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The Financial Dimension of Supply Chain Management

Edward Sweeney
Dublin Institute of Technology, edward.sweeney@dit.ie

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the financial dimension of supply chain management

by EDWARD SWEENEY, Director of Learning, NITL

INTRODUCTION

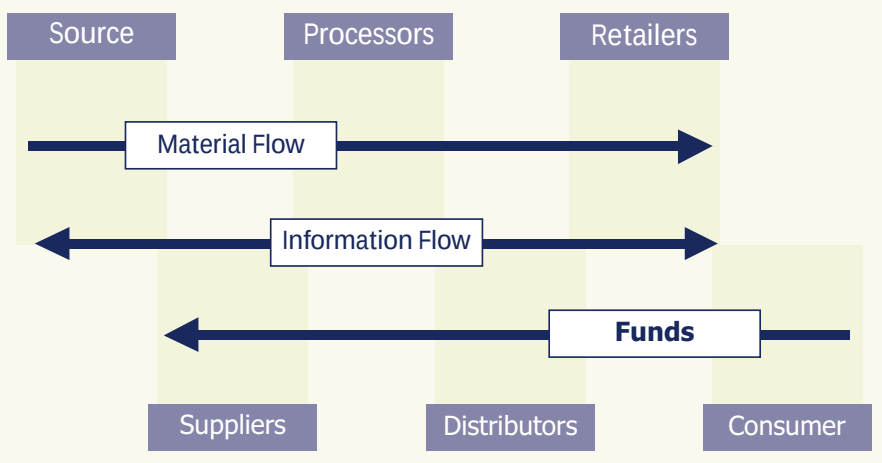
The financial and economic aspect of supply chain management (SCM) needs to be considered from two perspectives. Firstly, one of the overall objectives of SCM is to optimise total supply chain cost and investment[1]. Supply chain costs represent a varying but significant proportion of the total cost base of companies in different industry sectors. The optimisation of total supply chain cost, therefore, contributes directly (and often very significantly) to overall profitability. Similarly, optimisation of supply chain investment contributes to the optimisation 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 below, 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). The integrated management of this flow is a key SCM activity[2], and one which has a direct impact on the cash flow position of companies in the chain.

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 recognised 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.

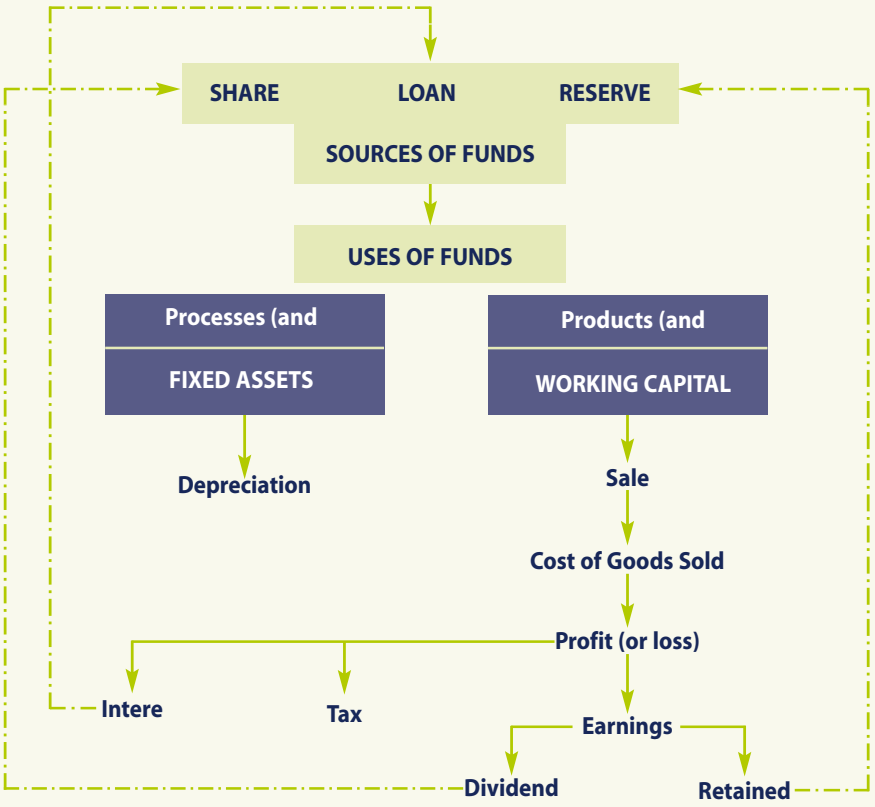
Figure 1 – Funds flow (along with material and information flows) in the supply chain



