4 businesses were in unbalanced development due to color TV taking the dominant position. The end users and the marketing channels of the 4 businesses in Changhong are so different due to different customer buying behaviors. Thus, the marketing system should adapt to different consumers in different places with flexibility. However, the sales & marketing system of Changhong is still a highly centralized system in 2000. The headquarters has absolute authority, and a subordinate is often responsible for an immediate superior.

The consultants firm pointed that Changhong obviously fell behind other indigenous companies, such as Haier and TCL, in marketing system in 2000. The problems in Changhong marketing system which were put forward by the consultant firm is expounded as follows:

(1) Without clear functional definition for each management level. And the Sales & Marketing Dept. of Changhong headquarters falls into all kinds of issues, including strategic, tactical, and operational issues.

(2) Limited authority of sales sub-companies. It weakens the rapid reaction ability to market changes. The decision-making concerning almost every issue in sales sub-companies must report to the next superior authority for examination and approval. Because of the sluggish information flow, Changhong has missed many good chances.

(3) The sales function of Changhong sales & marketing system is prominent, but the function of marketing planning is weak.

(4) Changhong leaves much to be desired in the linkage of production and marketing, and new product development. The Sales & Marketing Dept. is unable to provide information for making production plan. And without products planning function, Sales & Marketing Dept. cannot put forward forward-looking new product plan and the old product improvement program. Hence the new product development in Changhong is not market-oriented.

(5) With the high degree of division of labor, lacking in planning function and uniform evaluation system, there are organizational functions overlapping, conflict and blank in Changhong sales & marketing systems.

Furthermore, the sales and marketing activity is only focused on color TVs

neglecting diversification strategy without special marketing plans for different products.

The consultant firm concluded that the centralized marketing system was already not in line with Changhong business diversification and the actual competition environment. Hence, the consultant firm suggested establishing matrix structure marketing system for multiple products. And an organization adjustment plan with 5 platforms was proposed (see figure 14) in 2000.

Management level	Function	Core functions in sales & marketing
Headquarters	Platform of decision-making and decision support in sales & marketing operations	<ul style="list-style-type: none"> • Decision-making for significant issues such as national strategy, plan, and yearly goal etc.; • Providing rapid and prompt support service in sales & marketing, supporting the work of regional marketing team. And the internal management and internal construction; • Operation guide for the sale & marketing team; • Transferring the decision authority for daily and regional operation to lower level.
Region	Supervision platform in sales & marketing	<ul style="list-style-type: none"> • Supervising the market, financial risk and team construction in its domination area; • With the goal of risk prevention and risk control; • Operation guide for administrative offices and sales sub-companies.
Administrative Office	Management platform in sales & marketing	<ul style="list-style-type: none"> • Daily decision-making of its domination area under the budget system; • The internal management in its domination area, such as sales team construction, personnel management and salary assignment ; • Core marketing function construction in its domination area such as product management and marketing planning etc.; • Establishing the marketing strategy, overall operation plan, and overall marketing budget in its domination area; • Guiding and harmonizing the operations of the sales sub-companies
Sales Sub-company	Operation platform in sales & marketing	<ul style="list-style-type: none"> • Sales operation in its domination area; • Promotion activity and business area management in its domination area
Production and development system	Service platform in sales & marketing	<ul style="list-style-type: none"> • Assisting Sales & Marketing Dept. in the new product development, product promotion and the linkage of production and marketing • Production based on the cost restrict of Sales & Marketing Dept.

Figure14 five platforms plan proposed by Roland Berger Strategy Consultants in 2000

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

In the five platforms plan, the Sales & Marketing Dept. in Changhong headquarters will not carry out decision-making concerning regional and daily operations any more, only makes decisions related to national and strategic issues. Some decision authority for tactical and operational issues will be transferred to the lower level, such as Region, Administrative Office and Sales Sub-company. Region

will be in charge supervision, and Administrative office and Sales sub-company will have more authority than before (see figure 14).

The organization structure of Sales & Marketing Dept. was also suggested to be adjusted (see figure 15).

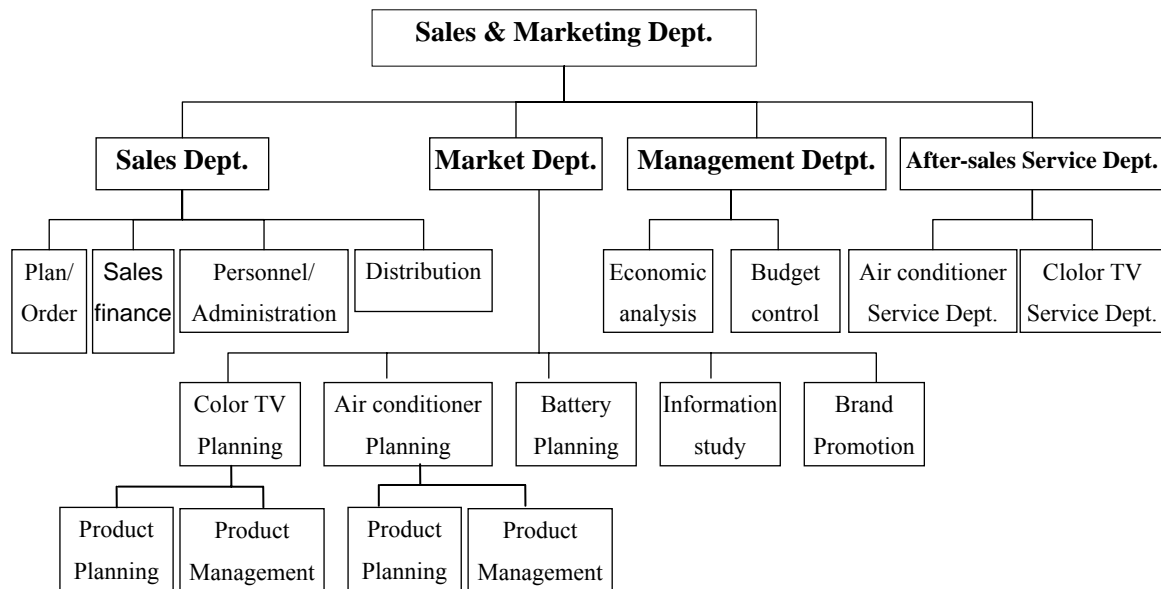


Figure15 the organization structure plan for Changhong Sales & Marketing Dept. suggested by Roland Berger Strategy Consultants in 2000

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

The organization structure of the other three levels is illuminated in Figure 16.

