
Supply chain management and the catalytic role of the management accountant

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This article provides an introduction to Supply Chain Management (SCM) and the imminent need for it in the current business context. SCM is linked to finance through value addition, cost reduction and efficient capital utilization.

The World of Business is currently going through a period of accelerated turbulent change which has not been witnessed before.

What is the change?

- Increased global reach.
- Increased Competition from local & overseas organizations.
- Increased Customization
- Increased Commoditisation.
- Increased marketing costs.
- Increased uncertainty.

Increased Global Reach

World Trade Organization has given a positive impetus to every business to try in the global market. In effect, companies, big and small, from the advanced countries, developing countries and others are trying to reach markets in every other country — directly or indirectly. In many businesses, though not all, the profit margins available in international markets are much more

attractive than those available in domestic markets. Even if profit margins are low, the organizations look for a wider spread to minimize the risk of losing market share to inland competitors.

A case in point is that many big companies come to India not for today's market but for a foothold into tomorrow. As Drucker puts it "The market in India or Brazil or Mexico or Malaysia is not yet big enough to support a major company and yet you have to move in and must invest heavily because the market tomorrow is going to be 100 million people" (Peter Drucker, 1985). This statement though nearly 2 decades old, still holds good in most business areas.

Increased Global Competition

From reach, we move on to competition. At the user level (whether industrial or consumer) for products with identical or near identical specification the customer looks for— price, quality, service, delivery, and reliability. The competition for the manufacturers in India, today, is not only from our own country but the entire Globe because

of liberalization and the entire world is becoming a Global Village with most of the trade barriers having been removed. From the year 2005 this aspect gains tremendous importance, as WTO agreements will be fully implemented by the member countries.

Increased Mass Customization

Today, individual customers need no longer rely on standardized products to meet their unique needs. For example to buy a computer individuals are able to specifically articulate their need in terms of specifications and to get the computer built to that specification.

Mass customization will be as important to business in the twenty-first century as mass production was in the twentieth. Levi's offers customized jeans, and in US Saturn will build a custom made car for you.

Increased Commoditisation

Looking at the product life cycle of any product or service, the older generation product is already in the maturity or decline stage of the product life cycle. In the case of innovations, returns have to be realised quickly as the product life

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cycle is getting shorter. We should bear in mind that there is no such thing as enduring technological superiority any more. Thanks to new communication tools, technology diffuses extremely fast across the globe.

So, what happens? Products become commodities sooner than expected. Once a product becomes a commodity then the question arises -how to compete?

Brands are losing their cutting edge even in FMCG businesses. Customers are becoming knowledgeable. Very soon more and more products will be judged by their real worth. Much of the credit for this will go to the information sharing made possible by the electronic communication revolution.

Increased Marketing Costs

Kotler (2000) identifies the following as some of the emphasis in current marketing thinking

1. A growing emphasis on quality, value and customer satisfaction.
2. A growing emphasis on managing business processes and integrating business functions.
3. A growing emphasis on global thinking and local market planning.
4. A growing emphasis on direct and online marketing.
5. A growing emphasis on ethical marketing behavior.

The customer all too often gives more weightage to his own personal benefits than to the company's benefits. This will bring in pressure on the marketing people to reduce their marketing costs, in spite of having to fulfill customised needs of its customers, across the globe.

Increased Uncertainty

This dimension measures the degree of discontinuous change in the industry/market, due to recession, due to customers who are

indivi-dualistic and demanding, inter-national political and economic adjustments.

So far, businesses have been on a fairly stable platform and prediction of the future was possible; though tough. The present scenario is that the future is extremely uncertain and companies are not sure which market strategy will succeed.

In the light of the above 6 factors the following is deduced:

What is required is a very agile, flexible system, which can cater to the customer needs. Costs across the supply chain have to be minimized.

What is Supply Chain Management (SCM) ?

SCM includes the collection of activities from Procurement of Raw materials or components to production to delivery to the end customer.

Supply Chain Management is the coordination or integration of a series of activities/processes, which procure, produce and deliver products and/or service to

customers.

