# Lean and Agile Purchasing and Supply Management

**CIPS is expressing views on lean thinking and agility because it is an increasingly common activity and one which purchasing and supply management professionals should lead in their organisations.**

CIPS KNOWLEDGE WORKS

Knowledge Summary

## Introduction

This CIPS Knowledge Summary paper does not attempt to discuss in depth any of the four main schools of supply chain management - the Lean, Agile, Power Regimes or IMP (Interaction); CIPS strongly encourages all purchasing and supply management professionals to learn these approaches. The reader is therefore assumed to understand these schools of thought and be familiar with the strategies that flow from them.. Where details are provided, it is for the purposes of the immediate context and clarification only.

## CIPS Positions on Practice

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

- CIPS takes the view that in principle at least the lean philosophy is applicable to all corporate situations.
- When applying lean thinking to purchasing and supply management, CIPS encourages purchasing professionals to make a clear distinction between non-value add and necessary non-value activities.
- Whilst focussing on the issue of waste in supply chain situations, CIPS would also encourage purchasing and supply management professionals to consider waste from a wider perspective.
- CIPS takes the view that lean thinking is one way in which the purchasing and supply management function is able to influence corporate behaviour.
- CIPS considers that purchasing and supply management professionals should work closely with their internal clients to implement lean principles.
- CIPS supports the use of tools such as balanced scorecards to ensure compliance with issues such as corporate governance.
- CIPS is of the opinion that, rather than being a waste, a customer requirement should be seen as representing a value-adding opportunity.
- CIPS considers that lean thinking and agility are able to co-exist quite satisfactorily within an organisation.

## Lean Thinking

The 'lean revolution' began in the 1980s with JIT tools and similar techniques from Japan that were utilised mainly in the automotive industry. During the early 1990s benchmarking encouraged the emulation and proliferation of these techniques so that by the late 1990s the lean approach was focused on supply chains. Nowadays lean thinking is commonly applied, in varying degrees, to all aspects of business. It is still evolving, with much work being done by, in particular, the Lean Enterprise Centre at the University of Cardiff.

There are five key principles to lean thinking:

- specify what creates value as seen from the customer's perspective
- identify all steps across the value stream
- make those actions that create that value flow
- only make what is pulled by the customer just in time
- strive for perfection by continually removing successive layers of waste.

Cardiff University defines waste as "anything that does not add value to a product or service in any office or manufacturing activity". CIPS supports this definition but adds that in principle, lean principles can be applied in any situation.

All activities undertaken by an organisation can be placed in one of the following categories:

- Non-Value Adding - activities that do not directly contribute to the satisfaction of customers
- Necessary Non-Value Adding - activities that have to be done (to comply with legislation for instance).

(Activity to ensure compliance with legislation is value-add in that it avoids the costly problems associated with non-compliance.)

CIPS encourages purchasing and supply management professionals to consider these categories when applying lean thinking to purchasing and supply management.

## Waste In Supply Chains

A number of academic studies have identified seven types of waste in a typical supply chain:

- transporting
- defects
- inappropriate processing
- waiting
- unnecessary motion
- unnecessary inventory
- overproducing.

CIPS encourages purchasing and supply management professionals to bear these examples in mind but to also think of waste from a wider perspective.

Although lean thinking was developed by the motor industry it is equally applicable to sectors such as utilities, services and retail. The 'lean' concept is applicable to all types of purchasing organisation irrespective of size. A simple manifestation of lean thinking is to analyse the supply

# Lean and Agile Purchasing and Supply Management

process/chain and internal ordering (requisition to payment) and remove any unnecessary steps or processes, i.e. remove waste and increase value. Purchasing cards and aspects of eProcurement are two examples where lean thinking is commonly applied by purchasing and supply management professionals. Simple improvements like consolidated invoices from suppliers also remove waste. Innovations such as rather than a car manufacturer paying an invoice per batch of tyres, payment is automated per car off the production line i.e. payment for four or five tyres (ie including the spare) per unit. However, lean thinking can lead to some processes being removed that add value such as information being fed into an integrated eProcurement system at the time the order is placed. The detailed management information can then only be obtained from the supplier. (It can, of course, be argued that the important point about management information is that it should be readily accessible when required, with the precise source of it being of secondary importance. The 'Shared Data Environment' concept (where all data relevant to both parties is made readily available) should also be borne in mind.