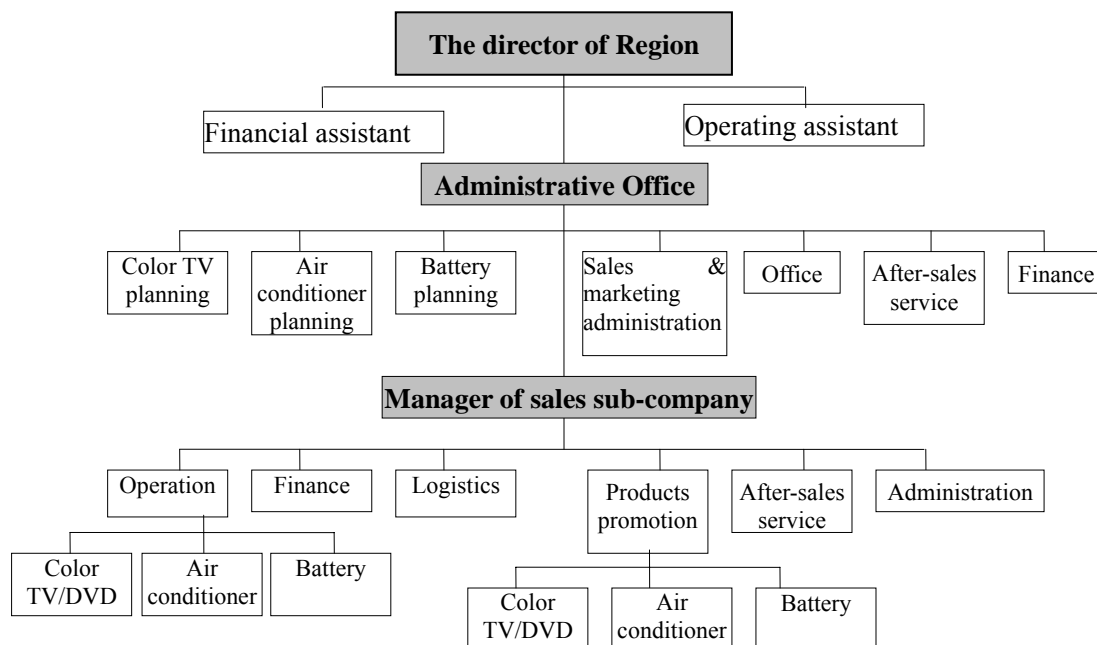


Figure 16 the organization structure of Region, Administrative office, and Sales

sub-company

source: 四川长虹电器股份有限公司营销组织和管理平台设计中期报告, Roland Berger Strategy Consultants, 2000.9

In a word, the reform plan of 2000 suggested Changhong to build a decentralized marketing system with powerful marketing function based on multiple products.

In Feb., 2001, Ni Runfeng served as CEO of Changhong, and then Zhao Yong resigned his position. The reform for Changhong marketing system in 2000 was interrupted and the plans suggested by Roland Berger were not adopted due to the leadership adjustment.

There was still frequent adjustment in Changhong sales & marketing organization during 2001-2003(see figure 17). Since Zhao was appointed the chairman of Changhong in Jul., 2004, Changhong initiated the biggest management reform. It is noted that the marketing system reform is therefore being put into practice, which was unable to be implemented in 2000.



Figure 17 the adjustment of marketing organization in Changhong during 2002-2005

Sources: based on 魏明, 看不透的长虹营销体系, 2003.5.6, 中国营销传播网, <http://www.emkt.com.cn>, 2006.12.8; 严洪伟, 长虹新帅三把火, 渠道调整价格下调股权改革, 2004.8.18, 城市快报, <http://www.sina.com.cn>, 2006.12.1; 四川长虹股份有限公司 (600839) 2002-2005 年年报

The main changes during 2001-2005 are expounded as follows:

(1) Sub-companies have more decision authority since 2003. It means Changhong has managed to adjust its marketing system from a centralized mode to a decentralized mode.

(2) Changhong started to separate the distribution channels among color TV, air conditioner, AV and battery since 2004. And Changhong Air Conditioner Marketing Co. was established in 2005. It reveals Changhong has started to establish professional marketing system according to different products.

(3) Changhong reorganized the sales sub-companies around China, and reduced the number of sales sub-companies. The sub-companies in China were reduced from 227 in 2001 to 177 in 2005. The 19 big Regions also merged into 12 Regions.

In conclusion, Changhong has realized it is necessary to implement reform in its marketing system. Additionally, with the adjustment in leadership, therefore there are frequent modifications in marketing system. But negative effects could also be expected because of the frequent adjustments in organization and personnel changes.

3. Overseas marketing strategy

Changhong has began to make its way into foreign countries since 1998(recall the discussion in 2.1).

Changhong regards the market of Southeast Asia nearby as its extension market from China and focuses on establishing a well-known brand image.

Indonesia is the most representative country. Cooperating with local industrialists since 1999, local production in Indonesia for Changhong products has been put into practice with the yearly output of 350,000 color TVs, 150,000 air conditioners, 300,000 DVDs, and 100,000 digital network products. In addition, Changhong also pays attention to build sales & marketing network in Indonesia. In Nov., 2000, the Indonesian Representative Office of Changhong was established. At present, Changhong has distributors in 27 Indonesian provinces. The Indonesian market is divided into 8 Regions according to the main sales & marketing areas, in which sales sub-companies of Changhong have been set up. Changhong stated there are nearly 1000 Points of Sale and over 100 after-sales service centers now. According to the statistic issued by the Association of Electronic & Electrical Home Appliances Industry of Indonesia in Jun., 2004, the market share of Changhong air conditioner reached 20% in Indonesia. The statistics refers to Changhong has surpassed LG of South Korea within 2 years, only inferior to Japan Matsushita that has been in Indonesia for over 30 years. It proves that Changhong marketing strategy in Indonesia is successful.

In addition, Changhong Electric (Australia) Co. Ltd was established in 2001 as a sub-company directly and solely owned by Changhong. Australia Changhong has already established sales and service network in Australia which appears to grow

stably and continually now. Presently Changhong has set up overseas representative offices and organizations in USA, Europe, Australia, Russia, Southeast Asia and Middle East.

In the region of the Commonwealth of Independent States, Changhong obtains profit by exporting components and parts, and production technique for color TV and air conditioner. Changhong adopted the way of exporting SKD (Semi Knock Down) and CKD (Completely Knock Down) assembly production lines to the region. By now, it is not clear whether Changhong will make the same success in the region of the Commonwealth of Independent States as in Indonesia.

In other places such as US, Europe, the Middle East, and Africa, Changhong mainly exports some specific products in order to expand the market share, taking its advantage of economies of scale. Of course, according to the marketing channel and management environment in different places, different methods are adopted. Some export products are sold with the Changhong brand, some in OEM (Original Equipment Manufacturer). In the developing countries such as Vietnam, Africa, and Indonesia, Changhong primarily exports some ordinary color TV. But in the developed countries and regions such as Europe, Australia, the Middle East, US etc., Changhong primarily exports high-end products such as HD (High-Definition) TV, Digital Rear-Projection TV, DVD-Recorder etc.

In the USA, Changhong's export business is not smooth due to APEX dispute and anti-dumping accusations, as mentioned in 2.1 and 3.1. Before 2004, the products exported from Changhong with APEX brand entered many outlets in America including Wal-Mart, the retailer giant, depending on the sales network of APEX. However, products with Changhong brand are unable to directly enter American outlets now. Also due to the anti-dumping tax, Changhong overseas business in USA has become bogged down since 2003.

According to the mid-term and third quarter reports of 2006 released by Changhong, the dispute with APEX came to an end in Aug., 2006. Changhong, APEX Co. and Mr. Ji Longfen, the director of APEX Co., reached a settlement agreement. According to the agreement, APEX Co. would undertake the debt of \$ 170 million. The brand of "APEX" and "Apex Digital" would be given to Changhong. It indicates that Changhong will carry on its business in USA depending on the sales network of APEX. And it also seems that Changhong cannot resist the temptation from the huge demands in American market because Changhong's rear-projection TV is very popular in USA according to the market reaction during 2001-2002. Unfortunately, it

is reported that the color TVs sold in America must be digital TVs according with the ATSC (Advanced Television Systems Committee) standard since digital TV will be comprehensive promoted in America in Mar., 2007¹². This might mean color TV manufacturers must pay the patent fees of nearly \$ 23 per unit to the patent technology owner. If it becomes the fact, Chinese color TV manufacturers, of course including Changhong, will be unable to make a profit in America market.

In conclusion, when entering the international market, Changhong still are fond of price cut promotion and OEM production to maintain or increase market share, thus lacking effective measures.

Changhong announced that its Czech production base has been put into pilot production on Dec.6, 2006. The production base in Czech will prevent Changhong from encountering quota limit and anti-dumping barrier in Europe. It shows Changhong attempts to adopt some more effective measures in overseas marketing, learning from its failure in USA.

3.4 Technical strategy and competitive advantage

Changhong developed from the former state-run military-radar factory established in 1958, which had strong technical force. By the end of 1965, there were 2473 employees in Changhong factory, of which there were 490 engineers and technicians, accounting for 19.8%¹³.