The integration of the series of activities/processes could cover all the following :

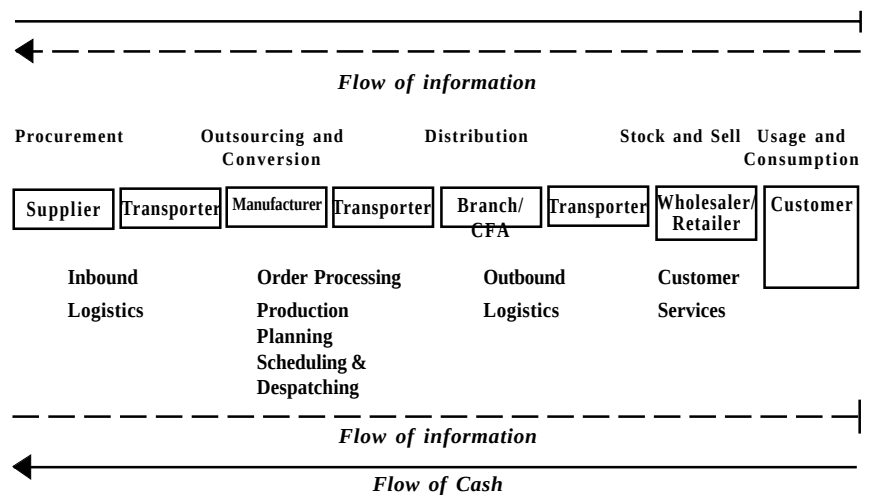
Site selection as where best to locate a facility to achieve the most rapid response. This includes not only the manufacturer's facility, but also the supplier's factory, service-centers, offices, warehouse and distribution centers, forecasting the demand for the product, which is the activity that sets into motion planning and the material flow in the supply chain.

Development of an operations plan that corresponds to the needs of sales. This includes all the integrated activities, such as development of the master production schedule, the material requirement plan and the operations schedule.

Management of raw materials and component inventories, work in process and finished goods which are just sufficient to ensure that there are no stock-out situations, but not too much so that costs would become unnecessarily high. This

Diagrammatic presentation of Supply Chain

Flow of Value (Goods and Services)



Source : Raghuram, G. Developed for the brochure for Top Management Programme for Supply Chain Restructuring, 1999, IIM, Ahmedabad.

activity will almost certainly involve just-in-time management practices.

Supply Chain Management, focuses on the need for the entire organisation to look at the end customer and deliver value to him. This would ensure that all corporate activity is value creating. The table below gives a few examples of gains of some companies through SCM in India.

ICI: Saved Rs. 1 Cr. in distribution costs while increasing service level by 20%.

Maruti: Reduced inventory by 50%.

Madura Accessories Ltd.:
Reduced cost and improved competitive advantage.

SCM and Management Accounting - The Necessary Linkage

Concurrent with the need for adopting Supply Chain Management strategies, the need for a measurement metric, which also makes sense at the integrated Supply Chain level, becomes important. Traditionally, organizational departments have been thinking narrowly within their own silos and the measurement metric also matched the same e.g., Production departments have always been given credit for the number of units manufactured and Sales for the number of units sold. This will not suffice when you have an integrated Supply Chain in place. Such metrics have necessarily to be linked to the financial metrics to make sense to all the participants within an organisation.

The first step in such an exercise would be to establish a common cost base. The next step is to evolve financial indices, which are meaningful not only to all the departments in the company but also

to the stakeholders and the share market as well.

Supply Chain Costing : Need of Activity Based Costing :

There are two significant constraints for the firms in the present days:

First, those firms that have not implemented activity-based costing cannot provide supply chain-related costs at the activity level.

Second, the detailed level of information about process steps and costs of activities that must be shared by the enterprises requires a highly coordinated or integrated partner relationship between them. Such inter firm relationships are difficult and slow to develop. **Ultimately, restructuring the supply chain to exploit efficiencies also requires a mechanism capable of identifying and equitably allocating costs and benefits between the partners as changes are implemented.**

Direct Product Profitability (DPP) an improvement on gross margin costing, determined profitability by not only subtracting the cost of goods from sales but also adding direct revenue and subtracting direct product costs. One major weakness of DPP was that it failed to recognize overhead and administrative expenses, and, therefore, could not be used for total company costing purposes. DPP also required a great deal of supporting data about the physical characteristics of products that continually required updating.

