CIPS KNOWLEDGE

Supply chain management and networks

This CIPS paper aims to provide an awareness and level of understanding to the reader on the subject of supply chain management and networks.

This knowledge paper is supportive of Procurement professionals operating at managerial level of the CIPS Global Standard

01 CPD HOURS

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Supply chain management and networks

Introduction

CIPS acknowledges that supply change management (SCM) has undergone many changes in recent years; in particular in the 1980s there was a recognition that holding inventory was an inefficient use of resources and that SCM was one method of working closely with suppliers and internal customers to ensure goods and services were delivered as required, of the appropriate quality and at the agreed cost. The concept of the customer initiating the demand, eg. the rate of demand, is known as “pull” or “kanban” systems. Kanban systems, along with Just-in-Time policies, were developed during the 1980s/1990s so that demand chains from end customers were increasingly streamlined for greater efficiency.

This CIPS paper aims to provide an awareness and level of understanding to the reader on the subject of supply chain management and networks. In line with other CIPS Practice Guides, they are written for use by those with an interest in business issues in general, and P&SM in particular. This will include full and part time P&SM professionals as well as individuals interacting with P&SM activities.

The CIPS paper will also include information on the contextual background to the issues, and will give a balanced opinion on issues the reader may wish to consider. There will also be references to other sources of information. Most CIPS papers will contain CIPS Positions on Practice; that is the CIPS view(s) on the paper's subject matter. Further information is available from the CIPS website.

DEFINITIONS AND EXPLANATIONS

SCM is not about optimising the individual units, whether they be factories, warehouses or transport fleets. Numerous definitions of SCM have been put forward, for example ‘An integrative philosophy to manage the total flow of a distribution channel from the supplier to the ultimate user’.

This definition embraces viewing the supply chain as a single entity dedicated to the efficient flow of goods and services with the target of eliminating waste, in particular eliminating inventory defects and delay. For this to happen there needs to be co-ordinating management of all the links in the supply chain. The objective is to eliminate the barriers between the links of the chain. This involves long-term partnership relationships along the chain rather than control. Other definitions of SCM include:

‘The management of the supply chain in order to satisfy the ultimate consumer. It embraces defining what customers want from the supply chain or any part of it and the obtaining of supplies, the processing of supplies in-house and the distribution of the processed supplies. It covers therefore almost all business activity including marketing, manufacturing, purchasing, logistics and more generally such activities as finance, personnel, etc’ ‘It is about optimising the whole to achieve better service at lower cost or with less inventory and thereby competing with other supply chains in the industry. It has been calculated that 60% of the benefit in the retail sector comes from not losing sales owing to stock unavailability. The key reason for re-engineering the supply chain is to improve responsiveness to customer demand’.

‘A chain of operations through which goods move from initial source of supply through to final point of use'. Interestingly, opinions vary according to what the initial point actually is. To take a random example - a soft drinks can - is it when the raw material (bauxite ore) is mined, or when the can manufacturer purchases the sheet aluminium from a metal stockholder? It can be argued that to be fully effective a buyer needs to have some knowledge of the cost of raw materials (early part of the chain) and what prices are being charged to end customers in the market place (final part of chain).

Another more discursive definition which appeared in one of the US purchasing journals some time ago is as follows:

'The supply chain is made up of both internal and external business groups. These groups, eg. suppliers, purchasing, operations, logistics, etc, are sometimes referred to as enterprises, while distributors and retailers may be referred to as channel members. Together these groups form an extension of the company and are linked together for the purpose of moving product and/or services in a cost-effective and efficient manner. This linkage forms an integration that allows these groups to share information while aiming to reduce overall risks and costs in doing business together. The by-product of this alignment results in improved profitability and increased value to the end user'.

