

## **STUDY ON MINING BIG USERS DATA IN THE DEVELOPMENT OF HUBEI AUTO-PARTS ENTERPRISE**

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### **ABSTRACT**

It's a low-input and low-risk green transformation mode to mining big users data in the midst of transformation, encouraging the development path of auto-parts enterprise to transit from technology leading to management leading. To study the technological innovation in Hubei auto-parts enterprise, some methods are carried out, such as data collection, comprehensive analysis, expert questionnaire and empirical research. Based on the analysis of Hubei auto-parts enterprise development, a whole set of strategy is proposed to promote the development path transition of Hubei auto-parts enterprise and ultimately achieve leapfrog development.

**Keywords:** Auto parts, Technological Innovation, Big users data, Green Development.

### **1. INTRODUCTION**

As we know, Chinese government has proposed a Ten Industrial Development Plan and Made in China 2025 one after another to promote national industry. Among the many industries, the automobile sector is recognized as the most important manufacturing and logistics industry, and it is the only sector of the manufacturing industry in the Ten Plan that also involves the tertiary (service) industry accelerating the transformation of the economic development mode has become a new historical task for all industries [1-4]. As a major province of auto-making Hubei province should take a lead in the development transition in the auto-parts industry. Automobile industry has certain advantages to be a forerunner of development path transition with long industry chain, great influence and good conditions. However, we should also realize that automobile industry is both capital-intensive and technology-intensive, which means big investment and slow start, making technological shift a long way to go. The auto-parts industry cannot wait and has to find out another way. To successfully make the transition from technology leading to management leading, we should choose the low-input and small-risk green transformation mode, which is to introduce the idea of big users data and promote auto-parts industry green development. To explore the development of Hubei auto-parts industry, our research group makes a monographic study by some methods such as data collection, comprehensive analysis, expert questionnaire and empirical research, putting forward a

whole set of strategy to promote the development path transition of Hubei auto-parts enterprise through big users data mining, and ultimately to achieve leapfrog development. "If businesses are to survive and prosper, managers must become more astute at selecting new product winners". The concept of big data has been defined through the 3V model, which was defined in 2001 by Laney [5] as: "high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making".

### **2. The current corporate development status of Hubei auto-parts industry**

Hubei province, which is located in the central of China, has a well-developed traffic and a complete processing, manufacturing system. It is not only one of three major automobile production bases in China, but also a big manufacturing province for automobiles and auto-parts. Benefitting from Hubei industrial policy of automobile as well as the powerful education of science strength, Hubei auto-parts industry is in good development status, with its business management gradually approaching the international level. Nevertheless, there are still several serious problems, including an obvious dual structure, a lack of innovation, and a low level of market, technology as well as management.

## **2.1. Hubei auto-parts industry is well-grounded, the industrial policy is positive and the dual structure is prominent.**

After years of development and structural adjustments, especially in the last few years, Hubei automobile industry has been a strong leader-led and showed a great demonstration effect, forming a good momentum of development [6]. At the same time, the dual structure is prominent.

In the first place, DongFeng Motor Company with some other auto corporate has many kinds of automobiles and corresponding component services. With a new round of joint-venture partnership in Hubei automobile industry and the adjustment of product structure, especially the extensive collaboration in the full range models of passenger vehicles as well as commercial vehicles between Dongfeng Motor Co. and Nissan Motor Co, Dongfeng Commercial Vehicle established three major platforms: carrying vehicle, passenger cars and SUV. Recent years, the degree of Hubei automobile industrial concentration is raised dramatically, and group companies are the trend of automobile corporations, forming a batch of large-scale companies such as Dongfeng Motor Co. Besides, reconstruction has helped the leading companies accumulate productivity advantages, enhancing the overall strength and competitiveness of Hubei automobile industry.

In the second place, among the auto-parts enterprises above province size, about 85% of them are concentrated in cities such as Shiyan, Wuhan, Xiangfan, Huanggang, Jingzhou, Suizhou, to be more specific, 31% are in Shiyan, 19% are in Wuhan, 10% are in each of the remaining cities. Most of Hubei major auto-parts enterprises are located in these two districts and the total proportion of product category, capital, sales revenue, taxes and in these districts is larger than 90% of the total amount of Hubei province. Meanwhile, they are highly complementary and correlated, with an obvious gathering advantage of industrial clusters, indicating that the industrial agglomeration has begun to form. Hubei auto-parts industry has grown strong following Dongfeng. After decades of development, the industry has established a relatively complete auto parts manufacturing and developing system, and the market has formed all-dimensional, diversified, multi-layered pattern.