Activity-based costing (ABC), which emerged in the 1980s, improved on DPP by recognizing both direct and overhead costs. ABC goes a step further by tracing the activity costs to objects consuming those activity costs. ABC analysis allows managers to pinpoint the

activities, products, services, or customers consuming overhead resources. Product and customer profitability analysis performed by firms using ABC has significantly altered management perceptions. One such study found that 29% of customers generated 225% of the profits, while 70% of the customers hovered around the break-even point. The remaining 10% of customers generated a 125% loss (Cooper & Slagmulder). **Profitability analysis using ABC can focus management effort.** High-cost products and customers can be targeted for corrective action. Applied broadly to supply chain management, ABC is helping companies finally understand their total costs (Barr) The **potential benefits of improved supply chain management are stymied by the absence of activity-based financial data and the inability to link performance measurement with cost.**

SCM and Finance

Too often we believe that the financial impact of lean supply chain management is linked to reduced operating expenses or reduced working capital. Granted, these contribute financial benefits, but they represent only a part of the story. The real leverage of lean supply chain is creating capacity for growth. Capacity accommodates demand variation. Lean supply chains create growth by matching capacity to actual demand through rate-based planning and execution (RBPE). RBPE tools help supply chains use their capacity more efficiently, which allows companies to reallocate capacity to new growth products. This produces a more efficient and productive use of inventory and resources, which is the foundation for financial benefits at both the company-wide and product-line

level. Under RBPE, demand variation is accommodated with changes in capacity rather than inventory. To use an analogy, consider snow-capped mountain and the farmer in the valley. In the natural world, the snow on the mountain melts into a river that is used by the farmer in the valley. The imbalance between the rates of supply and demand is managed by building dams throughout the river system. This is similar to building inventory in a supply chain. That is the imbalance between supply and demand is handled by releasing "inventory" or building "inventory". In contrast, the lean supply chain does not use "dams". Rather, the water flow rate in the riverbed is increased or decreased to match the demand for water by the farmer. The use of tactical capacity in the supply chain is increased when demand increases and reduced when demand falls. (James M. Reeve)

The "C-level" executives, the chief executive officers and chief financial officers, must be made to see supply chain management in a new light -not just as a technique for lowering operating costs but also a powerful enabler of the key drivers of financial performance. When-and only when- the financial-supply chain connection is made will supply chain management be able to complete the transition from the backroom to the boardroom.

One of the greatest business challenges today is providing a competitive return to investors. A company may not directly compete for customers against return-rich organizations like General Electric, Cisco Systems. But all companies compete against each other in the financial markets. Those companies offering a competitive return tend to prosper and grow. Those that don't are limited in their ability to grow and many times cease to exist.

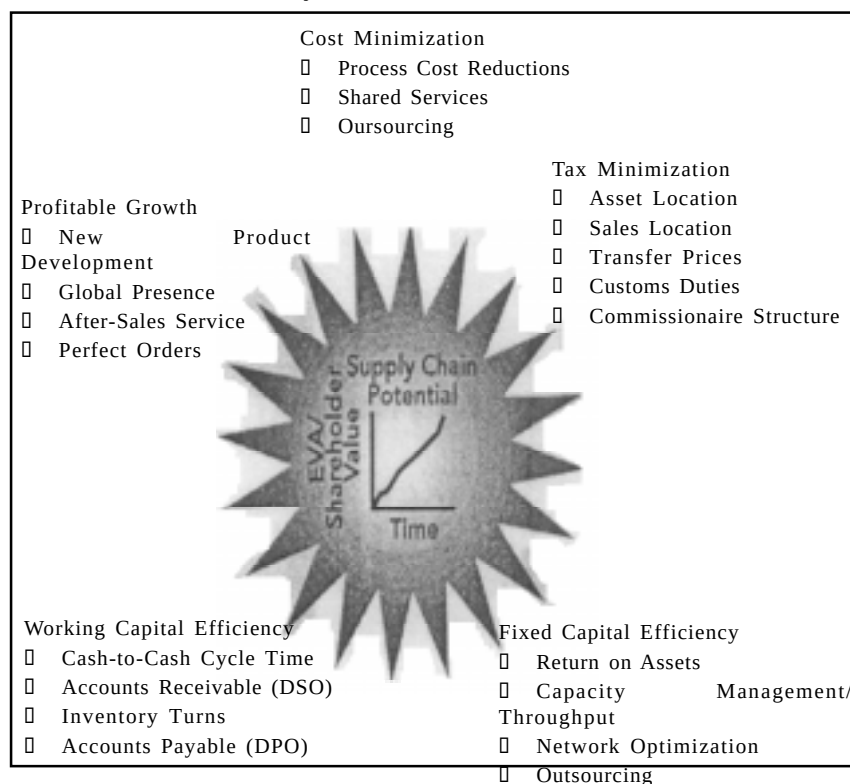
Providing a superior return is becoming more complex because of increasingly demanding customers, heightened competition and ever changing technologies. **"C- level" managers (CEOs, CFOs and so forth) are seeking new solutions to meet this challenge. SCM has the potential to provide these solutions - and, in doing so, move SCM from the "backroom to the boardroom". At many companies, however, at least two factors inhibit SCM's boardroom debate:**