In 1972, Changhong factory started to develop monochrome TV and took the lead in the pilot production of monochrome TVs in the Chinese defense industry in 1973. Five categories of monochrome TV and four categories of color TV were developed successfully during 1973-1978, in which two categories of monochrome TV were put into production. In essence, the production process and production technology of airborne radar are more complicated than TV. Transferring from the production of airborne radar to manufacturing TV, Changhong has a technical advantage compared with other TV factories of China in 1980s.

An analysis model for the electric and machinery corporations had been proposed by G. Richardson in 1972. Later the model was modified by many scholars¹⁴ (see figure 18).

In the process of transforming from a military factory to a home appliances enterprise, Changhong transferred military technology to civilian goods, and chose “introducing, digesting, and absorbing” overseas technology and equipments. The link between 2-② and 4-④ in figure 18 leads to competitive advantage of Changhong¹⁵.

It is analyzed as follows:

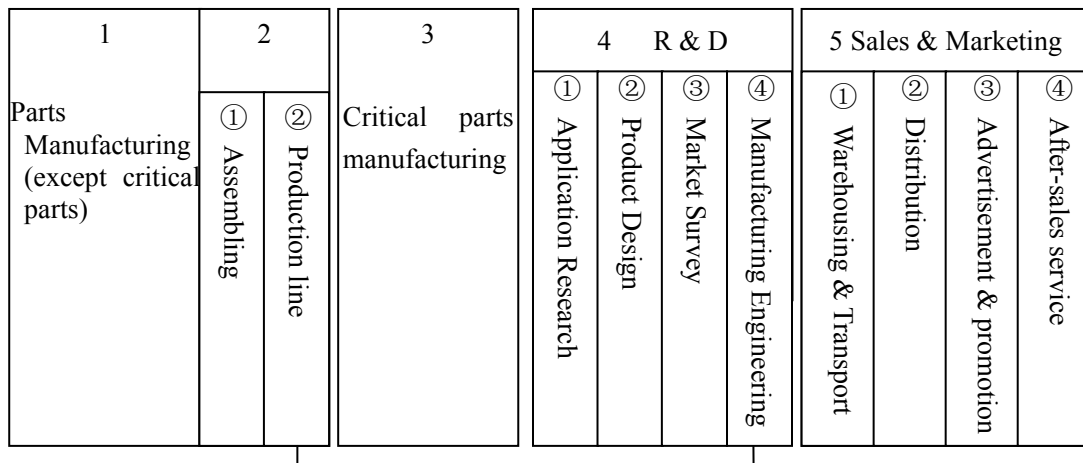


Figure 18 an improved analysis model for electric enterprise and machinery enterprise

Source: 康荣平, 柯银斌. 中国企业核心能力剖析: 海尔与长虹[J]. 中国工业经济, 2000, 3: 64-69

A color TV assembly line and an automatic production line for color TV were introduced from Japan Matsushita to Changhong respectively in 1979 and 1986. With a strong technical force, Changhong had the technical ability of imitation, improvement and partial development¹⁶. Depending on its own technical force, Changhong rapidly duplicated and established more than 10 advanced color TV production lines in the 1980's. In 1988, Changhong had grown up to a large-scale, state-owned enterprise, with TV production capacity of yearly 1,000,000 units. In a word, with the advantage of low cost in equipments investment and cheap labor in Sichuan province, Changhong took the lead to obtain the mass production capacity in China in the 1980's. And it continuously expanded production capacity, thus becoming the biggest color TV manufacturer in China in 1995. Changhong created a cost advantage, resulting from economies of scale and the ability of providing for itself. Namely, besides the link between 2-② and 4-④ in figure 18, Changhong also had an advantage of "1" in figure 18 over domestic rivals before the middle of the 1990's

Moreover, after the large-scale technological transformations, Changhong succeeded in launching 21-inch-screen color TV in 1989 and 29-inch-screen color TV in 1993, which soon became the best-selling products in China. It indicates that Changhong also won the advantages of 4-① and 4-② in figure 18 over domestic rivals before the middle of the 1990's.

These factors above drives Changhong to be the leader in Chinese color TV manufacturing sector in the 1990's.

The tendency for low-end color televisions towards homogenization has given rise to the extreme reduction of profits and the price wars. Changhong lagged behind

its domestic rivals in sales channels in the late 1990's, namely, the "5" in figure 18. Thus Changhong has lost the advantages in terms of channel cost, cheap labor, which Changhong is proud of.

After 1998, Chinese color TV manufacturers have been experiencing hardship due to lack of core technologies (see "3" in figure 18). After going through small screen to large screen and then to super plane and plasma display, core technology of color TV has been consistently controlled by foreign vendors. Presently the importance of the upstream resources of high-end color TV lies in such resources that are in the possession of few manufacturers. Almost none of the domestic enterprise has upstream resources while those foreign brands possess, at least, one kind of such upstream resources. Chinese plants are manufacturing high-end color TV by importing most spare parts and components from Japan, South Korea and Chinese Taiwan. The cost of key spare parts accounts for 70%-80% of total cost. Therefore, although there is great growth in high-end color TV output of Mainland China in recent 3 years, most profits are actually taken away by the upstream enterprises.

Changhong, like other Chinese companies, is actively seeking its chances in the high-end field. In contrast to other Chinese color TV plants paying more attention to LCD TV, Changhong decides to treat PDP TV, LCD TV, and Rear-Projection TV relatively equally.

Changhong has poured a large amount of money in developing rear-projection TV and possesses several items of key technologies in rear-projection TV now. According to statistic of SINO Market Research Ltd., during Jan., to Sept. of 2006, the Hitachi rear-projection TV took a 28.67% share of Chinese market, ranking No.1. Changhong rear-projection TV ranked No.2 with the market share of 21.53%. Changhong has become the leader in rear-projection TV among Chinese color TV manufacturers. In a sense, Changhong has gained the advantage of "3" and 4-① in figure 18 over other Chinese color TV companies.

Since Zhao served as the leader, he is striving to make a breakthrough aiming at integrating the upstream resources. It shows Changhong attempt to gain the competitive advantage in key technology. At present, 2 kinds of methods are mainly adopted.

(1) Participating in the development and investment of upstream critical spare parts and components.

In Jan., 2006, Shenzhen Julong Optoelectronic Co., Ltd was set up, together with four color TV enterprises (Changhong , TCL, Skyworth, and Kanka) and Shenzhen

Science & Technology Investment Co., Ltd. The joint venture announced that a 6th generation of LCD production line would be established with investment of RMB 16 billion Yuan. It is a symbol of Changhong participation in the LCD manufacturing industry.

Moreover, Sichuan Century Shuanghong Display Devices Co., Ltd (abbr. Century Shuanghong) was established in order to push the independent developing and manufacturing critical components of Flat-Panel TV in Jul., 2006, with investment by Changhong Holdings and Irico Group Electronics Co., Ltd. In Dec., 2006, it was announced that Century Shuanghong was planning to purchase a 75% shareholding of Sterope Investments B.V of Holland with \$ 99.9 million, and will thus hold 75% shares of Orion PDP Co., Ltd of South Korea. Purchasing Orion PDP Co. means that Changhong will obtain more than 300 patent technologies of PDP, in which 12 patent technologies is utilized by other PDP plants. Changhong might solve the patent expense problem through the way of cross licence. Hence, Changhong will be the first to possess the PDP manufacturing technology in China. In fact, it is a shortcut to unite the upstream enterprises or to purchase the upstream enterprises by capital operations.

(2) Setting up R & D institutes and spends a lot of money in developing the TV chip with self-dominated intellectual property.

Changhong has announced that a kind of digital chip named Hongxin No.1 with self-dominated intellectual property has been developed in Feb., 2006, which mainly is used in traditional CRT TV and Rear Projection TV.

