Creation of Shareholder's value through Supply Chain Management

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Abstract* — *a global economy and increase in customer expectations in terms of cost and services have put a premium on effective supply chain reengineering. It is essential to perform risk-benefit analysis of reengineering alternatives before making a final decision. This paper identifies and demonstrates various benefits in terms of real cost savings from supply chain management. Considering the philosophy "What you cannot measure, you cannot manage", measuring the supply chain performance becomes tremendously important for companies and their supply chains in order stay competitive. So far only a small number of performance measurement systems exist that can help to understand and improve a supply chain's overall performance. One of the greatest challenges today for managers in the supply chain is the general shrinking of operating income margin in most industries. This decline in profitability is motivating companies to change how they do business, especially in the supply chain areas.

Keywords* — *Supply Chain Management, Shareholder's Value, Supply Chain Metric, Integrated Financial Management, SCM Optimization and Profitability

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1. INTRODUCTION

The financial and economic aspect of supply chain management (SCM) needs to be considered from two perspectives. Firstly, one of the overall objectives of SCM is to optimize total supply chain cost and investment. Supply chain costs represent a varying but significant proportion of the total cost base of companies in different industry sectors.

Fig. 1: Funds flow (Along with Material and Information flows) in the Supply Chain

The optimization of total supply chain cost, therefore, contributes directly (and often very significantly) to overall profitability. Similarly, optimization of supply chain investment contributes to the optimization of return on the capital employed in a company. Secondly, SCM is concerned with the management of financial flows across a supply chain. As shown in Figure 1 above, financial funds flow from the final consumer, who is usually the only source of "real" money in a supply chain, back through the other links in the chain (typically retailers, distributors, processors and suppliers) [1]. The integrated management of this flow is a key SCM activity, and one which has a direct impact on the cash flow position of companies in the chain.

2 FINANCIAL MANAGEMENT

Financial management is fundamentally concerned with two things. Firstly, financial resources must be secured from one or more of a number of sources (the raising of funds), Secondly, the effective deployment of these resources must be ensured (the use of funds). In relation to the raising of funds it is generally recognized that there are three main sources – share capital, loan capital (or interest debt) and reserves. Each comes with expectations and power on the part of the provider.

Providers of share capital (i.e. shareholders) expect dividends and capital growth in share value. Generally the ability of a company to pay dividends depends on short-term profitability while growth in share value is dependent on the re-investment of profits generated back into the business. Striking the balance between dividend and re-investment levels is a critical strategic issue in most companies. In any case, the power of shareholders derives from their ownership of the company. Providers of loan capital (e.g. banks) expect repayment with interest. Their power often derives from collateral (i.e. assets put up by the company as security against the loan). Reserves are profits from previous trading retained within the business with no expectation on the part of the provider in terms of dividend or interest. There is, however, an opportunity cost associated with this form of capital (i.e. the opportunity of investing this capital to generate a "safe" rate of return has effectively been foregone). Nonetheless, capital cost advantage can often be derived through the use of reserves as a source of finance.

Finance raised by a company is used in either of two ways. Firstly, it may be invested in fixed assets such as land, buildings, plant and equipment. From a supply chain perspective this is investment in processes. Alternatively, it may be invested in working capital (e.g. raw materials) - this is expenditure on products. The balance between fixed assets and working capital depends largely on the supply chain model adopted by a company. Traditionally in manufacturing-based companies the classical make-versus-buy decision was the major determinant of this balance. A company which carried out much of its manufacturing in-house had relatively high levels of fixed assets as a result of the need for significant investment in factories, plant and equipment. On the other hand, companies which had subcontracted much of its manufacturing to external suppliers tended to have lower levels of fixed assets, but proportionately higher working capital requirements. As companies concentrate on those supply chain activities and processes regarded as being core, "non-core" activities and processes are outsourced. This has resulted in a move away from vertically integrated architectures to more virtual configurations, with an associated shift in the fixed asset/working capital balance [4]. Finally, the key strategic issue relating to the raising of finance is the need to ensure that the necessary funds for investment are available, whilst simultaneously ensuring that day to day financial commitments are met.

2.1 INTEGRATED FINANCIAL MODEL

Combining the two aspects of financial management - the raising and the use of funds – gives rise to the integrated financial model, as shown in Figure 2. The three main sources of funds are spent on either fixed assets or working capital. Fixed assets often reduce in value over time leading to depreciation. Working capital leads to sales and revenue. Calculation of profitability (before and after interest and tax) is carried out based on these revenues and the costs incurred in achieving them. These earnings are either paid out in dividends to shareholders or retained within the business (thus adding to reserves), thereby integrating the model. This model forms the basis of the standard systems of accounting practice, in particular the profit and loss account.