Yet another definition is:

'The supply chain conceptually covers the entire physical process from obtaining the raw materials through all process steps until the finished product reaches the end consumer. Most supply chains consist of many separate companies, each linked by virtue of their part in satisfying the specific need of the end consumer'

It is quite possible for each of the links in the chain to have their own objectives, each of which can easily be in conflict with those of another. For example, manufacturing operations are aimed at achieving maximum output without taking optimum inventory levels or distribution capacity into account; supply chain management has emerged as a technique for reconciling and accommodating these differences, thereby maximising the efficiency level of the supply chain as a whole.

SCM may be thought of as the management of all activities aimed at satisfying the end consumer; as such it covers almost all activity within the organisation. It has been suggested that it incorporates a number of key success factors which include a clear procurement strategy, effective control systems, and development of expertise. SCM therefore represents and reflects a holistic approach to the operation of the organisation.

In other words, SCM relates to the entire procurement cycle, not just at the end (which is the commonly-held view). In particular it has a pivotal role to play in the development of an initial sourcing strategy.

A distinction may be drawn between strategic and tactical SCM, the respective definitions being:

'The selection and linking of suppliers and customers through negotiation and agreement to achieve customer satisfaction by providing value added products and services within beneficial and profitable relationships of all parties within the supply chain.' And 'SCM is the continuous planning, developing, controlling, informing and monitoring of actions within and between supply chain links so that an integrated supply process results which meets overall strategic goals.'

Supply chains are not linear; any organisation has several supply chains coming into (upstream), going through, and going out of (downstream) the organisation. SCM is the management of the whole demand process, starting with the end customers' requirements – be that external customers (eg. consumers), or internal customers (eg end users) – and managing the meeting of their requirements right to, and in some cases beyond, the supplier of the required goods or services.

Few organisations have fully integrated their supply chains. One example of where SCM has been successfully implemented is in the automotive sector. Nissan, the car manufacturer, has integrated its upstream supply chains for its car production, if not for its entire business.

The supermarket sector is an excellent example of where supply chains have been managed to the extent that all goods and services required by the organisation are demand-driven, with technology enabling end customers' requirements to be communicated direct to suppliers.

SCM involves identifying where the value lies within the whole supply chain, ie identifying the value chain and then segmenting it so that each segment can be addressed individually. It is also concerned with analysing and identifying all the non-value adding activities across the entire supply chain and removing them. This process is sometimes referred to as "diagnostics". The purpose of this is to firstly diagnose each value segment to determine whether the organisation could improve it; then find out whether the value segment could be enhanced; and finally whether cost could be taken out or whether knowledge about it could be bettered. SCM remains an aspirational concept for many organisations. SCM is evolving and becoming more complicated with many organisations having 80% of their turnover comprising bought-in goods and services.

This trend has been exacerbated by an increase in outsourcing make/buy decisions resulting in more goods and services being bought in, and longer-term partnering arrangements leading to fewer key suppliers who are more willing to take a greater responsibility for efficient upstream supply chains. Technology, notably e-procurement, e-marketplaces and e-auctions, are creating new and alternative upstream supply chains which also have to be managed. Some organisations have outsourced their production to their suppliers so that the organisation's role becomes one of brand management; this is one example of SCM being critical to the success of an organisation.

CIPS POSITION

CIPS views, opinions and beliefs are stated throughout the document, however, the broad practice statements which underpin the text are as follows:

CIPS believes that:

- SCM is still evolving and developing and there are, therefore, numerous definitions of it, some of which are presented in this paper. SCM may be said to be broadly about the efficient and effective management of all activities from primary suppliers right through to the point of sale
- In some sectors SCM is a key activity, whilst in others it is somewhat less important. P&SM professionals should become increasingly involved in SCM, ideally playing a leading role in its development wherever possible
- For best results, SCM requires a senior sponsor appropriate to the sector
- SCM has a pivotal role to play within the organisation, involving responsibility for predicting and satisfying end customers' demand back through to the suppliers
- SC managers have a vital role to play in managing cost, as they are in a position to monitor and influence the whole cost base across the business and the supply chain
- SCM creates opportunities for the P&SM professional to contribute to the organisation's success. It is an important activity that P&SM professionals need to understand and interface with;

Furthermore they should develop their SCM skills to supplement the knowledge they possess as far as traditional procurement procedures are concerned.

