CHEMICAL ENGINEERING TRANSACTIONS
VOL. 51, 2016

A publication of AIDIC
The Italian Association of Chemical Engineering
Online at www.aidic.it/cet

Guest Editors: Tichun Wang, Hongyang Zhang, Lei Tian

ISBN 978-88-95608-43-3; **ISSN** 2283-9216

DOI: 10.3303/CET1651160

Analysis and Application of Enterprise Group Finance Based on the Value Chain

Shuang Zhao

School of Finance and Economics, Wuxi Institute of Technology, Wuxi, 214121, China
zhaoshuang630@126.com

Value chain management was a modern enterprise advanced management philosophy, which continue its advanced nature and adaptability to all areas of business management penetration. This article intends to analyze and value chain management and financial analysis combined with the aim of: trying to break through the traditional financial analysis model. Financial analysis activities will be extended to the whole process of enterprise value management, based on the value chain analysis of the re-integration of the financial analysis activities. The value chain and build basic financial analysis process, so as to explore the key aspects of business management, management determined focus to provide a practical way. Thought value chain analysis for financial analysis of enterprises has injected new vitality, but also for the quality of management and improve the level of enterprises to open up a new channel. Such as financial indicators reflect the poor business conditions, lack of market competitiveness problems, value chain analysis can be made by analysis of each stage of the value chain work activities, identify the crux links.

1. Introduction

Corporate financial analysis is a reflection of management performance indispensable means; but with the deepening of modern management activities, business managers need for financial information, in both breadth and depth of the proposed higher requirements (Li, 2012). The traditional financial analysis is mainly based on financial statement analysis, focusing on the traditional financial indicators of financial analysis and evaluation to explore the motivation; that with the deepening of the financial analysis of modern management activity, showed some limitations: relying solely on financial statement analysis and management information provided has been unable to meet business managers need to improve management quality (Wu, 2013). Therefore, for the ever-changing corporate management activities, financial analysis of adaptive change will become necessary (Estampe, 2013).
Value chain management concepts in management accounting, marketing and other business management areas have been widely used. In recent years (Fleisher, 2015), in the field of internal control, financial management, cost management, performance evaluation and human resource management, managers have been gradually Value chain management concepts into one (Kock and Sun, 2014). Combined with the financial management of value chain management is an inevitable trend, because the company's financial management is one of the core of enterprise management, enterprise management is the management of activities undertaken reflect the value of the financial management in essence, enterprises engaged in a variety of effective management activities are bound to reflect on the value-added effect, the financial management is to these value-added effect of an activity analysis, assessment and management (Zhu, 2013).
If the problem is an internal value chain companies can take to reduce the use of cost or differentiation strategy, optimization "value chain" improve "customer value" as much as possible to improve their own competitiveness. Financial analysis is based on the value of customer value chain for the core business value movement is analytical tools to the enterprise and the ultimate value movement gains tightly bound. Therefore, using the idea of the value chain of financial analysis, business management including financial management will have a solid basis, thus managing to break the shackles of traditional thinking, so that the quality and level of management greatly improved.

Please cite this article as: Zhao S., 2016, Analysis and application of enterprise group finance based on the value chain, Chemical Engineering Transactions, 51, 955-960 DOI:10.3303/CET1651160

2. Theoretical basis of value chain management and financial analysis combined

2.1 The basic theory of the value chain

Porter value chain is described as: a company for the "design, production, marketing, delivery, and maintenance of their products (Wu, 2014)," the internal processes and operations. He corporate job into two categories: basic operations and support operations, as shown in Figure 1.

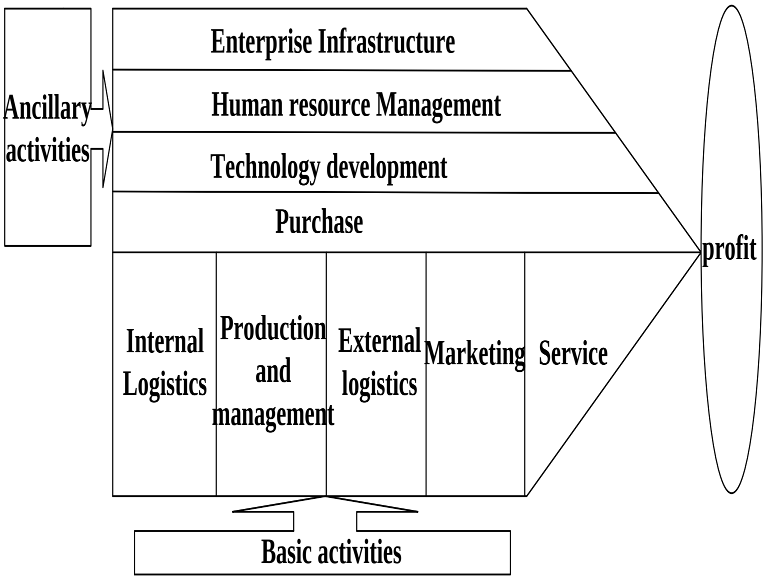

Figure 1: Peter basic value chain

Base job from the conversion into outputs, direct delivery and after-sales service, which are in the product or service, in essence create and pass it on to customers and some of the service.