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

1. Optimisation of total supply chain cost and investment is part of NITL's first fundamental of SCM (Sweeney, E., Logistics Solutions, 2000)
2. Integrated management of financial flows (along with material and information flows) is part of NITL's second fundamental of SCM (Sweeney, E., Logistics Solutions, 2000)

Figure 2 – The integrated financial model



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. 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.

THE 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 below. 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.

The overall SCM objective of optimising total supply chain cost and investment contributes directly to the overall profitability of a business. Figure 3 below indicates how good SCM practice can impact on shareholder value, as measured in the form of profit

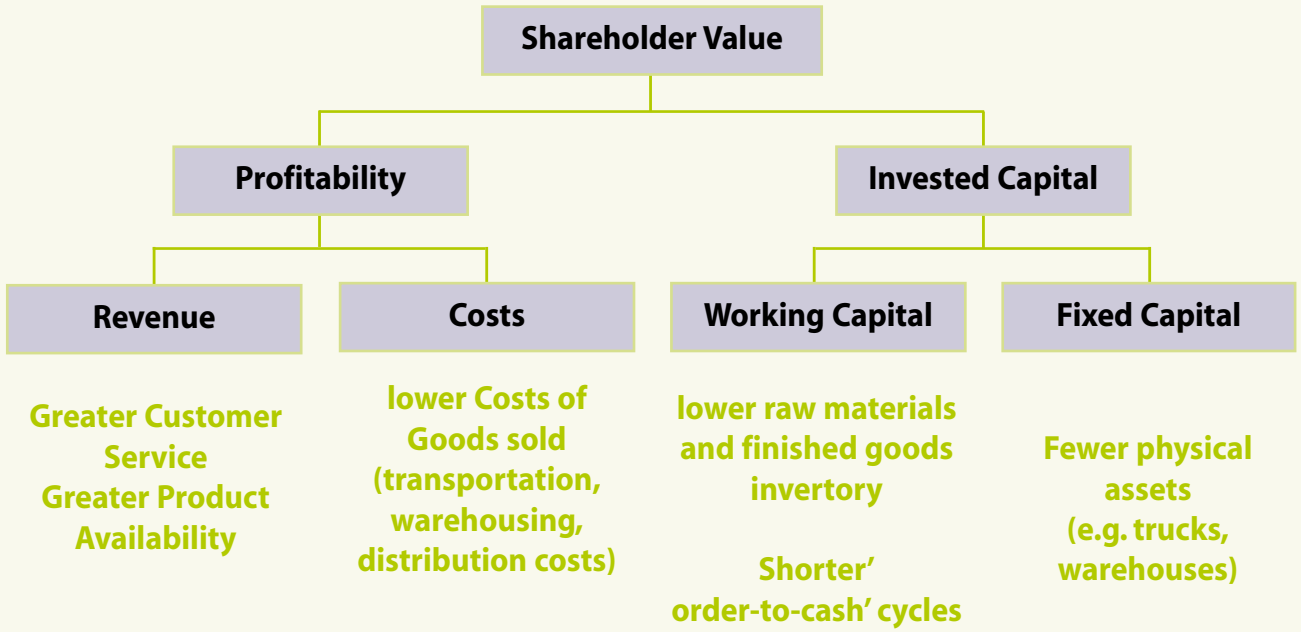


Figure 3 – Impact of SCM on shareholder value

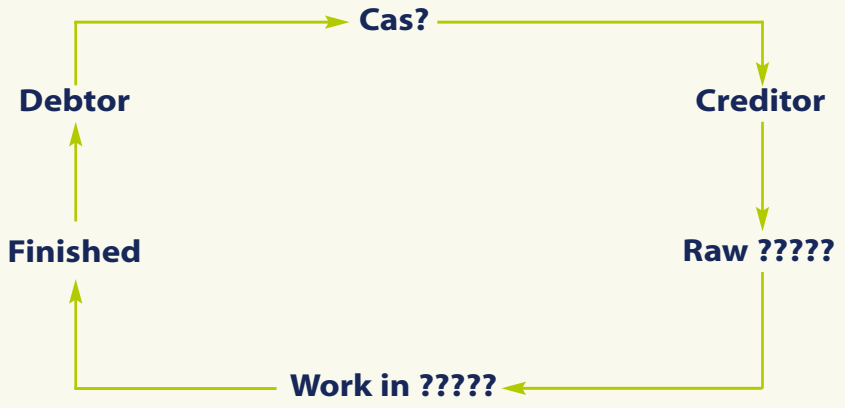


Figure 4 – The working capital cycle

generated for every euro invested. Good SCM practice, first and foremost, aims to improve customer service. 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 minimisation 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.

THE WORKING CAPITAL CYCLE

Of particular interest in SCM is the way working capital is used within a business. This is often referred to as the working capital cycle (as shown in Figure 4 above).

The working capital cycle indicates that suppliers (i.e. creditors) supply raw materials which are subsequently converted into work in progress and finished goods. These products are sold to customers (debtors) whose cash is used to pay suppliers. There are a number of SCM issues which relate directly to this cycle.

- **Value** - Value is added as raw materials are converted into finished product. Value-based accounting methods attempt to measure this in financial terms.
