

An Initial Study on the Intensifying Enterprises Information Management

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ABSTRACT

The information management has become an important base of developing an enterprise's eBusiness. Although our country has spent abundant manpower, material resources and financial support on enterprise information management, most of the information systems were not so good to meet our need and they didn't bring the effect into play sufficiently. Based on the two large questionnaires, this paper has made an initial study and analysis on the status and actual questions of Chinese information management. And then this paper studies the current status of information management of some of the dominant enterprises in Sichuan Province. At last this paper presents some suggestions of intensifying enterprises information management.

Keywords: eBusiness, information management, information resource management

In recent years, Chinese enterprises have spent abundant resources on enterprise informationization, but most of the information systems were not so good to meet our need and they didn't bring the effect into play sufficiently. So the benefit of enterprise information management is rather low. The author believes that one of the main reasons is short of 'intensifying enterprises information management'.

The development of enterprises information management in Sichuan Province is behind of the east. The ulterior study of enterprises information management in Sichuan Province is very important to promote the development of west.

1 THE ANALYSIS ON THE STATUS OF CHINESE INFORMATION MANAGEMENT

1.1 THE STUDY FOUNDATION

This paper has made an initial analysis on the status of Chinese information management that is based on the two large questionnaires.

The report 1^[1]: In 2001, the Economic Information Center of the State Economic & Trade Commission had made a questionnaire on the informationalization status, which reclaimed 638 effectual questionnaires. According to these questionnaires, they got valuable investigate result and analysis report. Among the investigated enterprises there are 231 national key enterprises and 510 state and state holding companies. The investigated enterprises cover the whole country and involve 33 industries such as mechanism、chemical industry、spin、electron、coal、automobile and so on, among which, state and state holding companies account for 79.94%, the other 12.23%, and oversize enterprises 15.36%, lager enterprise 59.4%, medium-sized enterprises 16.46%, other enterprise 2.66%.

The report 2^[2]: In 2002, the State Enterprise Information Work Leading Group Office and the Information Center of the State Economic & Trade Commission made the 4th questionnaire of the level of informationization construct and application of 520 state key enterprises, 120 experimental enterprise groups and district key enterprises, which reclaimed 570 effectual questionnaires, and according to these questionnaires they gained the investigate report of national enterprise informationization.

The two reports carry preferable authority and reflect the information management status of the dominant enterprises in China by some degree. As there are some difference between the reports, this paper integrate them and give a complete analysis of the information management status of the enterprises in China.

1.2 RESEARCH CONTENT

(1) The management status of enterprise information human resource

The investigation of information human resource all takes the first place in the twice questionnaire reports, which reflect that the persons with ability is very important in enterprise information management.

According to the second report, some of the investigated enterprises in 2002 pay more attention to the information management.

83.3% enterprises have set up the position of CIO which is corresponds to vice general manager; 89.1% have set up the position of full time personnel to run and maintain information system; 86.7% enterprises have rebuild and upgrade their system according to the development of technology and operation requirement; 74.9% enterprises have taken training informationization talent as a focus of their work; the proportion of setting up the position of CIO in 2002 have increase 14% compares to that in 2001. But the information skilled personnel just account for

0.72% of the employee total number, namely, there is lower than one information skilled person among every 100 employees. The compound backbone personnel who not only knows well IT ,but also is familiar with operation flow and enterprise management is quite lacking, which infect the development of enterprise information management.

(2) The foundation establishment construction of enterprise information management (the report 2)

The rate of possession of computers and access Internet is elevated. Every one hundred persons have 7 computers, every manager has 0.77 computer. In some enterprises, one person has computer. The number of computers, which access to Internet is about 68.4%.

Most enterprises have established intranet、internet and Portal. The coverage and application range of all kinds network are extended which have held every administrative levels, especially management department and core operations.

The method to access Internet of most enterprises has been close to advanced lever and the bandwidth is widened. The intranet bandwidth of 77.7% enterprises is 100 MB to 1000MB, 76.4% enterprises' desktop bandwidth come to 10-100MB and most enterprises' internet bandwidth is more than 1MB, which reaches the lever of high speed transmit channels.