Value chain optimization and other operational processes based on this constitution continuous improvement continuous improvement process. The key is the value chain analysis, which is the job chain from raw materials to the final customer as part of the strategic decomposition associated. This causes the process costs between morphological changes and enterprise competitive differentiation interpretation business. Value as a function of the number of enterprises structured analysis method, such as value chain cost analysis, differentiated value chain analysis and analysis of the external value chain competitive advantage with respect to value creation in the enterprise in terms of various business functions, each enterprise value chain including the value of the job and the job may not be the same, but the value chain analysis have a common purpose, which is sought to analyze the value chain and eliminate non-value added work, or seek to promote the value chain performance path.

2.2 Activity value analysis and value chain management

Enterprise essentially contributed to aggregate interrelated elements of the job performed by using the trading contract process (Seuring, 2012). Operational activities are essential elements of the value chain driven business process is one or more input into the whole process of customer valuable output, but also understandable become associated with a specific target to achieve a series of jobs that activities constitute the supplier to the customer beginning to realize the value of the value chain (Shi, 2013).

From the perspective of job to look at the production and operation as well as input and output process can be seen from the enterprise value chain is a set of ordered production operation process from the job chain link (Tao, 2014). According to the principle of operating costs for each job during the process will consume some resources, but at the same time there will be some output is transferred to the next job. Of course, the job transfer process must be accompanied by a shift in the value of corporate input-output process is not only the result of the final output of the job chain polymerization of all jobs, and is the result of the value of all aspects of the collection from the value chain, the job chain Construction process is the formation of the value chain (Pettersson, 2013). Therefore, the job chain is closely customer demand chain, value chain is a chain of currency manifestation jobs, both in production and operation process is always uniform formation and operation mechanism of the enterprise value chain work under the concept shown in Figure 2 as follows:

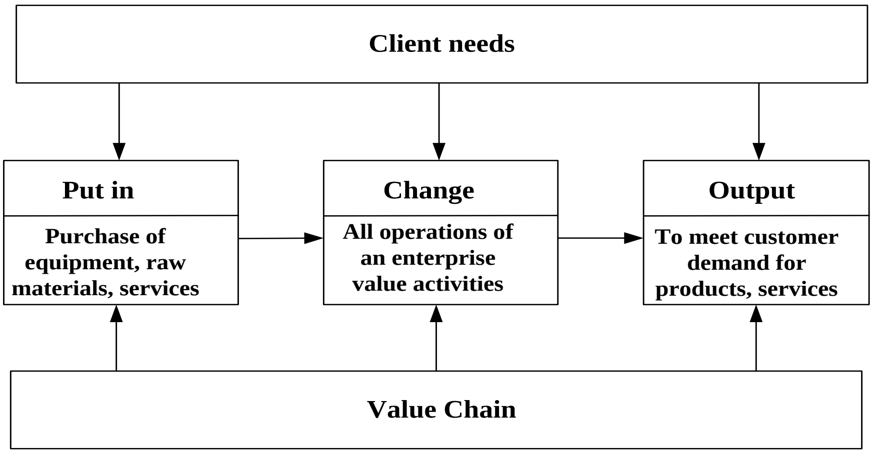

Figure 2: Value Chain operations formation mechanism perspective

Specific objectives to maximize enterprise value of value chain management, we can use this as the basis to build a competitive value chain optimization strategy. And from all the basic elements of the value chain, that is, the form of money for each job activity starting in the value chain on the basis of in-depth understanding of the essential characteristics, the use of job value analysis tools, build business value analysis model, the value chain decomposition and measurement, the introduction of business process integration, optimization of organizational structure and information system integration and other related ideas, establish a complete value chain management theory framework.

3. Experiments and results

3.1 Financial analysis evaluation

Turnover including accounts receivable turnover, inventory turnover, current asset turnover, and non-current asset turnover total asset turnover, in this article I will not repeat, will only make the interpretation of the total turnover.

$$Total\,asset\,turnover\left(ratio\right)=the\,number\,of\;sales\div total\,assets \quad (1)$$

Total asset is composed of sales revenue in the given conditions, the driving factor is the total asset turnover of assets, including current assets and non-current assets. By analyzing the drivers, you can see changes in the total asset turnover, and the key factors which affect the assets by the project, pointed out the direction for further study.