WHAT CONSTITUTES SUPPLY CHAIN MANAGEMENT?

Essentially, the supply chain starts with the extraction of raw material (or origination of raw concepts for services) and each link in the chain processes the material or concept in some way. The supply chain extends from the extraction of raw material or concept origination through many processes to the ultimate sale or delivery to the final consumer, whether goods or services. Arguably it can also include the disposal of the waste associated with the consumed product (waste is used here in the sense of the Japanese word 'muda' which embraces all forms of inefficient and/or unproductive activity such as inappropriate movement or handling).

Although accepted the term supply chain is inadequate to cover all the complexities to be found in the interconnections within and between organisations.

An alternative way of thinking is to consider it as a network with various nodes, sometimes referred to as supply-side management.

The primary function of the supply chain might be said to be the provision of goods or services required by the end customers. However the chain also acts as a channel or medium for the exchange of information as well as the communication of orders or instructions. In addition to providing for the flow of products, it also provides a channel for the flow of customers back up the chain.

SCM has undergone many changes in recent years. There are, therefore, distinctions to be drawn between SCM 'as was' and SCM 'as is'. Reasons for these differences include the following:

- New management thinking on SCM and on partnership sourcing generally
- New opportunities for close liaison with suppliers, largely through the use of IT
- New legal, consumer and ethical demands on the supply chain. For instance the emergence of the preference for GM-free food and the avoidance of child labour
- The drift of branding (and hence of product responsibility) from the manufacturer to the retail level
- The number of mergers within industry and the rise of multinationals has given certain parties an increasingly dominant position within their supply chain. SCM is certainly facilitated if the most powerful party decides to exert leverage on the others.

This new profile for SCM creates opportunities for the P&SM professional. For example, developing a deeper involvement in the procurement of production materials and by bringing SCM thinking into MRO (Maintenance, Repairs and Operations) purchasing.

In order to make supply chains more effective the concepts of Lean and Agile have been adopted by many organisations.

The lean and agile paradigms, though distinctly different, can be and have been combined within successfully designed and operated total supply chains. They incorporate a Just-in-time approach.

Definitions:-

Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market place. They focus on customer responsiveness.

First used by the Iacocca Institute (Iacocca Institute, 1991), the concept of agility has roots in other approaches such as time-based competition.

Characteristically, an agile manufacturing facility has six attributes:

1. Produces to order – whereas traditional mass production produces to stock;
2. Meets the customer's specific needs – whereas traditional mass production produces a "good, average" product;
3. Achieves a speed and flexibility in its functioning that is matched to the speed and flexibility of the technologies it manages.
4. Mobilises and manages all forms of knowledge intelligently to support an agile strategy;
5. Adopts new ways of working when these facilitate agility (i.e. moving from functional to team working and from arms-length to interdependent relationships with other companies);
6. Creates "virtual" project and ad hoc organisations to add capabilities as and when they are needed.

A key aspect of Agility is postponement or late customisation, explained below in the case study section.:

Lean means developing a value stream to eliminate all waste, including time, and to enable a level schedule.

Lean can be summarised in the following way:

- Specify what creates value from the customer perspective – what is it that the customer wants
- Identify all steps across the value stream – what steps need to be taken in order to carry out the above
- Make those actions that create the value flow – carry out the required activities
- Only make what is required – Just in Time (JIT)
- Strive for continuous improvements across the production line – which will remove any waste

Waste is defined as any activity which does not add value.

In certain key areas, the agile approach differs radically from the philosophy of the lean. Firstly, while the lean manager is concerned above all with eliminating waste from the supply chain, the agile manager focuses on instantly meeting the demands of the customer. The agile approach emphasises the importance of pleasing the customer – even if that means the production process is less rigorously efficient that it could be.