Most enterprise have spent abundant fund and are provided with foundation. Many enterprises have build their portal, but the content isn't updated in time, and the columns of many enterprise portal are the same and lack of individuality, which is hard to bring benefit to enterprises.

(3) The construction of enterprise information system (EntIS, the report 1)

Tab.1 is the summarization of the Report 1.

The implementation rate of some information system is quite low, the rate of CAD/CAM is tiptop but just close to 9%.

**Tab.1 The input and construct status of EntIS
(unit: Million Yuan)**

CAD/CAM	Total input	Construct status			
	12.97	Full realization	Partly realization	Not take measures	Unknown
		9%	50%	19%	22%
Basal MIS (OA, MIS)	19.42	8%	59%	18%	15%
Integrated MIS (ERP, CMIS)	0.86	5%	31%	44%	20%
eBusiness system	2.78	1%	23%	55%	21%

In 2000, there are just 138 enterprises putting eBusiness in practice, which is 21.6% and those of full realization eBusiness system only occupy 1%. The collectively Level of eBusiness is just the age of primary stage.

(4) the status of information share (the report 2)

The proportion of inter-linkage and mutual communication in different system is lower than one third most of which just is limited to the range of department and local computers. The number of full realization information share is 41, which just account for 7.2%, the number of partly realization information share is 336 which just is 59%, and the number of unfulfilment information share is 193 which is 33.9%.

Unfulfilment enterprise information share will cause Information isolated Island, and the superiority of information management can't be brought into play. The most important reason is lack of collective layout、system design and durative optimize strategy.

(5) The value brought about by using MIS (the report 2)

About 36.7% companies enhance the ability of deliver the goods in time; 77.5% reduce the cost(such as buying cost and overtime cost); 67% reduce the total production maintenance and productive time of a working; 64.6% increase the sales income; 66.3% increase the velocity of flexible capital. Information management increases the value and benefit of the company, the application focuses on the operation management, and few involve management and strategy level.

Comparing report 1 with report 2, we have the finds:

(1) In report 2, there is the investigation about collective layout of enterprise informationization which isn't mentioned in report 1 and enterprises pay more attention to collective layout of informationization.

(2) The key system content has been changed and enterprises pay more attention to the technology of Data Integration and Data Warehouse.

- The systems of ERP、Intranet、EC、OA were made as the four key systems in the report of 2001.
- According to the Statistics of report 2, the systems of ERP、OA、Intranet、data integration and data warehouse were the emphasis of next one-step information construction.

1.3 EXISTENT PROBLEMS

The information management has made some progress in china, but now the level is low. The main problems are:

(1) The focus of information management is in the data processing in a low level.

(2) Enterprises are lack of reasonable and effective collective layout in implement of information management.

(3) Enterprises' information resource has not been made good use and the lever of share information resource is low.

(4) They just can be used as to deal with some simple affairs and can't provide effective decision making to middle and high level.

2 THE CONTRAST ANALYSE OF THE INFORMATION MANAGEMENT IN SICHUAN'S PREPONDERANT ENTERPRISE

According to the Report 2, there are 360,000 industry corporations in Sichuan province. Among them, there are 292 large enterprises, 578 medium-sized enterprises, 4230 state-owned enterprises, 60,000 collectively-run enterprises, 290000 individual enterprise in town including other 3195 industry enterprise such as private enterprise, foreign investor and Hongkong, Macao, Taiwan investment enterprise and 73 stock limited companies. There are 5 well-known enterprises in Sichuan province, they are Changhong Co. Ltd., Lu Zhou Ancient Cellar, Wuliangye Group, Langjiu Group and Sichuan Jiannanchun Group Co. Ltd. Besides, there are 216 province's famous-brand enterprise and 230 province's famous-brand products.^[3]

2.1 RESEARCH SAMPLES

This paper choose 12 typical enterprises, they are Sichuan Changhong Electric Co. Ltd., Sichuan Electric Power Company, Pan Steel Group Co, Wuliangye Group Co. Ltd., Chengdu Aircraft Industry Corporation, Sichuan Jiannanchun Group Co. Ltd., Chengdu Enwei Group, Telecommunication Corporation of Sichuan province, Chengdu Cigarette Factory, Chengdu Pepple's Department Store (group) Co. Ltd., Dong Fang Steam Turbine Works, New Hope Group.^[4]