In the third place, Hubei auto-parts enterprises are confronted with new problems in the external environment. As for policy, Hubei government has embarked on a series of industrial rejuvenation programs, which give the automobile industry a priority, creating a favorable environment for auto-parts industry development. In the market, the global sourcing of auto-parts has entered its mature period, and the procurement system has stabilized. Most of Hubei auto-parts enterprises depend on Dongfeng Motor Co., while commercial vehicles are influenced by macro-economic policies and passenger vehicles are mainly foreign-funded. Under this circumstance, the further development of auto-parts has been restricted. In recent years, Hubei local car companies only achieve minimal production

growth during to various reasons, and among them there are few premium brands, limiting the future development of the supporting auto-parts enterprises. As a result, the fast development of auto-parts industry in other provinces such as Zhejiang, Guangdong, Jilin and Shanghai will strongly squeeze Hubei auto-parts enterprises.

In the fourth place, the dual structure of Hubei auto-parts industry is prominent. On the one hand, there are state-owned enterprises which have international level management as well as complete capability of independent innovation; on the other hand, there are also many enterprises at stage of extensive management.

In the face of the complex external environment where there are both opportunities and challenges, internal development is an inevitable choice for Hubei auto-parts enterprises to exist and grow in competition.

## **2.2. Parts enterprises in Hubei user concept are weak and they are lack of user culture**

Hubei Province has profound historical and cultural precipitation. But during the development of the market, due to the late start of the overall reform and opening up policy of the inland provinces, their business concept generally lag behind the Pearl River Delta, Yangtze River Delta's car parts enterprises.

First, they lack of concepts of outward development and their foreign trade advantages isn't fully played. Being derived from the auto companies, most auto parts business do not need too much to consider market factors, the direct contact with the users is mostly achieved through the car companies, parts enterprises rarely take the initiative in direct contact with customers. At the same time, as an inland province, Hubei started late in the opening up reform, and its marketization isn't enough in depth. In the aspect of foreign trade, Hubei accumulates a wealth of experience in cars, clothing and commodity, and has a clear comparative advantage. But compared with Zhejiang and Guangdong, the advantages are not enough yet.

Second, parts industry in Hubei Province lacks of user concept is not enough (Table 1). A survey is conducted among 39 companies in the auto parts industry in Hubei Province, including 10 state-owned enterprises, 15 private enterprises, 5 joint ventures enterprises, 5 wholly foreign-owned enterprises, 4 other enterprises, involving Shiyan, Xiangfan, Suizhou, Wuhan and Yichang five cities. The statistics found that most companies didn't have market sense and user concept. 49% of them have no clear mission statements. 28% have no corporate vision. Even in those who have corporate visions, 41% of the visions are just echoing what others have said and existing in name only. Little has complete system of corporate culture. More than 80% of enterprises haven't involved in the market concepts and user.