- **First, many C-level managers hold a traditional view of SCM and do not fully recognise its potential impact on all areas of financial performance (growth, profitability, and capital utilisation). Unfortunately, the traditional view is narrowly defined in terms of SCM's effect on only one aspect of overall financial performance -operating costs**
- **Second, many SCM professionals do not speak the "the language of finance". Thus, they fail to**

articulate the real value of their solutions at the C-level.

A company must offer a competitive return in the financial markets to attract the funds it needs to maintain its existing business and provide for future growth. For a publicly traded company, a competitive return is measured by "total shareholder return" (dividend plus the change in stock price measured as a percentage of price paid for the stock). In the near term it is not always clear what drives a company's stock price. Some speculate it is investors' emotions, while others claim it is animal spirits. **However, over time, stock price tends to be driven by the financial performance of a company's operations, which is related to three key factors:**

- **Growth** - How fast revenues are growing year-over-year
- **Profitability** -How much is left over in profits per dollar of revenue after deducting operating



expenses (procurement, manufacturing, transportation, distribution, etc). This is often also called operating profit margin

- **Capital Utilization** -How many dollars of revenue are generated for each dollar invested in capital. (Stephen Timme & Christine Williams Timme)

Several drivers exist for determining and increasing a company's value. Revenue growth rate, operating income margin, effective tax rate, and working and fixed capital investment rates are among the most popular. In reality, however, true stock value emanates from capital efficiency improvements. Growth, in other words, must be profitable to be of value. How profitable? Profitable enough to generate healthy free cash flows: the money left over after subtracting

expenses, taxes and capital investment from revenues.

Drivers of Market Value

All Cash Flows are not created equal when it comes to boosting the market capitalization. Cash flows generated by revenue enhancement and cost reduction are taxed, often heavily. However, cash flows created from greater capital efficiency - through supply chain improvements to higher inventory turns or lower DSO (accounts receivable days-of-sales-outstanding) -are untaxed. This means that 100 per cent of these freed up cash flow funds contribute to improved market capitalization via improvement in the ROI due to release of excess working capital locked up in receivables/inventories. (Gene Tyndall et, al)

The DU Pont Model :

F. Donaldson Brown created a

useful tool for today's supply chain executive, known as the **du Pont model**, or the strategic profit model, while he was working for E.I.du Pont de Nemours & Co.'s Treasurer's Department in 1914 (Chandler). The financial analysis technique Brown used involved tying together the profit and loss statement and the balance sheet so that the changes in the working capital could be associated with changes in sales (See Figure). Brown's creation provide du Pont executives with a consistent methodology with which to evaluate each operating unit's performance, locate sources of deficiencies, and prepare and adjust budgets and forecasts.