Second, the agile approach aims to develop flexible relationships with suppliers. While the lean philosophy says that building long term, stable relationships is vital, the agile gurus say a range of suppliers in "fluid clusters" can provide shorter-term, more temporary partnerships when market opportunities arise. (Bailey et al 2015)

WHAT ARE THE COMPONENT PARTS OF SCM?

It has been suggested that SCM comprises five key elements: strategy; process; organisation; information; and performance.

1, Strategy

This drives a supply chain design based on business goals and objectives and on market needs and expectations. It includes the development and management of business processes, performance targets, organisation structures, and information systems.

2, Process

This describes the activities required to operate and manage the supply chain, including links between processes and relevant best practices.

3, Model

An appropriate model defines management structures, department missions, and roles and responsibilities.

4, Information

IT systems are tools that support supply chain planning, execution, infrastructure maintenance, and the decision-making process.

5, Performance

A balanced set of process-level performance indicators that can be used to evaluate and manage supply chain performance against targets. It has been suggested by Lamming in an article within Purchasing and Supply Chain Management, by CK Lysons and B Farringdon that most supply chains are actually networks.

A set of supply chains which together describe the flow of goods and services from their original sources to their end users. The term 'network' is intended to imply a more strategic concept in line with the idea that networks compete with networks, rather than firms with firms.

There are nine different types of activity that companies can perform in co-ordinating supply chain networks:

- Partners
- Risk and benefit sharing
- Integration of resources
- Information processing
- Knowledge capture
- Social coordination
- Decision making
- Conflict resolution
- Motivation

The key characteristics of SCM can be summarised as:

- Emphasis on joint reduction in channel inventories
- Focus on channel-wide cost efficiencies
- Long-term time horizon
- Information sharing as required for planning and monitoring processes - this is often facilitated by various aspects of electronic commerce such as EDI, electronic mail, optical character reading etc
- Co-ordination between multiple levels in firms and in the channel
- Ongoing joint planning
- Compatible SCM philosophy
- Reduced supplier, distributor, and carrier base to improve co-ordination
- Channel leadership required for co-ordination
- Risks and rewards shared over the long term

Source Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy by M Cooper and L Ellram,
International Journal of Logistics Management, Volume 4, No 2.

The key implication is that a total view should be taken of all the linkages within the supply chain, irrespective of whether these linkages are within or external to any particular organisation. This involves an emphasis on total performance, total value added and total net cost. All the linkages need to be actively managed and there needs to be an emphasis on performance measures so as to achieve a high level of customer service.

WHAT ARE THE OBJECTIVES OF SCM?

SCM seeks to improve the total performance of an enterprise by enhancing its responsiveness to the market place and by reducing the overall cost of supply. Fundamental to its success are effective performance measures, relevant to each key link in the chain and also relevant to the overall objective. Without agreed measures, it is difficult to focus effort on those actions which are likely to bring the greatest improvements and the most cost benefits.

A possible list of the potential goals of SCM might be as follows:

- Reduce waste/non value-added activities (see reference to 'muda' in section 4.)
    - reduce amount of handling
    - reduce excess inventory, both materials and finished goods
- Maximise levels of customer service/responsiveness
- Improve supply-chain communication
    - increase speed-timeliness of information flows
    - increase accuracy of information flows
    - increase level of information sharing
- Reduce cycle time
    - new product development
    - order lead-time
- Improve co-ordination of effort.

SCM IN CONTEXT – LEAN SUPPLY AND THE SUPPLY CHAIN

Lamming in his paper *The Future for Purchasing - Developing Lean Supply* discusses the need to eliminate duplications such as invoices, expediting and inspection. He states; none of these add value; they all add cost.

There is a need for mutual discussion and agreement concerning the elimination of such duplications otherwise the elimination is simply the result of one organisation imposing its will on the other - hardly a symptom of good supply chain relations. Lean supply requires the relationship between supplier and purchaser within the supply chain to become the entity, ie, it is the relationship for which people see themselves working. To achieve this situation, close working relationships must be established and Lamming quotes an example in the USA where a supplier's employees work in a purchaser's scheduling department to manage the flow of materials from the supplier's company.

