Research on Enterprise Value Creation and Employee Value Creation of Manufacturing Enterprises

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Abstract

Employees are one of the important sources for creating enterprise value. The paper takes W company as a subject in order to research the relationship between the enterprise value and employee value creation. The research first defines the employee value and the enterprise value, then calculates the enterprise value of W company, selects the indexes for measuring the employee value, and subsequently studies the relationship between the creation of enterprise value and the creation of employee value. The results shows the key points affecting the enterprise value lies in the welfare policy and the employee training provided by the company.

Key words: *enterprise value; employee value   ; manufacturing enterprises; welfare;training*

1 Introduction

The concept of value is always an original starting point and final source of theory of economics. Starting from axiology by Adam Smith, the research on theories of value is continuous. William Petty presented the theory of labor creating value in his works Treatise on Taxes and Contributions in 1662, and Adam Smith, David Ricardo and Marx, et al. developed and improved the theory of labor creating value, forming now general sense of labor value theory. Marginal utility theory of value was further proofed by Mengr and Jevons et al. on the basis of researches by Say, Gaussin et al., and finally further developed by Wisser, Bohm-Bawerk et al., thereby forming a complete theory system. As time changes, the labor value theory and the value theory are continuously expanding and developing, and the value growth of modern enterprises is becoming increasingly dependent on value created by intangible capital, human capital, organization capital, ecological capital, etc, forming a capital value theory. As the society develops, the capital tends to be hidden, humanized, intelligentized and naturalized.

2 The definitions of enterprise value creation and employee value creation

2.1 Definition of enterprise value

From the perspective of economics, the enterprise is also a kind of commodity, and the enterprise features attributes of general commodities, with value and use value. The enterprise

value creation herein refers to in order to achieve the customers' value pursuit[1], on the basis of making customers totally satisfied, the investors and the employees are also benefited, thereby finally facilitating the appreciation of the enterprise's own economic value. Briefly speaking, the enterprise value is the sum of value transferred by the customers, enterprise's own value and social value.

2.2 Definition of employee value

With regard to how to define the value of enterprise employees, scholars both at home and abroad, from differing perspectives, define the value of enterprise employees by means of two measuring patterns, i.e. cost points of view and value points of view[2, 3]. Cost points of view mainly measures the value generated by human resources via input of human resources, i.e. input=output. While value points of view determines and evaluates the value of enterprise employees based on their outputs, including input of enterprise employees and value appreciation generated by themselves.

Value of enterprise employees herein mainly comprises surplus value and compensation value created by the enterprise employees through work. Where surplus value means value added created by laborers through work, and compensation value refers to salary, bonus, etc earned by the laborers through work.

3 Measuring of W company's enterprise value and its methods

W company is an iron and steel enterprise, is a typical manufacturing enterprise. In terms of evaluating the value of an enterprise, a financial index is an essential index, which could reflect the enterprise value, however, enterprise value would not only embodied by financial index. As knowledge economy approaches, the enterprise value is given a new meaning. Among an enterprise's production factors, more intellectual capital or human capital is included, which plays an increasingly important and essential role in the enterprise's production and operating activities and the process of forming enterprise value.

3.1 Index selection

For better measuring of W company's enterprise value, the paper chooses three primary indexes and six secondary indexes to establish the enterprise value index so as to evaluate W company's enterprise value. The three primary indexes are respectively the enterprise's market value, the enterprise's organizational value, and the enterprise's development value. See Fig.1 for primary indexes and secondary indexes for measuring.
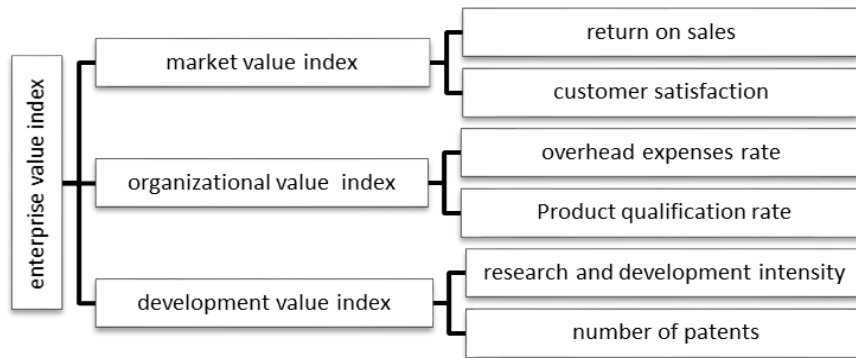
Fig.1 Diagram for enterprise value indexes