**Table 1.** The survey about corporate culture factor of Hubei auto-parts industries

total	corporate culture factor	statistical items about core idea thinking(amount to 39 firms )												
39 firms (1)	cost	no.	competitiveness	save	no waste	—	—	—	—	—	—	—	—	—
		36	1	1	1	—	—	—	—	—	—	—	—	—
		0.92	0.03	0.03	0.03	—	—	—	—	—	—	—	—	—
	security	no	radical	prevent	benefit	—	—	—	—	—	—	—	—	—
		34	2	2	1	—	—	—	—	—	—	—	—	—
		0.87	0.05	0.05	0.03	—	—	—	—	—	—	—	—	—
	research & development	no	innovate	team-work	need	bear	specialization	—	—	—	—	—	—	—
		27	4	3	3	1	1	—	—	—	—	—	—	—
		0.69	0.1	0.08	0.08	0.03	0.03	—	—	—	—	—	—	—
	vision	no 1 in china	no	no 1 in the world	no 1 in china	good firm	giant	good product	—	—	—	—	—	—
		11	9	9	4	3	2	1	—	—	—	—	—	—
		0.28	0.23	0.23	0.1	0.08	0.05	0.03	—	—	—	—	—	—
	marketing	no	client	service subdue	need	customer	brand	benefit two party	credit	—	—	—	—	—
		19	8	6	2	1	1	1	1	—	—	—	—	—
		0.49	0.21	0.15	0.05	0.03	0.03	0.03	0.03	—	—	—	—	—
	management	no	human	lean	improve	innovate	efficiency	practical	speed	perfect	—	—	—	—
		19	6	4	2	2	2	2	1	1	—	—	—	—
		0.49	0.15	0.1	0.05	0.05	0.05	0.05	0.03	0.03	—	—	—	—
	philosophy	no	system	harmonious	perfect	honest	deep	lean	cohesion	good	—	—	—	—
		27	3	2	2	1	1	1	1	1	—	—	—	—
		0.69	0.08	0.05	0.05	0.03	0.03	0.03	0.03	0.03	—	—	—	—
	mission	no	duty	country	industry	perfect	good	leader	operate	goods	—	—	—	—
		19	6	4	3	2	2	1	1	1	—	—	—	—
		0.49	0.15	0.1	0.08	0.05	0.05	0.03	0.03	0.03	—	—	—	—
	human resource	no	fair	compete	character	people first	ability & honest	efficient	true skill	respect	—	—	—	—
		21	5	4	3	2	1	1	1	1	—	—	—	—
		0.54	0.13	0.1	0.08	0.05	0.03	0.03	0.03	0.03	—	—	—	—
	quality	no	client	character	lean	perfect	life	moral	perfect	duty	satisfied	—	—	—
		19	5	3	3	3	2	1	1	1	1	—	—	—
		0.49	0.13	0.08	0.08	0.08	0.05	0.03	0.03	0.03	0.03	—	—	—
spirit	team work	no	true	practical	super	innovate	honest	prove	devotion	lean	quick	—	—	
	8	6	5	5	4	3	2	2	2	1	1	—	—	

		0.21	0.15	0.13	0.13	0.1	0.08	0.05	0.05	0.05	0.03	0.03	—	—
	value	social	improve	our future	customer benefit	performance	honest	human	duty	serious	quality	perfect	—	—
		7	5	4	3	2	2	1	1	1	1	1	—	—
		0.18	0.13	0.1	0.08	0.05	0.05	0.03	0.03	0.03	0.03	0.03	—	—
	operation	no	goods	client need	continuous improvement	our future	specialty	honest	innovate	internationalization	speed	user satisfied	technology	benefit
		9	5	4	3	3	3	2	2	2	2	2	1	1
		0.23	0.13	0.1	0.08	0.08	0.08	0.05	0.05	0.05	0.05	0.05	0.03	0.03

all aspects of the production being very careful in the operation of reckoning, implementation a just-in-time production, to

### 3. THE IMPORTANCE AND NECESSITY OF HUBEI AUTOMOBILE PARTS INDUSTRY TO PROMOTE THE BIG USER DATA APPLICATION.

Today Static Web sites are long gone as user participation has become integral in most sites. Based on massive participation of Internet users, Product Innovation is lean thinking in the big data era practice essentially, the ideological core of which is the elimination of all waste, continuous improvement and innovation, the pursuit of each of the sessions to create the greatest value to get more output with less input and ultimately makes businesses to profit [1]. Faced with competition in the market and resources, big user data applications will become traditional enterprise restructuring and development of the inevitable choice.

#### 3.1. Large-scale users to participate in product design become the future trend.

The introduction of big user data will play a key role in the great-leap-forward development of the automobile manufacturers in the economic transformation; the millet mobile phone is a typical successive example. Although it doesn't belong to the mobile phone industry, its sales reach up to ten thousand overnight. How to become a sales giant in this industry? It is up to its fans and the big user data .The most important thing is that massive user participation come into being so much data, which make the product design precise to fit the needs of users, and let the product sales become very simple. The success of user participation leads the global industry to enter the era of market management. The automotive industry in Hubei province is in an important transition period, there is an urgent need of new ideas, new culture, and the import of big user data is in the right time.