Often working with a supplier in a partnership mode can lead to the suppliers identifying unnecessary costs in the purchaser's operations. Once identified these costs can usually be eliminated, or at least reduced.

A key feature of SCM is the elimination of the time spent by inventory waiting to be processed. An analysis by Womack and Jones of the time taken to produce a can of cola has come up with a figure of 319 days, most of which is taken up with long periods awaiting the processing of bauxite into primary aluminium. One objective of SCM is to reduce waiting time and minimise inventory as far as possible.

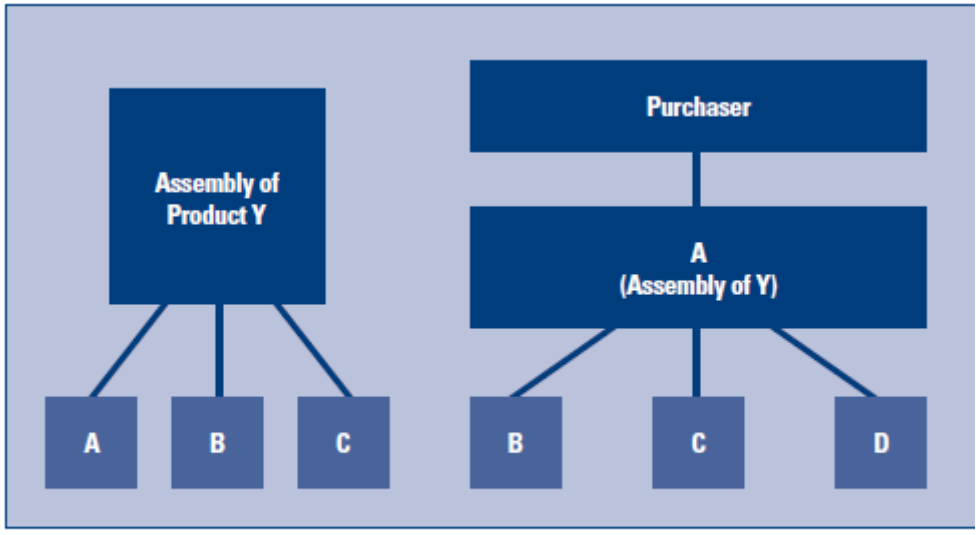

Fig.1 Maps of the supply chain showing the tiering process. Source: Strategic Purchasing and Supply Chain Management by M Saunders

Shaping the Supply Chain - Supplier Base Reduction and Supplier Tiering

Organisations may conduct appraisals of what constitutes their core business with a view to assessing the feasibility of outsourcing their non-core activities.

When such outsourcing is undertaken, it will lead to the purchasing organisation buying in many of the services or components previously produced in-house. This can increase the number of suppliers with which the organisation deals. However in order to manage the supply chain more effectively organisations need to concentrate their relationships. This means reducing the number of suppliers with which the purchaser deals. A purchaser needs to shape his/her supply chain by tiering the supplier network. This may be shown diagrammatically as a map of the network (See Fig.1 below):

Prior to tiering, A, B, C and D supply parts to the purchaser for assembly; following tiering, B, C and D supply parts to A who supplies the assembly to the purchaser (taken from Strategic Purchasing and Supply Chain Management by M Saunders).This process has resulted in significant reductions in the number of suppliers.

The concept of lean and agile supply chains has come to the fore in recent years. Lean in this kind of situation having been defined by Lamming as: the state of business in which there is dynamic competition and collaboration of equals in the supply chain, aimed at adding value at minimum total cost, while maximising end customer service and product quality.

Central to the idea of lean manufacture is the Japanese concept of 'muda' or waste in the sense of any activity which consumes resources but adds no value – uneconomic levels of inventory.