Furthermore, Changhong cooperates actively with overseas well-known enterprises to set up joint laboratories. Up to now, Changhong has set up 14 joint labs with many world-known enterprises such as Microsoft, Philips, Toshiba, and Sanyo. On the other hand, Changhong also seek supports from the government.

But, presently there is still large gap between Changhong and foreign companies in term of key technologies. It is not clear at present whether Changhong will greatly benefit from these measures.

3.5 Organization structure

In Changhong's new organization structure, there are 3 kinds of organizations: functional organizations in the headquarters, various industrial company group, and service platform (see figure 19).

The headquarters will not engage in the concrete business management any

longer, transferring from process management to management by objective. The various functional departments in headquarters also will focus on the planning, supervision, and service.

The industrial company group consists of 13 industrial companies, as shown in figure 19. The service platform (including Industrial Design Center, Logistics Co., Equipment & Power Dept., Foundation Management Co., and Safety & Security Dept.) and sales & marketing platform (including 12 Regions in China) provide the services for the industrial companies.

After two-year adjustment and four high-level meetings held on Aug., 29, Aug., 31, Sep., 20, and Oct., 15 of 2006, the final organization plan is determined. On Oct., 19, 2006, Changhong and its mother company (Changhong Holdings) announced “Notice Concerning the Adjustment of Partial Organization Responsibility”. It announced that there would be 9 Strategy Business Units (SBU), and new management mode and organization structure would be formed (see figure 20). The Multimedia unit is the biggest one in the 9 SBU which consists of many businesses including CRT TV, LCD TV, PDP TV, Rear-Projection TV, and other household appliances etc.

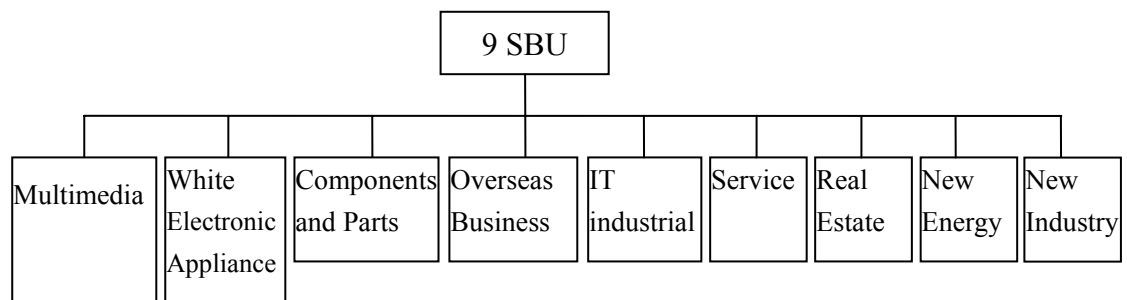


Figure 20 the new 9 SBU in Changhong organization structure

Source: based on Changhong website: www.changhong.com.cn, 2006.12.10

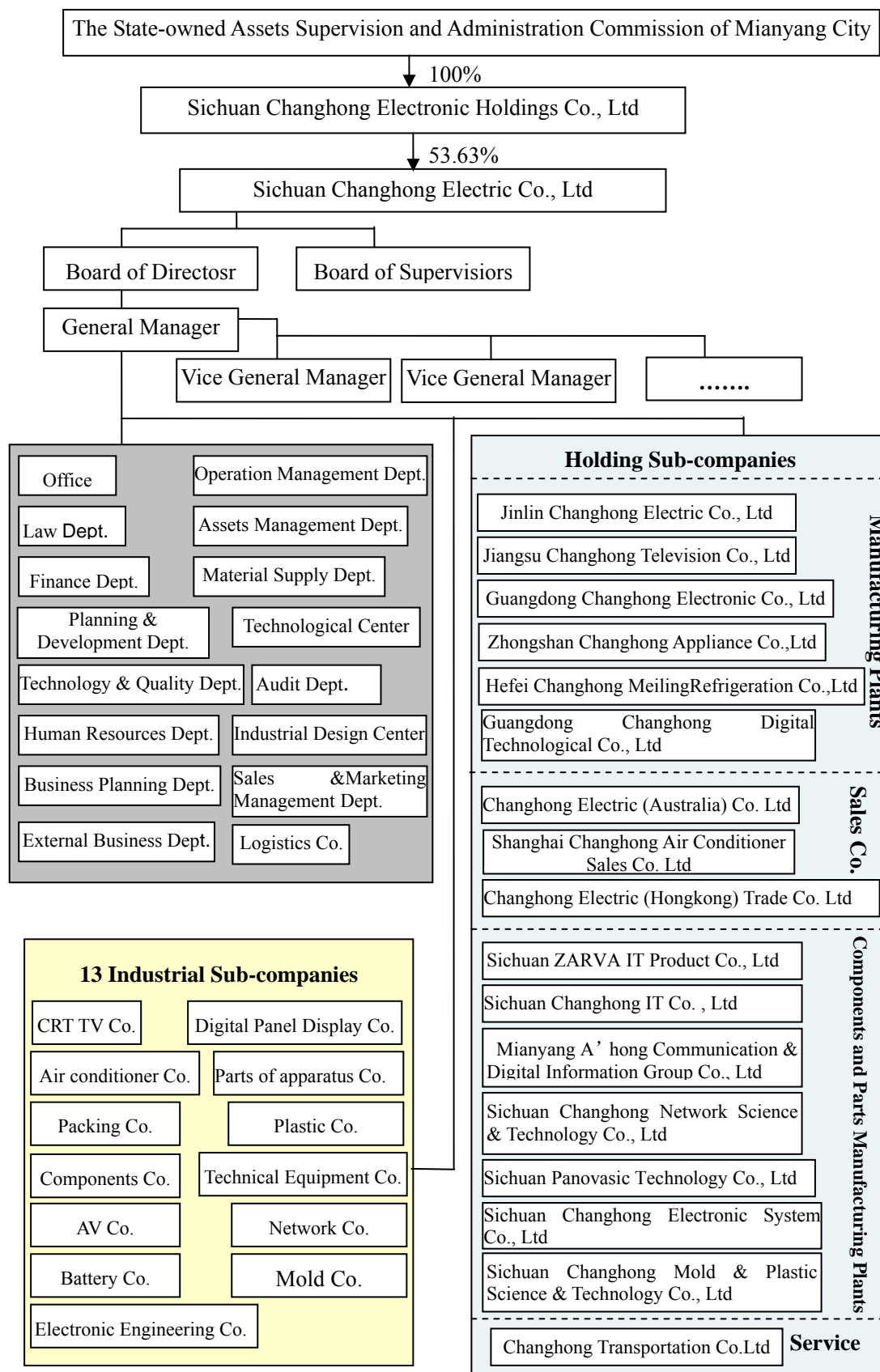


Figure 19 organization structure of Changhong

Sources : based on Changhong website: www.changhong.com.cn, 2006.10.24, 四川长虹股份有限公司 (600839) 2006 年中期报告.

4 Logistics Strategy and Logistics System: Internal Integration and Outsourcing

4.1 Logistics organization

Changhong sought help and advice from Roland Berger Strategy Consultants again in 2004. The analysis report released by the consultant firm pointed that there were many problems in Changhong's logistics system. These problems can be described explicitly by four words: "more", "fewer", "separate", and "disorder", as follows¹⁷:

(1) "More" means there are too many resources. In Mianyang, the headquarters of Changhong, there are more than 40 raw material storehouses, more than 50 finished product storehouses, more than 200 sales storehouses and nearly a thousand freight vehicles. There is huge waste of resources in Changhong without a uniform plan for the logistics resources.

(2) "Fewer" indicates that there are only a few profits. The service level and the profit of Changhong logistics system are lower than the average level of home appliances industry. The logistics organization, as a service department for other departments and sub-companies, lacks genuine service and profit orientation.

(3) "Separate" means that logistics activities are managed by separate organizational units. For instance, finished products distribution is supervised by Sales Dept., but raw material logistics is managed by the Material Supply Dept. Nobody is responsible for the total logistics cost so that it is unable to achieve cross-functional coordination in the enterprise.