The du Pont model is a reliable tool to aid supply chain managers in determining the outcome of project ideas (Cavainato). Using this model,

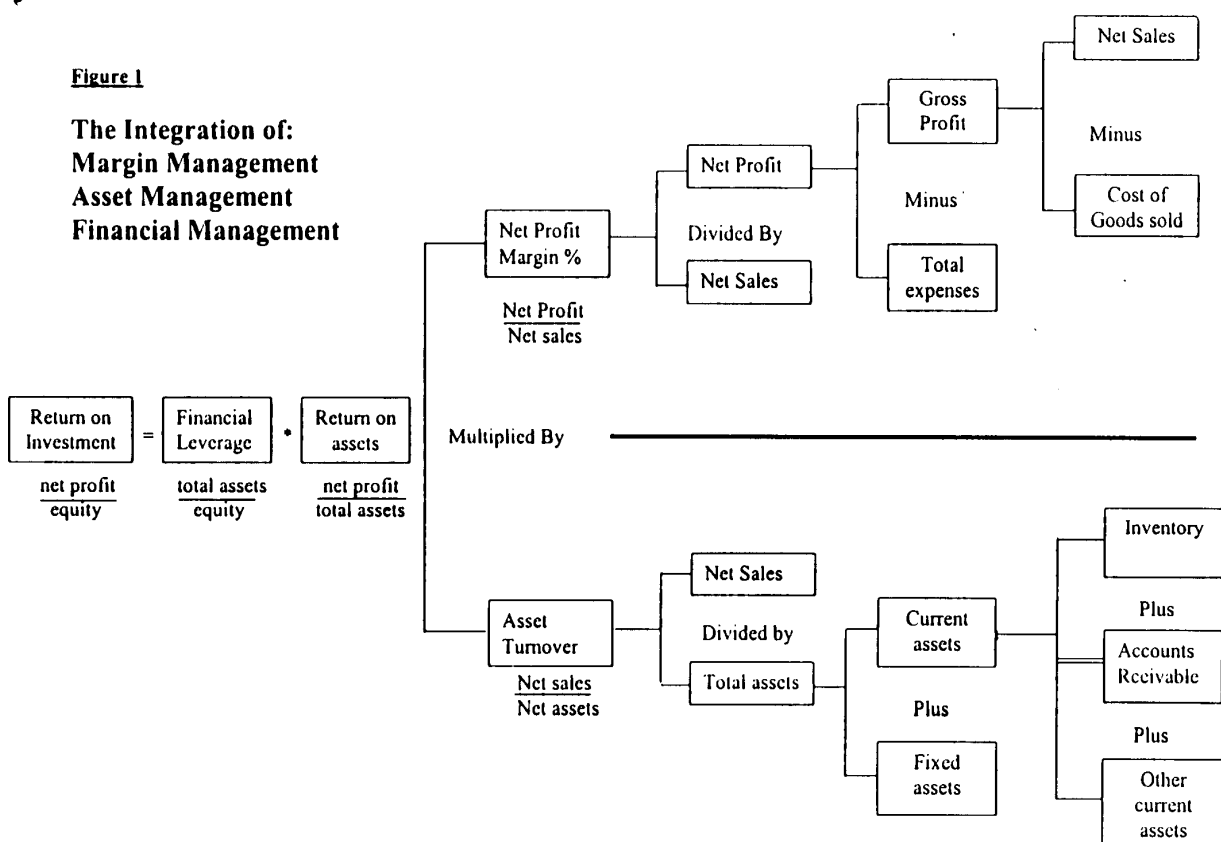


Figure 2 .