To illustrate the ideas involved, lean in the motor manufacture environment is characterised by, for example:

- JIT deliveries to assembly lines
- The effective use of value analysis and value engineering approaches
- Co-operation between assemblers and first tier suppliers, effected through supplier associations
- Zero defects in parts and components supplied.

Where defects do occur, both supplier and buyer join together to establish and remedy the cause. Closely associated with lean is the term agile which in the context of SCM has been characterised as being applicable to businesses which are fast moving, adaptable and robust, capable of rapid adaptation in response to unexpected changes, market opportunities and customer requirements. Such business are founded on processes and structures capable of achieving competitive performance in a highly dynamic and unpredictable business environment.

Lean and agile are sometimes seen as synonymous whereas in fact there is an important distinction to be made – agility is a better long-term strategy for supply chains to cope most effectively with turbulence in mass market environments (Purchasing and Supply Chain Management by CK Lyons and B Farrington)

SCM AND THE PURCHASING FUNCTION

In their book Purchasing Principles and Management, Peter Baily and his co-authors suggest that the purchasing function, instead of being the routine ordering activity that it once was, is now just one element, albeit a vital one in the supply chain continuum. In this continuum the links in the chain are illustrated diagramatically as flowing from the supplier's supplier at one end of the continuum through to the customer's customers at the other. Payment, together with information (in the form of orders and schedules) travels in the opposite direction.

Value is added at each stage (hence the term value stream). A typical soft drink can is used to illustrate the various value-adding stages from initial ore extraction through reduction, smelting, rolling processes (hot and cold), distribution, and retailing through to the end consumer, although it is important to note that for most of the stages in this process (which can last for the best part of a year) little, if any, value is being added.

Supply chains are essentially a series of suppliers and customers with each customer becoming a supplier to the next downstream function or level until the end consumer of the product or service is reached. In this environment, purchasing can undertake a number of significant activities including:

- Selecting and rationalising the number of first tier suppliers
- Ensuring that appropriate contractual procedures are in place
- Making sure that suppliers meet performance expectations
- Locating suppliers able to contribute agility to the supply chain
- Providing suppliers with accurate forecasts of requirements
- Advising on make-or-buy decisions, outsourcing, leasing and similar strategies

- Proving key information to strategic managers on materials, prices, availability, etc.

The supply chain may affect the purchasing function in a number of ways, for example:

- The number of purchasing staff is likely to be reduced due to some activities being made redundant by IT, or taken over by other teams or departments within the organisation
- Purchasing may no longer be a standalone function but simply be one activity within an integrated supply chain
- Purchasing staff will need to acquire competence in other supply chain activities and general management skills, along with the capacity to think strategically rather than functionally and operationally (*Purchasing and Supply Chain Management by CK Lyons and B Farrington*)

P&SM professionals should become increasingly involved, and where possible lead, the development of SCM. However, it is recognised that not all buyers have the skills necessary to manage even the upstream part of an organisation's supply chains; these can be complex networks of complex supply chains, notwithstanding the supply chains within and downstream from the organisation.

SCM requires a Board level appointment; this is because it is such a central function and is fundamental to the commercial management of the business. SCM is pivotal to the business as it involves responsibility for the end customers' demand right through the organisation to the suppliers, and where appropriate, beyond. Such a role requires objectivity, an open mind and an ability to work with all stakeholders within the chain such as sales, marketing, finance, production (if manufacturing), procurement, logistics and distribution.

In particular, SCM needs to work closely with account managers who are best placed to feed information back into the supply chains. Unfortunately, many organisations still work in functional silos instead of on a cross-functional basis, but SCM demands this crosscutting approach for the effective management of customers' needs.

The key skill of an effective supply chain manager is relationship management. The ability to manage customer relationships, both internal to the organisation and external, and supplier relationships is fundamental to success in SCM. In the context of supplier relationship management, whilst CIPS would endorse backward integration as a technique, it would argue also that SCM is able to provide benefits over and beyond backward integration. In essence both SCM and backward integration are means to an end, and companies should select whichever of these two approaches is most appropriate for them in specific circumstances.