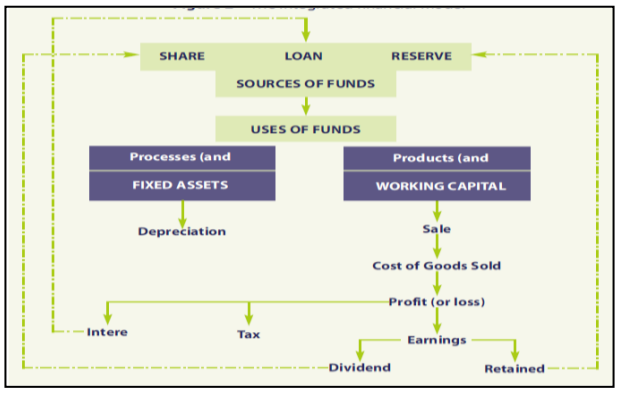

Fig. 2: The Integrated Financial Model

3. IMPACT OF SCM EFFICIENCY ON SHAREHOLDER'S VALUE

The overall SCM objective of optimizing total supply chain cost and investment contributes directly to the overall profitability of a business. Figure 3 indicates how good SCM practice can impact on shareholder value, as measured in the form of profit generated for every euro invested. Good SCM practice, first and foremost, aims to improve customer service. [4]

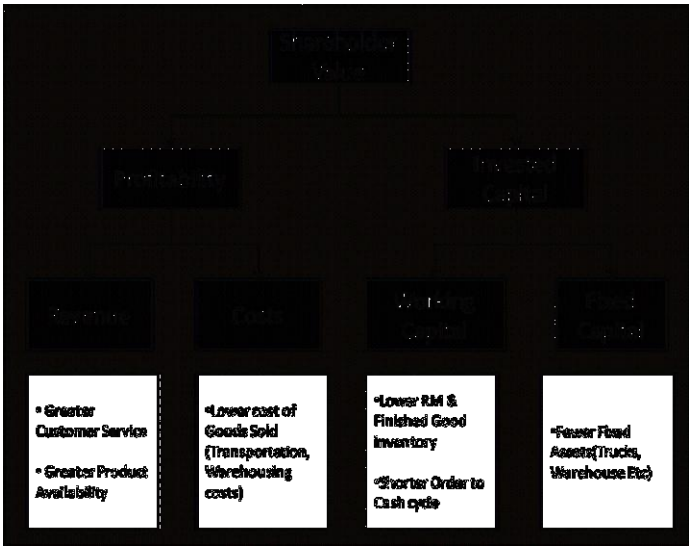

Fig 3: Impact of SCM on shareholder's value

Improved customer service, for example in the form of greater product availability, results in greater sales revenue streams. Costs are reduced through lower costs across the supply chain (for example improved transport, warehousing and distribution costs) through the minimization of non value-adding activities (NVAs). NVAs add cost to supply chain processes without necessarily adding value from a customer perspective. In relation to invested capital, good SCM practice has the potential to improve performance in relation to both working capital and fixed assets. The major potential saving in working capital requirements results from lower inventory levels (raw materials, work in progress and finished goods stock). Furthermore, good SCM practice can improve order-to-cash cycle times. This releases working capital tied up in inventory and allows it to be used productively elsewhere in the business. Finally, SCM aims to make more efficient use of fixed assets such as trucks and warehouses. This reduces the amount of investment required in fixed assets [4]. Impact of SCM efficieny and optimization on the overall profitability of a given organization can be measured as per the metric given below.

2.2 MEASUREMENT METRIC FOR IMPACT OF SCM OPTIMIZATION ON PROFITABILITY

Those who have been watching the Supply Chain Management industry over the last few years may have noticed the acceleration in the level of sophistication in supply chain management metrics. In one of its editions, Supply Chain Digest (www.scdigest.com) published an article entitled "Is Accounting a Barrier to Supply Chain Excellence?" In it, the editorial staff asserts that the financial metrics used by CXOs to measure business performance are outdated for today's more dynamic, less siloed business models. What they also promote is the idea that these metrics are cumbersome and often too sophisticated to be used by departments other than Accounting and Finance.

Established companies have found through the course of their existence that there are key measurements that demonstrate to the leadership team how the company has performed and forecast how the company will perform. [1] These measurements often transform themselves over time into a sophisticated array of numbers intended to watch a small, perhaps important, area of the company. The "Starter Set" of measurement can be defined as follows:

1. Revenue Growth - measures the year-over year percentage change in revenue

Top-line revenue is one of the most important financial items a company manages. Investors analyze not just the dollar amount of revenue but, even more importantly, the percentage growth in revenue. Revenue growth simply measures the year-over-year percentage change in revenue. It's calculated as:

(Revenue this period - Revenue last period) / Revenue last period

The period for measuring revenue growth can vary, but typically it is a 12-month period ending in the company's most recent fiscal quarter. Executives care about this metric because revenue growth provides investors with insights into how well a company is managed. That is,

revenue growth shows how effective the executives are at managing their company's ability to convert expenses and investments in physical and human Managing your capital into revenue. However, investors know that not all growth is good growth. Overall performance is impaired if growth in revenue doesn't provide a good return. Managers within the supply chain must consider how their decisions will impact the ability for their company to grow revenue.