#### 3.2. The need of Hubei auto parts enterprises to change the development mode.

One of the characteristics of the economies in transition is slower growth, enterprise development being toward the meticulous management direction, which requires companies in

reduce the amount of funds used, to improve the security of supply. Big user data plays an irreplaceable leading role in meticulous management. Currently, auto parts enterprises in Hubei Province, especially small and medium-sized enterprises face saving energy, raw material prices, rising labor costs, funding constraints and difficulties in financing difficulties, facing pressure to accelerate the transformation of development mode. Based on the auto company plans and requirement, Traditional automobile company has lost advantage in time, cost and utility. So auto parts enterprises should face to face with the end-user, develop product initiatives, and expand the scale of direct sales and so on. These all need dig demand from big user data.

### 4. THE MAIN IDEAS AND COUNTERMEASURES OF AUTO PARTS BIG USER DATA APPLICATIONS

When Spare parts industry in Hubei province implement big user data applications, they cannot simply copy the traditional E-commerce business model. Instead it is necessary to consider the current status quo of economic development in Hubei province and cultural background, and then establish a practical combined with the overall thinking and effective measures. This is the foundation to successfully promote big user data applications.

#### 4.1. The main concept to accelerate big user data applications

Set up the conception of “use big data to master the enterprise”, “take data user to promote development”. Led by the provincial party committee propaganda department and provincial assoc, provincial scientific research institutions, set the goal of promoting great-leap-forward development. Combine big user data as “national big data strategy” booster as speeds up the economic development mode change the soft strength. Big user data dares to “be the first” spirit of Hubei province, combining construction to cultivate advanced enterprise culture, and actively promote big data thriving

enterprise strategy. Take efforts to use the advanced enterprise big data to lead development, enhances the enterprise the innovation core competitiveness.

#### **4.2. The concrete measures and countermeasures to speed up big data strategy.**

As the policy maker, resources allocation master, and the enterprise development leader, the government plays an irreplaceable important role in the construction process of advanced enterprise big data. Start from the point of promoting economic restructuring; establish a long-term mechanism to promote big data strategy.

First is the department synergy to big data construction and service the enterprise transformation. The propaganda department of party committees at all levels, and the federations of industry and commerce should start form servicing economic transformation, to carry out targeted special investigation, summarizes the good experience and practices, guiding parts enterprises big data construction, and finally implement green development strategic transformation.

The second is the platform synergy to big data research to promote enterprise development. Innovate comparatively and collaboratively, take full advantage of talents of Hubei. Based on the national social science fund, the Guangdong provincial humanities social sciences fund, as well as enterprise big data promotion association at various levels of Hubei province, the organization ought to carry out the enterprise big data important subject research, regularly held conferences on big data construction, summarize the transformation of the construction of enterprise big data inherent law and operation method, establish and perfect big user data theory system, improve classification guidance to promote enterprise big data construction level, in order to strongly propulsion coordinated and sustainable development in Hubei.

The third is collaborative enterprise to big user data construction of system and mechanism, as well as promote the management level. Government departments at all levels should take the lead to explore various ways of organizing, guide enterprise big data construction from different sizes and different systems. The Party Committee, the board of directors and the management team and the main operators ought to play a leading role in the enterprise big data construction. Collaborative enterprise to establish an effective management system, perfect education system, scientific evaluation mechanism and powerful safeguard mechanism .Strengthen the special funds investment and policy guarantee for enterprise big data construction, to provide the necessary financial support and material guarantee for big user data construction. Take the economic restructuring as an opportunity to implement corner beyond, comprehensively promotes auto parts enterprise management level, thus enhancing the globalization of Hubei province automobile industry competitive ability.

The fourth is overall synergy to big user data construction; explore the development law by practice. Condense various sectors, integrate various resources and explore lean enterprise big data practice research multivariate. The competent departments at all levels should strengthen guidance to enterprise big data construction. They should also stand in the

height of economic transformation to carefully analysis enterprise facing the objective situation and the development tendency.

#### **5. CONCLUSION**

It's a low-input and low-risk green transformation mode to introduce big user data in the midst of transformation, encouraging the development path of auto-parts enterprise to transit from technology leading to management leading. To study the construction of big user data in Hubei auto-parts enterprise, some methods are carried out, such as field survey, data collection, comprehensive analysis, expert questionnaire and empirical research. Based on the analysis of big users data, a whole set of strategy is proposed to promote the development path transition of Hubei auto-parts enterprise and ultimately achieve leapfrog development.

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