The skill of the purchasing professional working in an SCM environment lies in getting suppliers interested in working with the buying organisation so that the suppliers perceive the buying organisation as a valuable long-term client relationship which is worth investment. A key competence is sophisticated interpersonal skills with an ability to persuade, influence, communicate, facilitate, co-ordinate and manage the human implications of change. Another valuable competence is the ability to challenge existing processes, policies, and procedures.

P&SM professionals wishing to move into SCM must adopt all of the above skills and competencies but, most importantly, should be able to think in terms of the whole business.

To derive maximum benefit, supply chain thinking would of course pervade the whole of the company's corporate strategy, with supply chain considerations being as integral a part as marketing, production or finance.

THE KEY REQUIREMENTS OF A SUPPLY CHAIN

Within Purchasing and Supply Chain Management, Lysons and Farrington suggest that the essential requirements are connectivity, integration, visibility and responsiveness. These may be defined as follows:

- Connectivity – the capability to exchange information with external supply chain partners in a suitable format for facilitating inter-organisational collaboration
- Integration – the process of combining or coordinating separate functions to enable them to interact in a seamless fashion
- Visibility – the ability to access relevant data in terms of its relevance and importance to the supply chain
- Responsiveness - the ability to react quickly and effectively to customer needs by delivering the right product at the right time and at the right cost.

THE STRATEGIC ROLE OF SUPPLY CHAIN MANAGEMENT

- SCM has a strategic role within the organisation. It is pivotal because, as stated above, it spans all demand, right from the end-customer's requirement through to the suppliers who provide the goods and services required to meet that need. Sometimes, SCM involves going beyond the suppliers that interface with the organisation, to their suppliers, in order that improvements can be made. These may include removing cost, increasing quality or ensuring ethical, environmental or socially responsible inputs. Very few organisations have worked closely with their suppliers' suppliers; working at more than two suppliers remove is unusual. An example of this would be a bank that is purchasing cheque books – the first supplier is the printer – but, given the importance of cheque books to banks, not least the brand/image considerations, working with the paper and ink suppliers would be seen as appropriate and desirable.
- SCM involves the sharing of risk with suppliers. This can involve moving the risk up the supply chains to those suppliers best able to manage it. Such devolution of risk will come at a cost and so to that extent it is an economic decision. An organisation has to determine the right approach to meet its own objectives, it should, therefore, evaluate the economic drivers to develop an appropriate level of sophistication in respect of its supply chains. This may involve deciding to bear most risks internally. For instance, organisations must ensure that the goods and services that are critical to them have security of supply and that the supply chains are managed accordingly.
- However SCM is not only about sharing risk, it is also about sharing benefits, which is an aspect that some organisations may not find comfortable.

Some organisations make the mistake of outsourcing a requirement and believe that the supplier in question is then responsible for managing that need. CIPS believes that it is quite the reverse; outsourcing and similar strategies require very careful SCM in order to be successful.

THE OBSTACLES TO THE SUCCESSFUL IMPLEMENTATION OF SCM

A survey undertaken by Exel Logistics suggested that the following could be hurdles to overcome when implementing an SCM approach:

- Fear of failure: may largely be avoided by building manageable foundations and not attempting to put the whole solution in place at once.
- Loss of control and confidentiality - build true partnership and trust.
- Organisation hierarchy and culture - these are often very different amongst the many organisations that comprise the supply chain. Merging them is a difficult but essential process. Supply chain partners often adopt supplier base reduction and supplier tiering to minimise the complexity.
- Information Systems - a common system for moving information up and down the chain is essential.
- Cost sharing mechanisms - the risks and benefits need to be shared, this is a fundamental aspect of any partnership.

- Supply chain partners, not third party contractors. It is the people in the organisations who are partners and will make the partnership work or fail.
- No single player can succeed alone - all must collaborate to make it happen.
- Realistic implementation timetables.