3.1.1 Measuring index illustration

(1)Market value index

Choosing return on sales is due to the fact that the index can measure level of the enterprise's sales revenue, and can reflect the results of enterprise creating value, whose computational formula is as follows:

$$\text{Return on sales=total profit/operating revenue}\times100\% \qquad (1)$$

Customer satisfaction refers to customers' feel about the degree of satisfaction in terms of express, normally implied or imperative demands or expectations. Satisfaction is a feedback from customers, which is an evaluation of products or service performance, as well as products or services themselves; it gives (or is giving) a level of happiness regarding consuming satisfaction, including levels lower than or exceeding satisfaction, which is a psychological experience.

(2)Organizational value index

Overhead expenses rate is the ratio of overhead expenses versus main business income, and its computational formula is as follows:

$$\text{Overhead expenses rate=Overhead expenses/ main business income}\times100\% \qquad (2)$$

The enterprise produces final products through these processes. Whether the processes could produce qualified products or not can be measured by product qualification rate, which reflects the product quality of the company.

(3)Development value index

Research and development intensity index is the ratio of research and development cost versus sales revenue, whose computational formula is as follows:

$$\text{Research and development intensity=research and development cost/sales revenue}\times100\% \qquad (3)$$

The paper employs patent growth to measure the enterprise's capacity in making profit through research and development creation. Its computational formula is as follows:

Growth rate of patents=number of patents this year/number of patents last year×100%   (4)

3.1.2 Weight setting for evaluation indexes

Considering the availability of data and the demand of research, the paper employs Delphi method to determine weights for each index. The study consults four experts from W company and four experts from other companies, and employs the means of anonymous voting, where the weight coefficients can be determined for each index according Delphi method as in Table1:

Table 1 Indexes for measuring enterprise value and their weights

Total index	Primary indexes	Weight	Secondary indexes	Weight
Enterprise value index	Market value index	0.55	Return on sales	0.73
			Overall customer satisfaction	0.27
	Organizational value index	0.28	Overhead expenses rate	0.52
			Product qualification rate	0.48
	Development value index	0.17	Research and development intensity	0.81
			Patent growth	0.19

3.1.3Evaluation index calculation

According to index setting and weights, the computational formula for enterprise value can be represented as follows:

$$\text{EV} = (W_1M + W_2O + W_3D) \times 100 \tag{5}$$

V presents Enterprise value index, Wi presents weight, M presents Market value, O presents Organizational value, D presents Development value

3.2 W company enterprise value index calculation

The paper chooses data of W company from 2010 to 2014 as a research subject and calculates the value index of W company. The data is retrieved from Annual Report of W Company, Corporate Social Responsibility Report of W Company and GTA CSMAR database from 2010 to 2014.The calculated results are as in Fig.2:
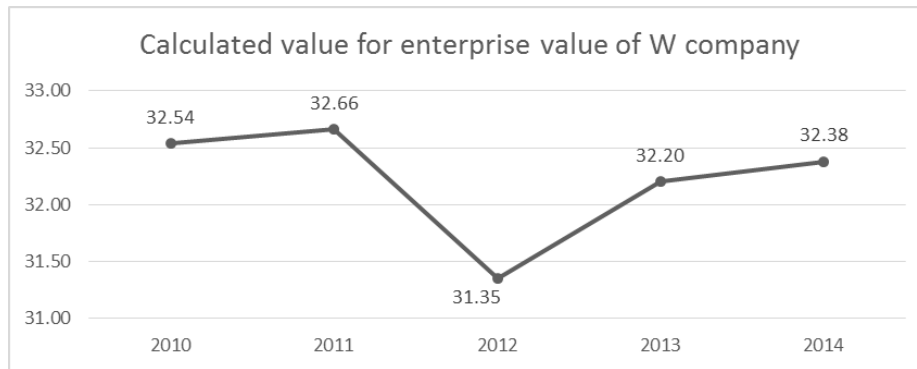
Fig.2 Calculated value for enterprise value of W company

It can be seen in Fig.2, from 2010 to 2014, the enterprise value of W company showed fluctuation, and as compared to 2010, in 2014, the calculated value decreased to some extent. That is to say, during 2010 to 2014, W company's enterprise value fluctuated as a whole, wherein the enterprise value was lowest in 2012, and afterwards increased. During 2012 to 2013, the increase was substantial, and during 2013 to 2014, the increase became slow.