Tab. 2 is the rank of the top five enterprise in Sichuan^[5]

Tab. 2: the rank of the top five enterprise in Sichuan

Enterprise Name	Rank by sales	Rank by general asset	Rank by profit	Rank by tax
Changhong Co. Ltd.	1	5	3	6
Electric Power Company	3	1	9	4
Pan Steel Group Co.	2	3	2	3
Wuliangye Group Co. Ltd.	4	6	1	2
Chengdu Aircraft Industrt Corporation	11	10	96	157

2.2 DATA ANALYSIS

Through analyzing the data of enterprise information management above-mentioned, there is a conclusion of the 12 enterprises information management.

(1) The status of department's MIS and the construction of LAN.

Tab.3 is the status of department's information management

Tab.3 The status of department's IM

	Already established	unknown
Realizing department's information management system	7	5
Intranet been established	9	3

Among the 12 enterprises selected, a majority of them have equipped with computers in their departments and established the intranet, the cover and application range of which have increased and expanded to every lever of enterprise, especially management department and core operations.

(2) Ways of information exchange between enterprises and outside

Table 4 is the Way of information exchange between the enterprise and outside

Mostly, those who have constructed websites are successful enterprises. Among them, the website construction of the Chengdu Enwei Group is a successful one. By the year of 2003, its website has provided more than 30 channels, 500 items and 20000^[6] web pages. Also, Sichuan Jiannanchun Group Co. Ltd. has set functions of inviting public bidding for providers and booking service on line, which ranges at the top of the website-construction.^[7]

Tab. 4 Ways of information exchange between the enterprise and outside

	Website	E-mail	Center of customer service
Number of enterprises	10	8	2

Among the 12 enterprises, there is 8 ones which have opened their own email boxes. Sichuan Electric Company has communicated interior information through email. Meanwhile, Pan Steel Group Co uses email for information transmission and has established the internet node web which can transmit files, gather and publish information by means of FTP, WWW etc.^[8] Likewise, Chengdu Aircraft Industry Corporation has realized the communication with some factories through internet, such as Boeing. Similarly, Changhong Co. Ltd. has

constructed the program of CIQ Computer-connected Supervision on machining and trading, and with the ERP system of SAP the efficiency of passing CIQ examination has been improved greatly^[9].

However, there are some problems existed as follows:

- Website columns are similar and there is lack of contents with characteristics.
- The supporting of enterprise's internet information is weak. The weak base of interior information management leads to that it is not timely and efficient enough to integrate, gather, transmit and share all kinds of information.

(3) Establishment of the information system

Tab.5 is the establishment of the Information System

Tab.5 Establishment of the Information System

	Already realized	Not yet	Unknown
CIMS	6	5	1
OA	7		5
ERP	2	10	0

As we can see from the table above, most of the manufacture enterprises have realized CIMS and OA is a major project of enterprise-construction. Basically, nearly every enterprise has realized the Financial MIS. And some enterprises have realized ERP system such as Changhong Co. Ltd. etc.

Among the 12 enterprises, the investment of information construction of Changhong Co. Ltd. has reached 100 million Yuan, and another 100 million Yuan will continue to be used to perfect the construction^[10]. Similarly, to popularize the enterprise's computer management, Chengdu Enwei Group has put the application at a higher level in the beginning. Several years ago, with large amount of money, Chengdu Enwei Group bought the PC system、top grade data storage and stock system、Sybase large relational database system from SUN Company. Meanwhile, other enterprises also have devoted much money into the information construction, such as Sichuan Electric Power Company、Sichuan Telecom、Chengdu Cigarette Factory、Pan Steel Group Co etc. As their conscious of information strengthened, the degree of information investment has increased.

However, there are still some problems existed: the degree of information construction fund devotion is still not enough. Take Changhong Co. Ltd for example, its total capital is 17637511700 yuan^[11]. But the absolute devotion proportion in information is merely 0.58%, which is far away from oversea enterprises normally about 8% to 10%.