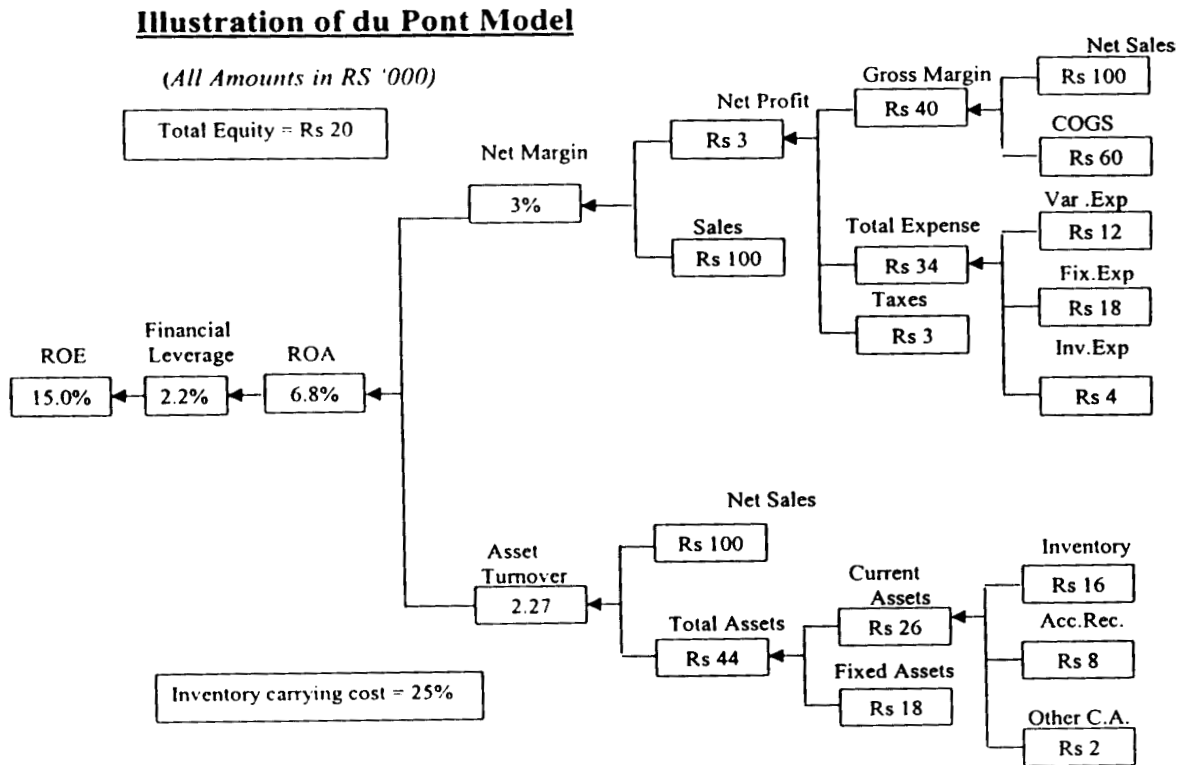
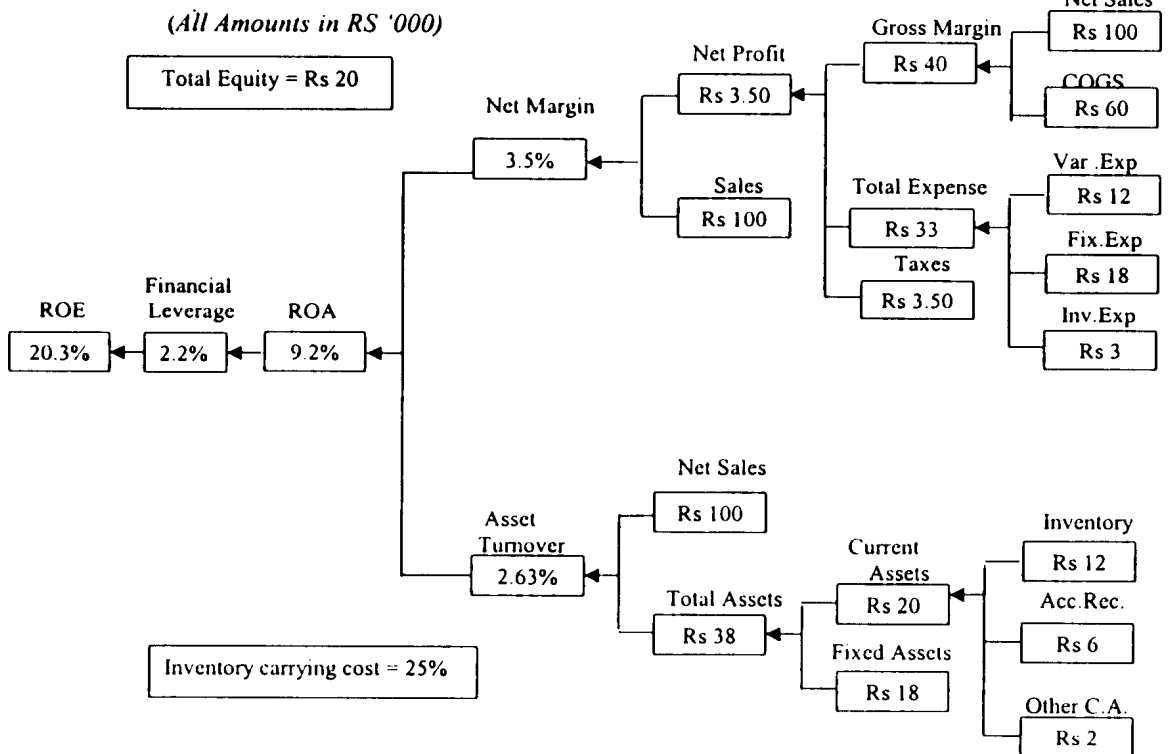