Sales profit rate refers to the ratio of sales revenue and net profit, which is calculated as:

$$Sales\;profit\,rate=\left(net\;profit\div sales\right)\times 100\% \quad (2)$$

Changes in sales margin is determined by the change in the income statement due to the amount of each item. Needs analysis and structural analysis based on the ratio of the amount of change in the focus of the project is determined, after determining the key projects in-depth internal purposes to further driving factors.

Return on assets is the ratio of net profit to total assets, which reflect the company entrusted with assets from 1 yuan (regardless of funding source) in net profit obtained. The formula is:

$$Return\,on\,assets=\left(net\;profit\div total\,assets\right)\times 100\% \quad (3)$$

Return on assets is the key to profitability. Driving factor is the net profit margin on sales of assets and asset turnover. Specific decomposition formula is as follows:

$$ROA=net\;profit\div net\,assets=\left(Net\;profit\div sales\right)\times\left(sales\div total\,assets\right) \quad (4)$$

Asset turnover, return on sales and return on assets of the three financial indicators reflect the company's value-added capabilities, reflects the financial position of a specific period, the result is a static state, retroactive corporate financial or non-financial motivation has certain guiding role, but only so far. It is difficult to integrate them into all aspects of the value chain of financial motivation analysis.

Economic Value Added (EVA) is the 1980s by the United States Stern - Stewart proposed management consulting firm, EVA is a registered trademark of the company. EVA known as extraordinary income, which comes from residual income (RI), refers to the overall average corporate earnings expectations than corporate income portion. EVA framework formula is:

$$EVA = EBIT\left(1 - tax\,rate\right) - Kw \times C\left(7\right) = \left(ROE - Kw\right) \times C \tag{5}$$

Formula, EBIT, Kw is the weighted capital profitability, C is utilized capital enterprise, ROE as equity net profit margin. Compared with traditional enterprise financial evaluation, the superiority of EVA index is mainly manifested in: EVA considering the cost of equity capital, can objectively reflect the company's operating results; EVA are more intuitive and easier to be understood in economic circles. EVA enables enterprises when making investment decisions more than a useful measure to eliminate duplication of investment and inventory backlog, improve the efficiency of enterprises. Further, since the EVA reflects the company's ability to create value, which is very important for all stakeholders. So EVA also reflects the interests of stakeholders, not just shareholders.

3.2 Value activities in value chain management model arrangement

Enterprise value creative activities, functions properties, related to each other and wasting resources, how to organize and coordinate the various activities it would be worth the value chain management to consider the main thing. The value created by the enterprise value of each activity, the degree of resource consumption varies. If companies have limited resources, you should try to optimize the allocation of enterprise, strive to maximize the value of the business.

Suppose various activities of the enterprise value of the optimal arrangement of X = [X1, X2,. . . Xn], the value of the number of activities scheduled for the following linear programming problem solving:

$$\mathrm{Max}(\mathrm{XV}\text{-}\mathrm{XR}_{\mathrm{ij}}C) \tag{6}$$

$$S.T.XR_{ij} \le R^{T} \tag{7}$$

Various activities of the enterprise value are not mutually isolated, but interrelated, and must consume certain resources. In order to ensure the smooth progress of the various value activities and rational use of limited resources, the value of the various activities must be arranged. Suppose the firm value activities had some connection between the A1 and A2 If such a link is represented as X2 = f (X1). The value of the number of activities A1 and A2 arranged as follows:

$$E = X_1V_1 - X_1[R_{11}R_{12}L \quad R_{1M}]C^T + f(X_1)V_2 - f(X_1)[R_{21}R_{22}L \quad R_{2M}]C^T \tag{8}$$

E is the number of values on the formula A1 and A2 creation activities, including X1 as independent variables, E is the dependent variable, such as A1 and A2 thus create the maximum number of values.

3.3 Construction of index system

In the actual business management process, there is no non-financial drivers of general application, the nature of different industries, different companies determine the characteristics of non-financial factors applicable to all enterprises are not the same, therefore, attempt to include the non-financial value drivers of the meaning is not important. This paper will be based on the value chain analysis, from the basic aspects of the enterprise value chain starting non-financial drivers of corporate value determined sequentially general sense.