(4) "Disorder" suggests that the logistics process is disorder. The transportation and warehousing operations in Changhong are inefficient without systemic and scientific operation process and operating regulation.

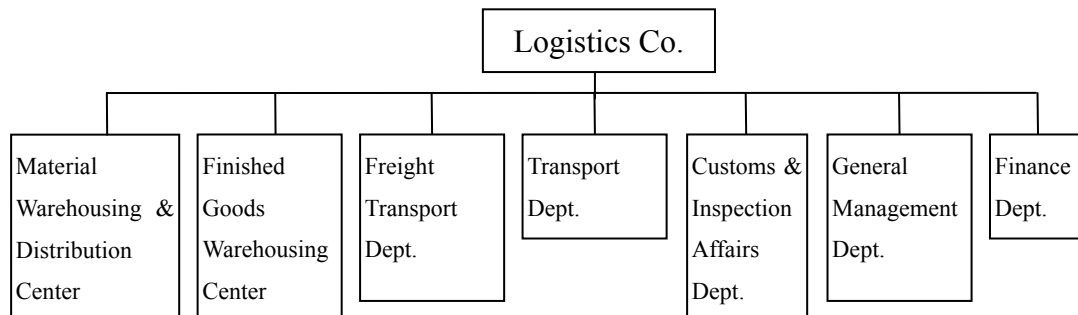


Figure 21 the organization structure in Logistics Co. of Changhong

Source: Created based on an interview by the author with Changhong Logistics Co. (2006.10.24)

Changhong Logistics Co. was established in Mar., 2002. But there were minor changes, and logistics activities were still dispersed throughout the organization in 2004. On February 23, 2005, Logistics Co. was reorganized with the director of Yang Jian, the former director of Sales & Marketing Dept. New Logistics Co. is responsible for managing the major logistics functions, including warehousing, transportation, and inventory (see figure 21).

As shown in figure 21, in the new Logistics Co., Material Warehousing & Distribution Center engages in the storage and distribution of raw materials and semi-finished products, while Finished Goods Warehousing Center is in charge of finished goods. Freight Transport Dept. is responsible for supply logistics and distribution logistics. Transport Dept. undertakes the delivery materials and semi-finished goods to the production lines in Mianyang production base. Customs & Inspection Affairs Dept. is dealing with the issues involving applying to the customs and Entry-Exit Inspection and Quarantine Department. General Management Dept. is the logistics planning department. And Changhong Transportation Co., Ltd will also be integrated in Logistics Co.¹⁸

Changhong Logistics Co. stated that it will not only serve as an interior service department in the future. It will finally become a professional logistics platform, providing service for Changhong and other clients. Changhong business might only account for about 50% in the future. Recently, it is noted that Changhong Logistics Co. is negotiating with a famous 3PL (the third Party Logistics) company concerning investing together to establish a logistics corporation, which is aiming at becoming the biggest 3PL enterprise in Southwest China.¹⁹

4.2 The introduction of logistics information system and information flow

1. The process of Information Technology (IT) application in Changhong

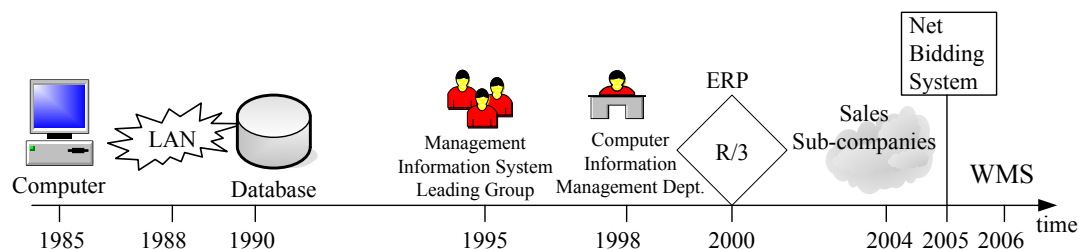


Figure 22 the process of IT application in Changhong

Resources: Created based on 王向前, ERP 实施重在管理——记长虹 ERP 项目, 每周电脑报, 2001.8.24, <http://www.gzii.gov.cn>, access on 2006.11.24; 李黎,孙永,长虹集团井喷的信息化建

设, e 制造, 2005.10.20, <http://www.emanu.cn>, access on 2006.11.24

The process of IT application in Changhong is illuminated in figure 22. In 1985, the computer was first introduced into the Finance Dept. In 1988, the first LAN (Local Area Network) was built in Changhong applying 3COM technology. In 1990, the first Database was built in the former Procurement Dept.

During the later several years until 2000, 27 LANs were built in different departments, and the database was also promoted from DBASE to FOXBASE, then to Visual FOXPRO. The application of computer has greatly improved the performance efficiency of routine work.

In Apr., 1995, a Management Information System Leading Group was set up, which then conducted an investigation in MRP II product and its application. It's the beginning symbol of construction process of information system in Changhong. On December 1, 1998, Computer Information Administrative Office was established officially in Changhong, with the director of Huang Dongjin, the former director of Procurement Dept.

In Jul., 1999, Changhong signed a contract with SAP AG, a German firm, which is the world leader in providing ERP software. Changhong decided to establish ERP (Enterprise Resource Planning) by using R/3 product of SAP, and IBM would be the hardware vendor. SAP China Corporation was invited to act as a partner in the implementation process of ERP.

On Jul., 16, 2000, the first stage project of Changhong ERP system was installed with successful system switch, in which there are four modules including FI/CO (Finance/ Cost Control), SD (Sale & Distribution), MM (Material Management), and SM (Service Management).

In the later several years, Changhong kept moving into cyber-space. Up to 2004, Changhong has carried out information integration with 3PL firms and has been forging Net ties with the bank. By 2005, information transmitted by computer to computer hookups has been widely used in about 200 sale sub-companies around China in order to gain the maximum speed and accuracy in order transmittal and order entry. The hardware devices of ERP were also upgraded in 2005.

The Online Bidding System has been launched since Oct., 2004. Almost materials purchasing and public sale in Changhong are on network now.

Of course, Changhong need OA (Office Automation) system to conduct business in a paperless environment. After the first stage in 2000, Changhong has implemented the second stage of OA system in 2005. Changhong reported that there was over RBM 1 million savings in office cost in the year of 2005, resulting from OA system. In

addition, Changhong website has been online since the end of 1999.

Since 2006, Changhong has been implementing the WMS (Warehouse Management System) which will be linked with ERP. Up to Oct., 2006, Changhong has utilized bar code in raw materials, while the bar coding system for finished good is still under construction.

Changhong announced that it has spent over RMB 200 million Yuan in information system up to 2005, investing about 0.3% of turnover per year. Faced with time-based competition, Changhong speeded up the construction of information system since 2004, and poured more than RMB 10 million Yuan in 2005.

2. Changhong ERP system

In the first stage, , four modules of ERP system are put into practice, including FI/CO (Finance/ Cost Control), SD (Sales and Distribution), MM (Material Management), and SM (Service Management). The module structure of Changhong ERP system is illuminated in Figure 23.