2. Operating Income Margin – measures the profitability of a company in terms of total profit dollars or as a percentage of total revenues

Analyzing a company's operating income margin over time, or comparing it to other companies using only dollar amounts, can be challenging because as a company grows, generally operating income grows as well. So it is no surprise that larger companies typically have higher operating income than smaller organizations. But does this mean that larger companies, because they have greater operating income, are more efficient than smaller companies? No! In fact, it doesn't say much at all.

Expressing operating income as a percentage of revenue mitigates the impact of a company's size and facilities comparison over time and across companies. Operating income margin is calculated as:

OPERATING INCOME / REVENUE

Operating income margin doesn't solve all measurement issues in analyzing how well revenue and costs are managed, but it often provides guidance on areas you can explore to improve profitability. Executives care about this metric because over time, operating income is a key source of cash to grow the business, maintain assets, pay dividends, etc. Second, investors tend to pay more for companies with a higher operating income margin.[1]

And last, companies with higher operating income margin tend to have easier access to capital. One of the greatest challenges today for managers in the supply chain is the general shrinking of operating income margin in most industries. This decline in profitability is motivating companies to change how they do business, especially in the supply chain areas.

3. Cost of Goods Sold (COGS) – measurement used in Operating Income Margin comprised of expenses directly related to the provision of the products or services reflected in revenues

Cost of Goods Sold (COGS) is comprised of expenses directly related to the provision of the products or services reflected in revenues. Within different industries, this means capturing costs in different areas of the business:

• For manufacturing companies, major categories are raw materials, direct labor costs and factory overhead.

• For distribution and retail companies, the main category is the purchase cost of the products sold.

• For service companies, Cost of Services Sold primarily includes people-related expenses and payments to third parties for products and services utilized in the provision of the service.[3]

COGS is expressed as a percentage of revenue to mitigate the impact of a company's size. The percentage of Cost of Goods Sold is calculated as:

COST OF GOODS SOLD / REVENUE

Expressing COGS as a percentage of revenue does not solve all measurement issues in analyzing how well these costs are managed. But when used properly, conducting trend and comparative analyses of COGS provides powerful insights into potential areas of opportunity.

Comparing a company's COGS over time or to that of other companies using only dollar amounts is challenging because as a company grows, so does the cost of goods sold. Also, larger companies typically have higher cost of goods than smaller companies because of the volume of goods sold. But this doesn't mean that larger, or growing, companies are less effective at managing these costs. In fact, it doesn't say much at all! Executives care about this metric because COGS as a percentage of revenue has always been a major concern of executives since, for most companies, it absorbs a significant portion of revenues. [1] Managers in supply chain should understand that there has been an even greater focus on reducing these costs over the last decade as the price of goods and services and, in

turn, profitability have declined in many industries, as has revenue growth in more recent years.

4. Selling, General, and Administrative (SG&A) - includes expenses related to marketing, promoting and distributing products and services

Selling, General and Administrative (SG&A) includes expenses related to marketing, promoting and distributing products and services. Other major items include corporate administrative expenses such as accounting and finance, planning, human resources, research and development, and maintenance of administrative facilities Just like cost of goods sold or operating income, analyzing a company's SG&A over time or comparing it to the SG&A of other companies using only dollar amounts is challenging because as a company grows, so does SG & A. The useful measurement is SG&A as expressed as a percentage of revenue. This will mitigate the impact of a company's size. The percentage of SG&A is calculated as:

SG&A / REVENUE

Executives care about SG&A because it is often a large expense for the company, and often it's difficult to link these costs directly to revenues. Many executives think that SG&A is simply a cost of doing business, but few companies effectively manage SG&A. A manager in the supply chain should remember that like Cost of Goods Sold, a dollar reduction in SG&A goes straight to the bottom line. But keep in mind that the goal isn't just to manage SG&A; the goal is also to manage overall performance of the supply chain.

5. Days Sales Outstanding (DSO) – measures the average number of days it takes a company to collect its accounts receivable

Accounts Receivable are moneys owed to a company by its customers for products and services they've bought but have not yet paid for. They typically grow if revenues are increasing, and shrink if revenues are decreasing. Days Sales Outstanding measures the average number of days it takes a company to collect its accounts receivable. It's calculated as:

ACCOUNTS RECEIVABLE / REVENUE / 365

DSO doesn't solve all measurement issues in analyzing how well accounts receivable are managed. It often does, however, provide guidance on areas of opportunity to further explore.