In practice, building evaluation index system should follow the following principles: First, focus, that is related to business strategy, value chain, value-added features to focus on evaluation; Second, pay attention to the process, that is to be used to reflect the value chain business processes the index system; Third, taking into account the integrity of that evaluation to be able to reflect the operations of the entire enterprise value chain, rather than simply reflect the operations of a single node in the value chain sector; Fourth, to ensure the timely, that is as far as possible real-time analysis and evaluation methods should be expanded to reflect the range of measurement information in real-time operations up the value chain, as this analysis is much more than only after work to have merit.

According to the above principles, this paper, the basic concept of the balanced scorecard and non-financial indicators designed evaluation framework of the value chain of financial analysis, see Table 1.

Table 1: Value Chain Analysis of non-financial indicators of financial system

Basic value chain	Sub-system (BSC dimension)	Sun System	Index Description
Research and Development link	Learning and Innovation	R & D investment	= The current R & D expenses The current total sales revenue
			=(Total remuneration of employees engaged in R & D- The number of personnel engaged in R & D The average salary of employees)Total sales employees
		R & D output	=Sales of new products Enterprise sales
			=Study time Development time testing time
Production processes	Inner workings	product quality	=Eligible Quantity The total amount of such products
			=Returns the number of products Total sales of such products
		Product Cost	The total cost of production of such products The total amount of such products
		Production cycle	=Time the order is received Design Time Preparation time Processing time Test of time Transportation time waiting time Storage time
			=Annual net profit before interest and taxes Total number of employees

Value chain management is the core of the value chain to create value financial and operational aspects of the "value motivation" in-depth analysis, the purpose is to reveal the deep-seated reasons for changes in business efficiency and the risks involved. So that the aforementioned "value Motive" in corporate strategic planning process associated with specific business objectives, corporate management and employees contribute to the formation of a deep understanding of the value of, and consensus on corporate goals. Value Driver Analysis provides the basis for the value chain, improve work efficiency, but it does not mean that the job will certainly contribute to the value added chain. Hence the need to introduce the concept of job motivation, job motivation and value analysis to identify the specific reasons for the firm's output needs of the job.

4. Conclusions

In practice, building evaluation index system should follow the following principles: First, focus, that is related to business strategy, value chain, value-added features to focus on evaluation; Second, pay attention to the process, that is to be used to reflect the value chain business processes the index system; Third, taking into account the integrity of that evaluation to be able to reflect the operations of the entire enterprise value chain, rather than simply reflect the operations of a single node in the value chain sector; Fourth, to ensure the timely, that is as far as possible real-time analysis and evaluation methods should be expanded to reflect the range of measurement information in real-time operations up the value chain, as this analysis is much more than only after work to have merit.

Reference

Estampe D., Lamouri S., Paris J.L., Brahim-Djelloul S., 2013, A framework for analysing supply chain performance evaluation models.International Journal of Production Economics, 142(2), 247-258.

Fleisher C.S., Bensoussan B.E., 2015, Business and competitive analysis: effective application of new and classic methods. FT Press.

Kock N., 2014, Advanced mediating effects tests, multi-group analyses, and measurement model assessments in PLS-based SEM. International Journal of e-Collaboration (IJeC), 10(1), 1-13.

Li L., 2012, Effects of enterprise technology on supply chain collaboration: analysis of China-linked supply chain. Enterprise Information Systems, 6(1), 55-77.

Pettersson A. I., Segerstedt A., 2013, Measuring supply chain cost, International Journal of Production Economics, 143(2), 357-363.

Seuring S., Gold S., 2012, Conducting content-analysis based literature reviews in supply chain management. Supply Chain Management: An International Journal, 17(5), 544-555.

Shi M., Yu W., 2013, Supply chain management and financial performance: literature review and future directions. International Journal of Operations & Production Management, 33(10), 1283-1317.

Sun J., Li H., Huang Q.H., He K.Y., 2014, Predicting financial distress and corporate failure: A review from the state-of-the-art definitions, modeling, sampling, and featuring approaches. Knowledge-Based Systems,57, 41-56.

Tao F., Zuo Y., Da Xu, L., Zhang L., 2014, IoT-based intelligent perception and access of manufacturing resource toward cloud manufacturing. Industrial Informatics, IEEE Transactions on, 10(2), 1547-1557.

Wu D.D., Chen S.H., Olson D.L., 2014, Business intelligence in risk management: Some recent progresses. Information Sciences, 256, 1-7.

Wu D.D., Olson D.L., 2013, Computational simulation and risk analysis: An introduction of state of the art research. Mathematical and Computer Modelling, 58(9), 1581-1587.

Zhu Q., Sarkis J., Lai K.H., 2013, Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. Journal of Purchasing and Supply Management,19(2), 106-117.