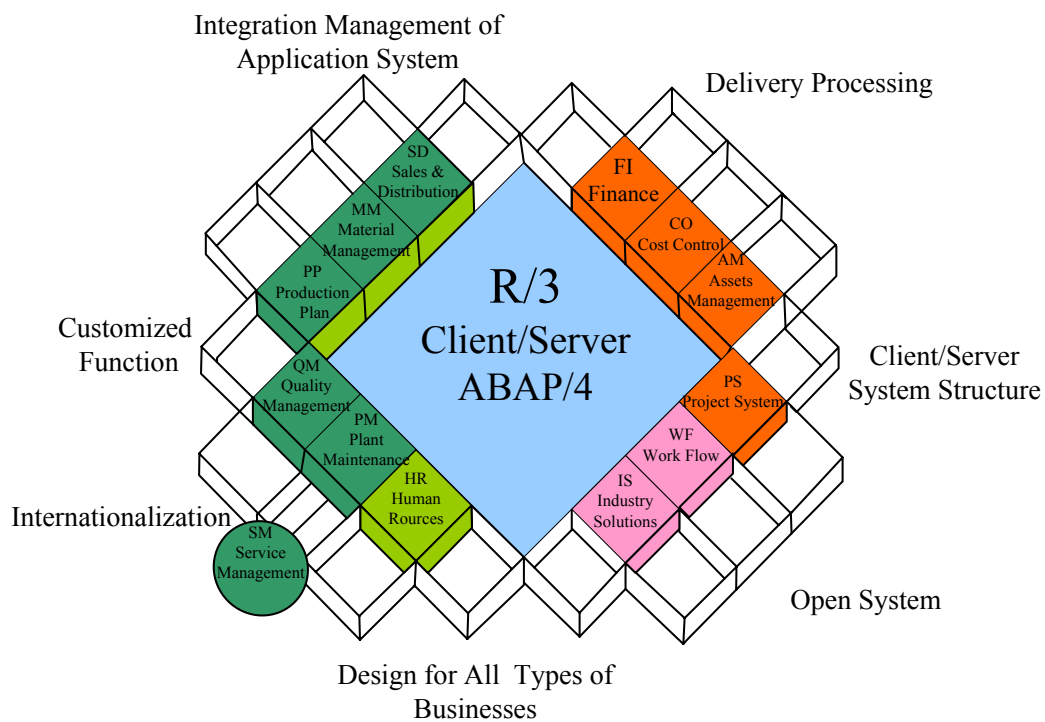


Figure 23 module structure of Changhong ERP system

Sources: adapted from 创新长虹, 四川省强省会议长虹展示内容介绍, 2006.3; 康薇静, 升起ERP的长虹, 中国计算机用户[J], 2002.3: P33-p35

Changhong's ERP journey since 2000 is not smooth due to many reasons. It was rumored that Changhong's ERP was a failure in 2002. Generally speaking, a new ERP system implementation process needs an adjustment period for adaptation. First, there was still much room for infrastructure improvement in 2000. Second, Changhong

need to reengineer its business process to be in line with ERP. This can be a time-consuming process. Moreover, brain drain and frequent adjustments of leadership also had some negative effects.

In view of the effects of four modules in 2002, Mr. Ren Zonggui, a project manager, who participates in ERP project, thought the best one was FI module. All financial reports could be produced automatically so that there was a reduction in manual processing. The second one was SD module. There was not computer management system in Sale Sub-companies before ERP on line. The implementation of ERP brought significant changes in sales & marketing system. The third one is MM module, and the fourth one is SM.²⁰

Now Changhong is improving the functions of the four modules. And on the other hand, it is planning to launch other modules of ERP in the future, including PP (Production Plan) module.

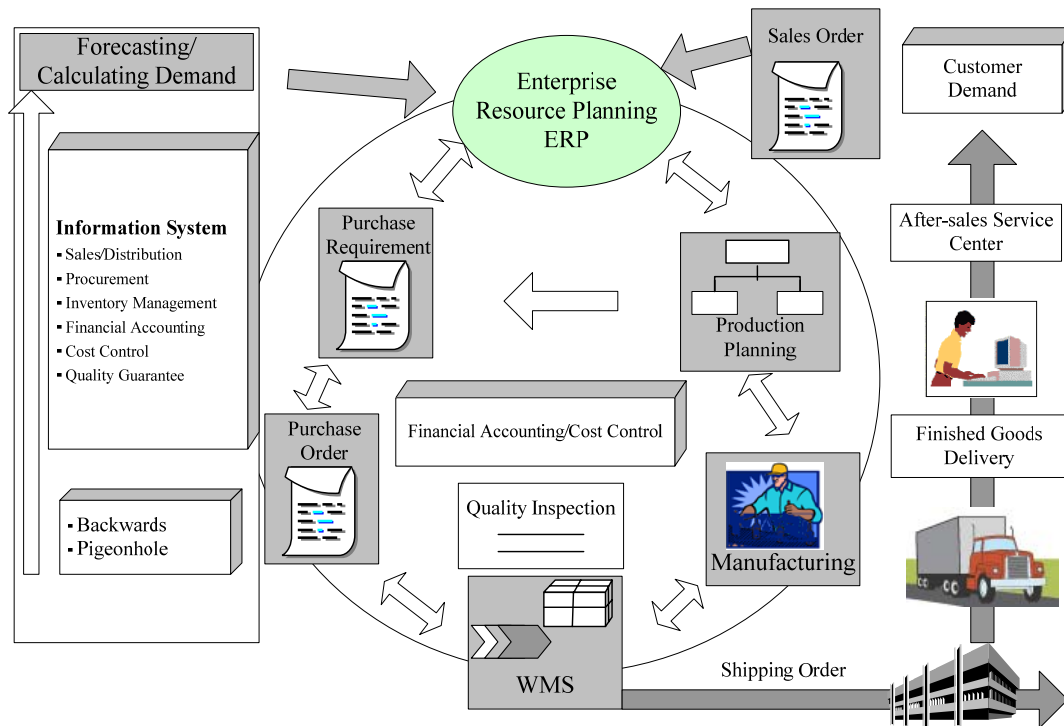


Figure 24 the business process model in Changhong ERP

Source: adapted from 康薇静, 升起 ERP 的长虹, 中国计算机用户[J], 2002.3: P33-p35

Changhong has been attempting to reengineer its business process to be in line with ERP since 2000, including operating, financial, and information process. The long-standing business process in Changhong is production-based. The production plan is put forward by production department based on forecast, and then adjusted by sales & marketing Dept., finally determined by top-ranking corporate executives. None of departments is responsible for inventory funds, production plan, and profits.

There is also not a timely and accurate sales information supporting for making production plan. Thus, with negative results, it is common that the sales system cannot obtain the product they want, while the products are stocked in Changhong warehouse due to inaccurate production plan.

The new business process model (see figure 24) will be an enterprise wide integrated system, and management can consider the automation of the firm's basic business processes. The R/3 applications are fully integrated so that data will be shared among all applications. The forecasting or calculating demand will be therefore more accurate.

3. Warehouse Management System

In order to establish effective inventory management strategy, Changhong has started to conduct WMS since 2005. The WMS will make inventory visible not only in enterprise wide, but also in entire supply chain. By Oct., 2006, bar code has been used in raw materials, while the bar coding system for finished good is still being built. The WMS functions are depicted in figure 25.

(1) Inbound Management

When the inbound appointment is confirmed, a formal receipt can be generated by the system, and then the warehouse begins to receive materials.

(2) Outbound Management

After the outbound appointment is confirmed, the system will generate a formal outbound order, and then the warehouse begins to export the materials.