Figure 3

Impact of reduction of inventory & receivables on ROE



financial simulations are easy to construct that reveal the impact of possible supply chain decisions on the firm's financial performance.

Supply chain executives often have responsibility for a significant portion of the cost of goods sold and operating expenses, and, therefore, have a major impact on margin management. Decisions and expenditures associated with procurement, inbound transportation, production planning, and materials management are directly related to the net profits of the firm. Supply chain executives have responsibility for a sizable array of assets- inventories, facilities, handling equipment, transportation equipment, and computer and communication systems -used in the operation of the business. Their decisions on asset acquisition, utilization, replacement and disposal affect the rate of asset turnover.

The ability of the supply chain executive to perform financial analysis affecting supply chain decisions is critical in competing for funds and adding value to the firm and the supply chain. **The supply chain executive must be able to implement the often-competing strategies of cost minimization, value-added maximization, and control/adaptability enhancement (Speh & Novack). This requires the use of financial tools.**

Role of various entities through the Supply Chain:

Profits generated by operations improvements are typically contained within the firm can be found in the growth of "gain sharing" between companies and third-party logistics providers to which they outsource their logistics operations (Richardson). Under gain sharing, as the business partners' improvements result in lower costs, both share the savings in an equitable manner. **This changes the**

behaviors between the partners, from a customer trying to bargain down price and a supplier focused on cost reductions to avoid or defer price increase, to collaborative, supply chain behaviours where gains from productivity and cost improvements are shared. An accurate understanding of activity and process costs is a requisite for implementing gain sharing programs. Cycle time compression is one of the major emerging logistics strategies that have significant financial impact on supply chain performance (La Londe & Masters)

SCM & ERP:

Many companies use enterprise resource planning (ERP) systems to address supply chain issues. **While ERPs are integral to managing the supply chain, they are not a panacea.** They can't design, implement, and execute practices. ERP systems capture information from functions throughout the enterprise and format data for decision-making purposes. Many executives and managers become frustrated with the expense and time required to successfully implement ERP solutions. Yet used well, ERP and other forms of electronic communication can have enormous benefits -improved data, streamlined effort, and real-time communication -that can reduce costs and boost productivity.

Conclusion :

Supply chain activities affect the profit and loss statements, balance sheets and the costs of capital. Significant opportunities exist for the competent supply chain manager to reduce expenses, generate better returns on invested capital, and improve cash flows. **Controlling supply chain expenses improves profit margins. Reducing the levels of assets (both current and fixed) improves return on assets. Continuing to shorten cycle times can enhance cash flows. Superior supply chain performance**

can also produce the leverage and competitive advantage to increase revenues and the supply chain's share of market.

Improved collaboration between the finance and the other business and supply chain functions is necessary to facilitate the process to develop Activity Based Costing. This collaboration should help overcome the seemingly wide spread inability of supply chain managers to articulate the costs and benefits of supply chain activities.

It is the Chief Financial Officer's job to make sure that a company's financial performance provides a competitive return to investors. He or she should take a holistic view of solutions to provide this return. The CFO constantly is searching for new answers to such questions as:

- How can return on the existing business be improved?
- Where will the company get the funds to run the business and fund growth?
- How will the company meet investors' expectations?

In our opinion, the answer to the above questions lies in the effective Supply Chain Management.

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