4 Measurement of employee value creation of W company

The paper chooses three monetary indexes accounting for expenditures related to human resources and two non-monetary indexes as calculating tools for employee value. Monetary indexes comprise salary paid to employees by the enterprise, employee welfare, employee education fund, and non-monetary indexes comprise employees' knowledge structure index and employee satisfaction.

Employees' knowledge structure index is mainly comprised of employees' education composition. The measuring is based on the average period of employees' education, where 3 years are referenced for junior college and below, 6 years for junior college, 7 years for bachelor's degree, 10 years for master's degree.

Employee satisfaction refers to the degree of employees' actual perception of accepting the enterprise as compared to their expectations. The data is retrieved from Annual Report of W Company and Corporate Social Responsibility Report of W Company from 2010 to 2014. See Table 2 for specific data:

Table 2 Data table for employee value creation calculation

Year	Salary paid to employees(RMB)	Employee welfare (RMB)	Employee education fund(RMB)	Knowledge structure(Year)	Employee satisfaction
2010	2,175,174,218	161,928,258.1	32,474,656.76	4.69	86.70%
2011	2,959,773,542	236,159,135.9	43,278,101.55	4.65	90.00%
2012	3,107,665,932	150,702,644.2	7,532,058.57	4.78	88.40%
2013	3,228,222,264	232,877,042.7	50,132,726.72	4.86	84.90%
2014	3,623,092,387	315,023,448.5	47,869,816.76	5.13	87.40%

Note: 2014 employee education fund is estimated according to proportion

5 Analysis of relationship between enterprise value and employee value in W company

In order to understand the relationship between enterprise value creation and employee value creation, a correlation analysis is made on enterprise value and employee value, where correlation analysis is made on enterprise value(EV), employee salary, employee welfare, employee education fund(EF), employee knowledge structure(KS), employee satisfaction(ESA)[4,5], and the correlation coefficient results are as in Table 3:

Table 3 Correlation coefficient table

	EV	Salary	Welfare	EF	KS	ESA
EV	1					
Salary	-0.252	1				
Welfare	0.464	0.722	1			
EF	0.787	0.273	0.779	1		
KS	-0.083	0.770	0.743	0.346	1	
ESA	0.026	0.001	-0.037	-0.320	-0.339	1

It can be seen from Table 4, in addition to being negatively correlative to employee salary and knowledge structure, the calculated enterprise value of W company is in a positive correlation relationship with employee welfare, education fund and employee satisfaction. The salary level of W company is in a negative correlation relationship with enterprise value, because the salary is always rising in a certain period of time due to salary rigidity, and meanwhile the salary paid to the employees is also a part of enterprise cost, which causes the enterprise value to increases as the paid salary increases. On the other hand, not only the enterprise salary distribution mechanism might affect enterprise value, but also the unreasonable salary distribution system could result in decrease of enterprise value. Welfare is in negative correlation relationship with enterprise value, with a correlation coefficient of 0.464, which indicates that the increase in welfare could allow value of W company to increase. The correlation coefficient between education fund input for enterprise value and calculated enterprise value reaches up to 0.787, which indicates the increase in value of W company to a great extent originates from employee training provided by the enterprise. Ideally, employee knowledge structure should form a positive correlation relationship with the enterprises value, however W company features negative correlation instead of positive correlation. There's a positive correlation between employee satisfaction and enterprise value, however the correlation coefficient is as low as 0.026, which indicates employee satisfaction towards W company has no substantial effect on enterprise value.

6 Conclusions and suggestions

It can be seen from above study, the potential of human capital of W company is not fully utilized. W company should make proper adjustment in pay policy, and at the same time

optimize the level of employee knowledge structure, where rise in pay and recruitment of highly educated employees should not be used as the only way to optimize distribution of human capital, instead, it should be directed to providing corresponding welfare for employees, and making employees satisfied, thereby increasing enterprise value. It should be particularly noted that W company should direct the attention to educational training of employees. Although on the surface, the education training would decrease the enterprise profit, in the long run, enterprise training is a key means of forming a shared value, enhancing level of employee skill and capability, thus exerting a positive influence on increase in enterprise value.

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