(4) Application of information

Sichuan Jiannanchun Group Co. Ltd. has done quite well in gathering and using of information resources. And document information center of it plays double functions in document information storage、using and document administrative management and supervision. In the year of 2002, the corporation established the enterprise information base from its document library. With the international internet information from Xinhua News Agency, the corporation has directly saved more than 30million Yuan from material-purchasing, technology improvement, environment protecting and so such programs.

(5) Implement of eBusiness

Many enterprises have made primary attempts in eBusiness such as Chengdu Pepple's Department Store (group) Co. Ltd.、Chengdu Enwei Group、Sichuan Jiannanchun Group Co. Ltd.. But due to the limitation of capital、talent、the base of information、balance and safety of trading, the development of eBusiness still stays at a primary period.

2.3 Analysis of the results

As we can see from the above 12 dominant enterprises in Sichuan Province, their information management level stands for the advanced level of Sichuan Province in enterprise information management. However, these advanced enterprises are still at a lower level in information management. Thus, intensifying information management becomes an important task. Then from the present state of the enterprise information management in Sichuan Province, we can come to the following analysis:

(1) Status of basic facilities of enterprise information management

- Hardware. Computer application has been popular in most enterprises of Sichuan and they can deal with data with computers.
- Network construction. According to report 1, in the year of 2000, among the key enterprises in Sichuan, 54% of them have established their websites, and 13% have simple web pages, but still 29% haven't established yet. By the year of 2002, the proportions of enterprises that have established websites have increased to 71%. Many famous enterprises such as Changhong Co. Ltd and Wuliangye Group Co. Ltd. own their special websites and domain name.

(2) Construction of information system

Part of those enterprises, we take DongFang Steam Turbine Works for example. According to its trait as a discrete manufacture enterprise, it has realized enterprise information management, which helps the corporation to have been a supplier of America GE Company. Another part of those enterprises such as Chengdu Xuguang Electronics Co. Ltd., according to its characteristic in enterprise production and management, has designed and explored application software. Then step by step, it has realized information integration and data sharing of the process of purchasing, sale, stock, production and finance. Moreover, the functions of supervising, controlling, coordination become more normative, which strengthen the competition ability of the enterprise.

(3) Management software

Most enterprises adopt the homemade software, which are suitable for the enterprises' actuality, such as Chengdu Cigarette Factory. The software can basically satisfy the present need of the enterprises, with better services and the cost is much lower than foreign software.

The main problems existing in enterprise information management of Sichuan Province are as follows: Low benefit of information management; lacking of efficient total layout; still focusing on low level data processing; low level of information resource sharing; lacking of efficient strategy support; weak economic strength as a whole of Sichuan enterprises, even smaller amount of money can be used in information management; serious flowing-out of informative people in Sichuan enterprises. Thus, intensifying information management of Sichuan enterprises should be paid special attention to, through which enterprises of Sichuan can strengthen their key competition ability efficiently.

3. STRATEGY OF INTENSIFYING INFORMATION MANAGEMENT OF SICHUAN ENTERPRISES

The process of intensifying information management in enterprises is complex. Then we can consider the following aspect as a manager.

3.1 MAKING STRATEGIC PLANNING ON ENTERPRISE INFORMATION RESOURCE MANAGEMENT (IRM)

Making strategic layout on enterprise IRM has a quite important meaning in intensifying enterprise information management. Fig. 1 shows the process.

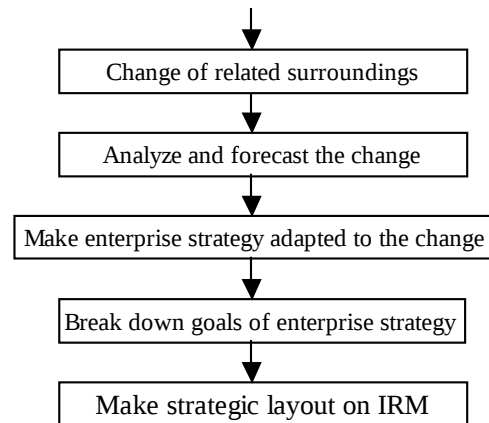


Fig. 1 Process of whole layout

3.2 STRENGTHENING THE ENTERPRISE' IRM

To strengthen enterprise' IRM, we can consider the following aspects: to make clear of the main task of enterprise IRM; to make strategic layout of enterprise IRM; to cultivate the information conscious of personnel; to set up right information concept; to set basic standard of IR; to improve the status of information management department and set related data management persons; to make plans that are scientific and reasonable in IR distribution and using; to develop and make use of information reasonably and efficiently; to supply different information according to different needs.