Executives care about DSO because for many industries, managing accounts receivable, and, in turn, DSO, is a critical component of working capital management. Additionally, it also ties up funds that could be used elsewhere in the company. A manager in the supply chain should understand that the companies that are better at managing DSO will likely provide both more accurate and timely information to the company. It's this information that often helps to improve the efficiencies of back-office operations and their costs.

6. Days In Inventory - measures the average number of days it takes a company to sell its products, starting with raw materials (if applicable) through finished goods

Inventory is the value at cost of products a company's purchased or produced, but not yet sold. It consists of funds invested in Raw Materials, Work-In-Process, and Finished Goods. Inventory primarily exists because of imbalances in the rates products are produced and sold. But you cannot tell how effectively inventory is managed simply by looking at the dollars invested in it. Inventory typically varies with revenue.

However, clues as to how well inventory is managed are provided by Days In Inventory, a metric that measures the average number of days it takes a company to sell its products, starting with raw materials (if applicable), through finished goods. Days In Inventory is calculated as:

INVENTORY / COST OF GOODS SOLD / 365 DAYS

Days In Inventory doesn't solve all measurement issues in analyzing how well inventory is managed. It often does, however, provide guidance on areas of opportunity to further explore.

Executives care about Days In Inventory because inventory is a critical component of managing financial performance for most non-services companies. Many executives know reducing days in inventory frees up cash to be invested elsewhere, allows a company to sell the same product at lower prices, permits entrance into new

markets with lower margins, and delivers other benefits that improve financial performance and create competitive advantage. It also represents one of the most contentious issues across different parts of a company. A manager in the supply chain should understand that the major challenge in managing inventory comes with having groups with differing scorecards coupled with a seldom taken enterprise view. However, shrinking profitability, lower growth and increasing customer demands are forcing companies to seek new solutions for managing inventory; solutions that enhance overall financial performance and, at the same time, maintain and/or improve customer service levels.

7. Days Purchases Outstanding (DPO) –measures the average number of days it takes a company to pay its suppliers The remainder of this article is intended to explain these key supply chain metrics in further detail.

Accounts Payable (A/P) are moneys a company owes suppliers for services provided and components bought but not yet paid for. A/P typically does not bear an explicit rate of interest. There is, however, an implicit rate in the prices suppliers charge. These implicit charges show up in COGS for direct procurement items, and SG&A expenses for indirect procurement. Clues into how effectively accounts payable are managed are provided by examining Days Purchases Outstanding, the average number of days it takes a company to pay suppliers. DPO also provide valuable insights into whether or not a company will pay on time. DPO is calculated as:

ACCOUNTS PAYABLE / PURCHASES / 365 DAYS

COGS is often used in the calculation as a proxy for purchases since companies typically don't provide public information on purchases. Remember, items associated with COGS often include direct procurement (purchases), salaries and wages, and overhead. Using COGS, therefore, overstates the true purchases per day and, in turn, understates DPO. However, since DPO is calculated for all companies using COGS, this helps facilitate comparison across companies.

Executives care about Days Purchases Outstanding because the higher the A/P balances the higher cash flow. This can put a company in the position of borrowing money, at a cost of interest, to pay suppliers while their customers take time in paying them. A manager in the supply chain should understand that the smart suppliers are charge customers an implicit interest (or a capital charge) on the funds they lend through accounts payable. This implicit interest is part of the purchase price which, shows up in cost of goods sold. Therefore, the optimal management of accounts payable requires tradeoffs between supplier credit terms and the price charged by the supplier. [2]

4. CONCLUSION

From a financial perspective, companies aim to be both profitable and liquid. SCM contributes to profitability through the optimization of total supply chain cost and investment. Financial management is concerned with the raising and the use of finance. This gives rise to the integrated financial model, which provides a financial framework for the analysis of the impact of SCM on overall profitability and shareholder value. SCM contributes to the liquidity and cash flow position of companies through its focus on the integrated management of financial flows across the supply chain. The working capital cycle provides a useful financial framework for the analysis of these flows. It is often said that an understanding of customer service sets the specification for supply chain design.

In conclusion, every strategic and operational decision taken in a supply chain has financial implications. But not everyone needs to have a finance background to begin collecting data and measuring the performance of their department. Supply Chain professionals should have an understanding of the measurements so that they have a better chance of managing an effective supply chain organization. There is truth to the notion, “you can’t manage what you can’t measure.”

Don’t delay, and understand how to measure your supply chain today.

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