HINTS AND TIPS

- For best results, SCM requires a Board level appointment; it has a pivotal role to play within the organisation, involving responsibility for predicting and satisfying end customers' demand back through to the suppliers and beyond. If this is not possible then a champion for SCM should be identified at Board level.

- Supply chain managers are the true arbiters of total cost, as they are in a position to monitor and influence the whole cost base across the business.

Supply chain managers should be identified within the network and a strong communication strategy developed between them.

- P&SM professionals should become increasingly involved in SCM, ideally playing a leading role in its implementation, wherever possible. Communication is again the key to the success of the supply chain. P&SM professionals should understand the route the product or service takes and the potential risks along the route.

- Organisations should manage their supply chains for both direct spend ie those goods and services required for the business (components for a manufacturing process for example), as well as indirect spend ie those goods and services required to support the business (professional services for instance). One of the most effective ways of doing this is to create a map of the supply chain as shown in fig. 1 and identify the key players at each stage. It is essential to understand when title, risk, insurance and freight responsibilities pass from one participant to another in the chain. For a practical walk through of the supply chain mapping process, the publications Going Lean: A guide to implementation by Peter Hines and David Taylor, Cardiff University and The Lean Toolbox by John Bicheno are useful.

- P&SM professionals should continually question and challenge the ways in which supply chains are being managed not just within the purchasing dimension, if real value is to be achieved. This involves working cross-functionally and requires a level of trust on behalf of the other participants within the supply chain.

- P&SM professionals should appreciate that passing responsibility on to suppliers in terms of risk, or even outsourcing a service, requires more, not less, management of supply chains on the part of the buying organisation.

- SCM involves sharing risk with suppliers; this can involve moving risk up the supply chain to those suppliers best able to manage it. The P&SM professional should understand that this level of involvement also requires the willingness of suppliers to accept the risk. It is critical that the suppliers' motivation to working with the buyer is tested. This motivation will depend on whether, as a buyer, you are attractive to the supplier and the financial value of the contract to the supplier.

- PSM professionals should develop their SCM skills to supplement the knowledge they possess as far as traditional procurement procedures are concerned.

SUMMARY

CIPS suggests that supply chain managers are the true arbiters of total cost. They are able to see and influence the whole cost base across the business. SCM is responsible for bringing a product to market utilising all available resources, both internal and external, and aligning this activity directly with the organisation's strategies and objectives.

SCM is spreading within business as larger blue chip and global organisations are demanding this approach in order to remain competitive. The effect of this is that smaller organisations, further down supply chains, are becoming involved with, or appreciative of, SCM.

CIPS encourages all P&SM professionals to equip themselves with SCM skills not least hard skills such as process and performance management and to move from traditional procurement, namely managing upstream supply chains, into the organisation-wide application of SCM.

This requires, at least, a rudimentary understanding of inventory management, warehouse management and also distribution management.

- The key skill of a supply chain manager is relationship management (this is a soft skill but many hard skills are also key, notably: process design (redesign); IT integration/role of e-commerce; supply chain modelling; and performance management

Case Study

- Benetton, the Italian fashion knitwear company, provide a good example of late customisation and its benefits. Traditionally, knitted garments are made from dyed yarn, the colour of the garment being determined by the colour of the wool used. This meant for Benetton that there was a need to keep stocks of a given design of garment in several sizes and in several colours. The company felt that if garments could be made from undyed yarn, and stocked in this neutral colour, then when a demand for a particular colour arose the actual garment could be dyed. Suppliers at first said that this approach was unfeasible, in that dying a finished garment posed technical problems of some magnitude. However, persistent attempts to solve this problem finally paid off, and the company has enjoyed the benefit of much reduced inventory as a result. (Bailey et al 2015)

FURTHER READING AND REFERENCES

Books

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Additionally, numerous papers and articles on SCM may be accessed via the internet. A suggested search strategy is: 'supply chain management conference papers research'