3.3 CONSTRUCTING ERP

It is important of BPR to intensify enterprise information management. The idea of BPR was first raised by Hamer and Qianpin^[13]. Literature [14] puts up the idea of process management, which centralizes on constructing end to end business process in standardization, and it is a systematical method with the aim of continuing to improve the business performance of the organization. The idea of process management calls for systematization and continuous improvement of process, so as to reduce the manual resistance in practice, which is more suitable for Chinese enterprises.

Process management reduces the risk of BPR. The average level of the enterprise development in China is fall behind than developed countries. Therefore, in the process of putting BPR into practice, a complete, thorough process will bring up great risk to enterprises. Thus, of enterprises' managers should consider carefully before using the method of BPR, according to their ability to stand risks.

4. CONCLUSIONS

This paper has analyzed two authoritative sample survey materials of enterprise information in China. Besides, there are also some researches and analysis on the examples of 12 typed enterprises information

management in Sichuan. From these analyses, we find there are some common problems such as the information system aren't in full use and the benefit of information management is in a low state. One important reason of these problems is that enterprises didn't pay high attention to intensify information layout on enterprise IRM. Another is to strengthen the enterprise IRM. And the last one is to construct the enterprise MIS on the base of BPR.

REFERENCES

- [1] The report of the status of Chinese enterprise informationization construction and the '10th Five Year Plan' [EB/OL]. <http://www.chinabbc.com.cn/yljc/view.asp?newsid=20041211167835&classid=>, 2002-2-10
- [2] The investigation of enterprise informationization in 2002 [EB/OL]. <http://www.setc.gov.cn/qyxxhjyxal/200302130071.htm>, 2003-02-13
- [3] General situation of enterprises in Sichuan province [EB/OL]. <http://www.sc.gov.cn/html/qiyexhaixian/CQGK.asp?id=13>, 2003-04-06
- [4] The list of the dominant enterprises in Sichuan Province [EB/OL]. <http://www.ctisc.com.cn/download/scys.htm>, 2003-04-15
- [5] The rank of 500 industry enterprises in Sichuan Province [EB/OL]. <http://www.scjm.gov.cn/gyqypx500asp?id=15>, 2002-03-18
- [6] The prospect of Chengdu Enwei Group [EB/OL]. <http://www.enwei.com.cn/medicine/bussiness/dsptext.asp?file=20029240203050001.htm&lmdm=020305>, 2003-04-16
- [7] The purchase of material [EB/OL]. <http://www.jnc.com.cn/yclcg/index.htm>, 2003-04-03
- [8] The informationization construction of Pan Steel Group Co. [EB/OL]. <http://www.scmie.com.cn/msmie/anli/pangang.asp>, 2003-05-12
- [9] The experience of informationization implement of Sichuan Changhong Electric Co. Ltd. [EB/OL]. <http://www.cseek.com/Enterprise/218718151532085248/20040713/1830464.shtml>, 2004-07-13
- [10] The informationization construction of Sichuan Changhong Electric Co. Ltd [EB/OL]. http://chengdu.ccw.com.cn/news/200209/0916_01.asp, 2002-09-16
- [11] The bulletin of public listed company in Shanghai Market [EB/OL]. <http://www.eefoo.com/xxzycontent/2002/0328/200203283003.asp>, 2002-03-27
- [12] Raymond McLeod, George Schel Management information systems—Theory and practice in the guide of management (translated by Zhang Chenghong) Beijing: Publishing House of Electronics Industry, pp27-29, 2002
- [13] Wu Xiaoming. BPR: Business Process Reengineering. *The transaction of Institute of Chongqing Industry Management*, Vol. 13, No. 1, pp44-48, 1999
- [14] Huang Aizhou, Mei Shaozu. Surpass BPR—Research on Management Thought of Process Management. *Scientific and Technology Management*, No. 12, pp105-107, 2002