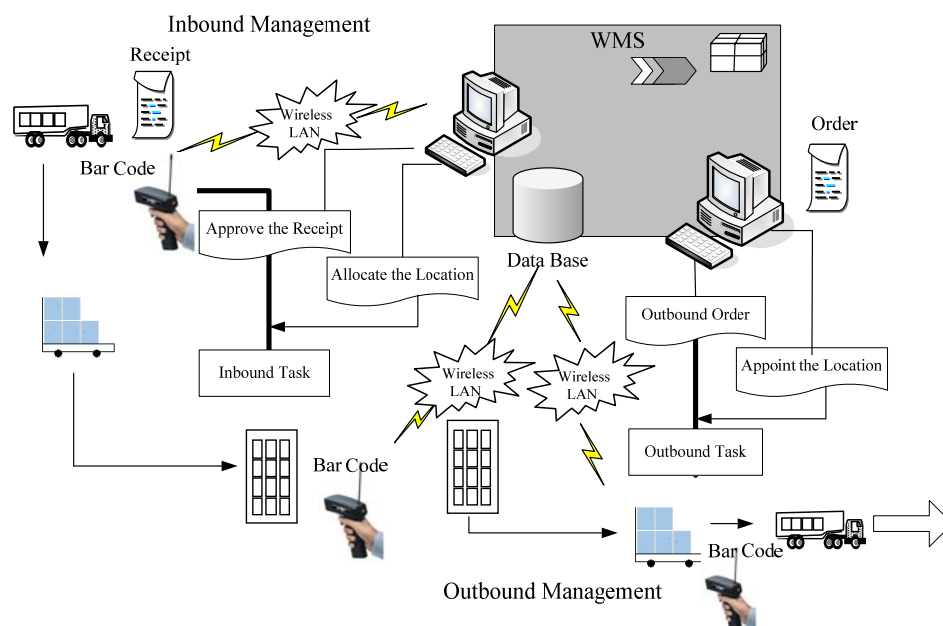


Figure 25 the operating process of WMS in Changhong

Source: Created based on 柴凤伟, 物流是流动的仓库——四川长虹仓储信息化管理纪实,

4.3 Rebuilding of logistics network and logistics flow

Before 2005, Changhong has established 4 Manufacturing Base Warehouses in China, located in Mianyang of Sichuan province, Zhongshan of Guangdong province, Nantong of Jiangsu province, Changchun of Jilin province, and 203 sub-companies storehouses. It suggests that Changhong had more warehouses than any other Chinese home appliances enterprises.

The general trend is to have fewer, but larger, warehouses in an organization's distribution system. Since Jun., 2005, Changhong has carried on rebuilding logistics network. Four CDCs (Central Distribution Center) are established based on the former 4 Manufacturing Base Warehouses. And 66 RDCs (Regional Distribution Center) are set up by integrating the 203 storehouses. Correspondingly, the number of warehouse keepers was reduced by over 300 around China. The logistics network is illuminated in figure 26.

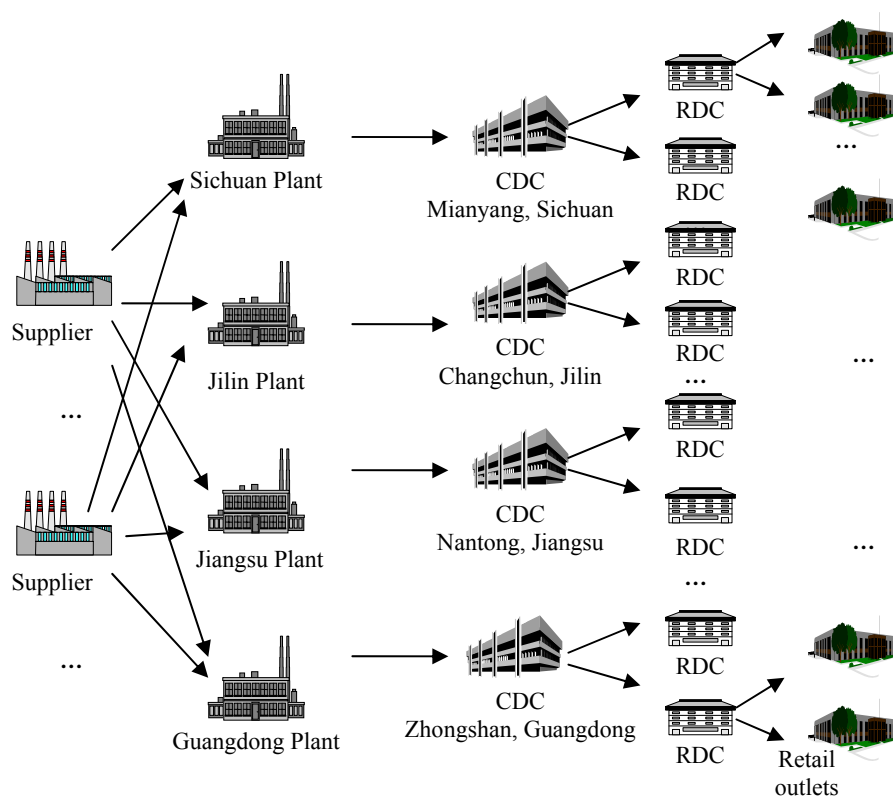


Figure 26 the logistics network of Changhong in China

Note: there are 4 CDCs, 66 RDCs of Changhong in China

Source: created based on an interview by the author with Changhong Logistics Co. (2006.10.24)

By Nov., 2005, Changhong had freed up 150 thousand square meter of rented warehouse space in Mianyang. Correspondingly the rent expense has dropped down

by 50%.

Changhong uses a combination strategy of public and private warehousing. Now Changhong mainly spends money on the infrastructures of 4 CDSs. There are 100 thousand square meter private warehouse space in Mianyang CDC. While almost 66 RDCs around China are rented.

4.4 Logistics operation management

Changhong has carried on the reform in logistics system since Jul., 2004. Now the new Changhong Logistics Co. manages the entire logistics process, including supply logistics, production logistics and distribution logistics. Implementing the integrated logistics management concept, Changhong is focused on achieving cross-functional coordination.

Changhong has reduced direct logistics cost of RMB 130 million Yuan from the beginning of 2005 to Oct., 2006. The direct logistics cost in Changhong ranged from RMB 800 million to RMB 900 million Yuan per year before 2005.²¹ The savings resulted from placing many logistics-related activities under a single organizational unit, and implement information technology tools.

Presently, Changhong Logistics Co. undertakes Changhong logistics operations in Sichuan province by itself because there is not an appropriate 3PL firm can supply the efficient and effective logistics service in Sichuan province. Additionally, Changhong Logistics Co. owns many logistics resources including the largest private motor carrier fleet in Sichuan province in which there are about 200 big cargo vehicles and 10 huge container cars.

On the other hand, Changhong relies on outsourcing logistics activities from third parties in other provinces of China by competitive bidding system. Presently Changhong mainly cooperates with COSCO²² Logistics Co., Ltd., China-Power Large Sized Equipment Transportation Co., Ltd., and Annto Logistics Co., Ltd. In a word, Changhong has recognized the symbiotic benefits that can arise from working in concert rather than independently.

1. Supply logistics

Changhong purchases more than RMB 8 billion Yuan worth of nearly 30000 kinds of materials each year. In the past, Changhong purchased the materials from suppliers in one or two months ahead and stored them in warehouses.

Presently Changhong has applied three new measures, including VMI (Vendor Managed Inventory), culling preferred suppliers, and purchasing materials in online

bidding system.

Changhong has already reached an agreement with more than 900 suppliers from a list of 1100 in 2005. These suppliers agree to build or rent warehouses around the manufacturing bases of Changhong. Thus, cross-docking is used and throughput rates are increased. Changhong stated that the inventory of raw material goods decreased by 61%, resulting from improved communications, better service and shared cost savings. Thus, it has required less warehousing space to provide storage now. The number of raw material storehouses in Mianyang was reduced from 7 to 3 in 2005. The rented storehouse space in Mianyang has been reduced from 230,000 m² to 50,000 m². Changhong is aiming to reduce raw material inventory by 72%.

The measure of culling preferred suppliers enhances the relationship with suppliers. Changhong gives preferred suppliers more business in return for greater responsiveness. And purchasing materials in web bidding system makes procurement more open.

These supplier management measures might postpone inventory ownership until shipment to Changhong's site, then reduce Changhong cash-to-cash cycle time. Additionally with information technology application, in 2005, the accounting cycle has been shortened from 15 days to 6 days. And the capital turnover changed from 2 times per year to 7.8 times in 2005, and still keeps increasing.

With comparison of average level in home appliances industry, the total cost of procurement in Changhong has reduced by 3 % -5 % in 2005.

2. Production logistics

Changhong is planning to achieve customer response and capital efficiency counting on the web-based ERP. It has also proposed to manufacture products according to a MTO system.