- **Speed** - A key objective is to increase the speed of the cycle or to maximise the "working capital cycle circulation velocity".
- **Creditor/debtor days** - Ensuring that customers pay in a timely manner, so that cash in available to pay suppliers on time, is an important element of liquidity.
- **Liquidity** - The very existence of any business is dependent on its ability to meet short-term debts. The cycle provides some insights into this.

Companies such as Dell (through the direct model) and the large food retail multiples have the ability to generate cash from customers before (often quite a long time before) that cash needs to be paid to suppliers. The corollary of this is that many companies (often suppliers to powerful customers or "channel masters") struggle to meet their cash commitments as a direct result of delayed payment by customers. In the worst case scenario, this has the potential to put even intrinsically profitable companies out of business.

Good SCM practice has the potential to impact in a positive way on the working capital cycle through its focus on value and speed. As pointed out earlier, the effective integrated management of financial flows across the supply chain is an SCM fundamental. If this can be achieved, working capital cycle performance can be enhanced.

CONCLUDING COMMENT

From a financial perspective, companies aim to be both profitable and liquid. SCM contributes to profitability through the optimisation 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 a similar way, as shown in Figure 5 below, improved financial performance measures the success of SCM.

In conclusion, every strategic and operational decision taken in a supply chain has financial implications. The approach outlined in this article provides a framework for understanding these implications. LS

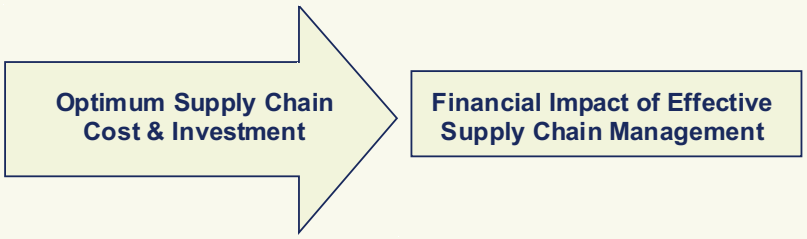



Figure 5 – Improved financial performance measures the success of SCM