As shown in figure 24, the new model will integrate all business management functions including: planning, inventory control, transportation, order processing, manufacturing, procurement, accounting and finance, and quality etc. The forecasting or calculating demand will therefore be more accurate.

In 2005, it was reported that the production efficiency improved by 2.5 times, resulting from application of information technology. The order processing needed over 3 days in the past, while it has become real-time processing since 2005.

The WMS under construction will manage material and finished goods storing, inventory control by computer system. Inventory visibility along the entire supply chain will be available to increase efficiency and flexibility of production planning.

The PP module that will be put into practice is expected to detail the physical workings of the plant with its operating rules, product routings, process times, materials and resource requirements. This ensures that production schedules can be accurately tested and evaluated through the production model before being released to the shop-floor.

3. Distribution logistics

Transportation is critical to distribution logistics operations. Changhong finished goods are transported by trucks between production bases and CDSs, and between RDCs and outlets, which are almost situated in the same area. While long-distant transportation between CDSs and RDCs depends on multiple transportation modes, including rail, highway, and marine.

Changhong undertakes some short-distance transportation in Sichuan province depending on its private truck fleet. The movement of finished goods is almost performed by outside transportation carriers.

Since 2005, Changhong has implemented competitive bidding in long-haul freight transportation. It means Changhong contracts with a specific transportation carrier to service a particular market segment in order to improve sales efficiency. As a result, up to Dec., 2005, road transportation cost was reduced by 22%, and rail transportation cost was also reduced by 25%. Moreover, the export transportation cost was reduced by 30%.

Presently, Changhong is planning to make experiments in Mianyang city to provide “door to door” distribution service. That is, finished goods will be moved from Mianyang production base to end users without transit inventory. There will be a virtual warehouse shared by Changhong and retailers with web-based applications.

Conclusion

Changhong succeeded in transforming from the former state-owned military-radar factory into China's largest consumer-electronics company. By mainly adopting a price cut strategy, Changhong first entered interior and northeastern regions of China, then the central and coastal China. Its initial success primarily resulted from the dominant advantages in terms of economy of scale.

When Changhong experienced hardship since 1998 and reported significant losses in 2004, it has been striving to make a breakthrough.

(1) Changhong has been attempting to seek a new economic growth point in overseas market because the supply has exceeded demand in China color TV market since the late of 1990's. However, when entering the international market in the initial

period, Changhong still mainly relied on price cut promotion and OEM production to maintain or increase market share, thus lacking effective measures. Presently Changhong has learned from the initial failure in the US market and adopted localization strategy to expand its overseas production bases to detour trade barriers, but patent fees might be a potential negative factor in the future.

(2) Changhong failed in modifying its channel system in time to meet new market conditions in the late 1990's.

Firstly, since the middle of the 1990's, color TVs are not the family symbolic product in China any more, consumer's purchase behavior has already changed greatly. Secondly, with the rapid growth of color TV demand in Chinese countryside, and the increasingly fierce competition in Chinese urban market, some innovative distribution channels has emerged. Thirdly, the ordinary color TV moves into later stages in the product life cycle and high-end color TVs are expected to be the leading items. Meanwhile, Changhong still had no ideas how and when an end sale occurred by excessively relying on the huge-scale wholesalers.

After 1998, Changhong tried to modify its channel system and set up about 200 sales sub-companies around China to work closely with its distributors and dealers. Along with the leadership adjustment in 2000 and 2004, there are frequent modifications in marketing channel system since 1996. However Changhong made a little progress before 2004. Although winds of change blew through Changhong since 2004, its marketing system leaves much to be desired.

(3) In high-end products competition, Changhong is attempting to make a breakthrough by integrating upstream resources. In contrast to other Chinese color TV plants paying more attention to LCD TV, Changhong decides to treat PDP TV, LCD TV, and Rear-Projection TV relatively equally. Presently Changhong has made progress in developing rear-projection TV. And it is planning to purchase the upstream enterprises to gain the competitive advantage in key technology. But, presently there is still a large gap between Changhong and foreign companies in term of key technologies. And it is not clear whether Changhong will continuously gain the independent innovation achievements, patents and inventions in the future.

(4) Faced with increasing competition and falling margins, Changhong is attempting to optimize distribution and its overall supply chain. There is already a remarkable reduction of logistics cost, mainly resulting from placing many logistics-related activities under a single organizational unit, and implement information technology tools. Of course, Changhong's logistics system needs further

improvement.

¹陈永忠,王君迈,裴厚勤, 四川长虹: 大型国有企业改革与发展的成功范例, 中国经济改革研究基金会 (China Reform Foundation), 1999, <http://www.crcpp.org/crf>, accessed on 2006.10.30.

² See supra note 1.

³ by China industrial Information issuing Center, 2004

⁴ by Bureau of economy system reform and economy operation of Ministry of Information Industry of PRC, 2003

⁵ In May 2003, FREI and two US labor organizations submitted an anti-dumping claim to the US International Trade Commission and the US Department of Commerce against high-end color TV exported by China and Malaysia to the United States. The claim maintained that between 2000 and 2002, color TV sets coming from the two countries “rapidly rose from 210,000 sets to 2.66 million sets, up by 1,266%, and were sold at a price lower than their production cost in their respective countries”, thus requesting for levying an 84% anti-dumping tax on color TV from China.

⁶ On 13th, Apr., 2004, the Department of Commerce of USA announced a 24.48% anti-dumping tax would be levied on Changhong color TV exported to US. After the calculation adjustment, the Department of Commerce of USA finally announced a 26.37% anti-dumping tax would be levied on Changhong color TV in May, 2004. Meanwhile the anti-dumping taxes would be levied on other Chinese color TV manufacturers, Prima 4.35%, Kanka 11.36%, TCL 22.36%, Haier, Hisense, Skyworth and other 6 companies 21.49%, 78.45% for the companies without responding to the accusation.

⁷郎咸平,四川长虹滑落原因何在? 郎咸平对倪润峰秋后算账, 2005.12, www.people.com, accessed on 2006.10.30

⁸ According to statistics, Konka Group Co. posted about 700 million Yuan (US\$86.64 million) in loss for 2001, which was the second consecutive year for the company to report significant losses. Hisense Electric Company’s profits also kept declining, with earnings per share dropping from 0.4 Yuan (US\$0.05) when it got listings three years ago to the current negative 0.03 Yuan (US\$0.004)

⁹ It is reported that the net profit is RMB 88.54 million in the annual report of 2001, after adjusting it is reported the net profit is RMB 84.03 million in the annual report of 2002 released by Changhong.

¹⁰ 余菖泓, 四川长虹巨额亏损之谜, 财会月刊, 2005.11: P52-p53.

¹¹ RYUJI SATO, Standing out as a model for reform, Ni Runfeng helped turn ailing state-run company into television giant, 1998.6, <http://www.nni.nikkei.co.jp>, accessed on 2006.10.22.

¹²李少林,专利费达 23 美元/台, 数字电视出口美国无利可图, 中国证券报, 2006.12.27, <http://www.ppac.org.cn/>, accessed on 2006.12.28.

¹³ See supra note 1.

¹⁴ G. Recharadson, 1972; P. J. Buckley, M. Casson, 1976; 佐藤幸人, 1997; 大原盛树, 1998.

¹⁵ 康荣平, 柯银斌. 中国企业核心能力剖析: 海尔与长虹[J]. 中国工业经济, 2000, 3: 64-69.

¹⁶ See supra note 15.

¹⁷ According to an interview by the author with Changhong Logistics Co. (2006.10.24).

¹⁸ See supra note 17

¹⁹ See supra note 17

²⁰ 李黎, 孙永, 长虹集团井喷的信息化建设, e 制造, 2005.10.20, <http://www.emanu.cn>, accessed on 2006.11.24

²¹ See supra note 17

²² China Ocean Shipping Company

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