In the late 1980s many organisations had very large central purchasing departments with overall responsibility for procurement; these days purchasing and supply management departments tend to be smaller and leaner, with strategic roles that direct and/or influence the departments or business units that they support. Ironically, supply chains are more difficult to manage than ever, with complex inter-relationships of sub-contractors spanning the globe. Indeed, very sophisticated purchasing and supply management skills are required to manage such relationships. Some organisations manage to influence their second and third tier suppliers but most purchasing and supply management functions do not have the resources to go beyond the first tier. These lean purchasing and supply management functions are also faced with the fact that many UK businesses such as utilities are no longer large buyers of commodities whereas once they had 50-70% of a supplier's business - diversification has led to this being reduced to 10-15%. This obviously has an effect on their power in the marketplace.

## Influencing Corporate Behaviour

The purchasing and supply management strategy and its supporting policies and procedures must always support the organisational objectives and corporate strategy. Lean thinking is one way in which the purchasing and supply management function can influence corporate behaviour as many senior directors do not appreciate the total cost of bought-in goods and services (and works), and so for the purchasing and supply management function to identify this and then implement lean thinking is a major opportunity for the promotion of professional purchasing and supply management. This can then lead to purchasing and supply management influencing or leading corporate decisions on the use of organisation-wide integrated finance systems, for instance. Purchasing and supply management professionals should work closely with their internal clients to identify ways of implementing lean principles.

One consequence of 'lean' may be fewer suppliers, achieved by for example, grouping suppliers to supply particular categories of requirement. This started in the motor industry with sourcing strategies leading to a smaller number of suppliers that could then be more effectively managed. When organisations become too lean - such as relying on one supplier for a strategically important requirement - problems can arise. For instance Lucozade lost millions of pounds in market share as its single source glass bottle supplier had also outsourced this to sub-contractors who then let their client down. Effective risk assessment employed at the appropriate stage in the sourcing process will enable mitigating strategies to be developed and provide greater confidence in the lean approach. Another example is where a well-known civil engineering contractor sub-contracted a strategically important project to Romanian labourers who could not understand English and subsequently failed the client in a publicly embarrassing, and very expensive, fashion.

The trend for outsourcing in the 1990s in particular, was intended to make organisations leaner by enabling them to concentrate on their core skills. However, in some cases they became too lean and lost their core competences in the process. Purchasing and supply management professionals must regularly assess the risk to their organisations in losing core competences and correct the situation by insourcing as appropriate (reference should be made to the CIPS Knowledge Summary paper on Outsourcing). Insourcing is not a panacea however, as unfortunately it is very difficult for an organisation to re-create the skill base it once had; an example of this is British Gas' R&D skills which were once world-class but which now no longer exist (it should not be forgotten however that the company was to some extent working in an artificial environment arising from the government's obsession with privatising the business, so arguably this is not an ideal example). If knowledge is retained with suppliers then organisations become less and less commercial in their outlook and more dependent on those suppliers. Moreover, where organisations become de-skilled (and in particular lose their commercial skills) they fail to see market opportunities, or are too lean to respond quickly to such opportunities when they arise.

In Japanese culture, employees generally enjoy a 'cradle-to-grave' contract with their employer (although there are indications that this may be changing) whereas in the UK, for instance, organisations are far more inclined to 'chop and change' their workforce. Notwithstanding this, one criticism of lean supply bases is that it exploits the workforce although it can be argued that in many cases outsourcing or appointing one supplier of facilities management for instance can lead to a more enriched workforce. Employees often become multi-skilled with, for instance, plumbers learning to become electricians and greater career opportunities being created as a result. Such facilities management companies often build in incentives schemes leading to higher quality of service, greater added value, and inefficiencies being driven out.

The growing trend towards acquisitions and mergers (see the CIPS Knowledge Summary paper on this subject) has led to friction within purchasing and supply management in some cases. For example, if company A which has applied lean principles and has taken out all waste is then taken over by company B which has a different culture, the relationships with suppliers will change, depending on the culture aims of the newly merged company and its planned supply base strategy. It is unlikely that all of the suppliers will view the changes in a positive light, at least not in the short term, and if the supplier, who may have become a market leader having enjoyed a single source contract from the lean client, does not like the new dominant culture they may take their business elsewhere. The newly-merged company will now have a clear indication of the effect of its culture and strategy, with a timely opportunity to reassess the situation to ensure that optimum value is being achieved.

It can be argued that the extent to which the market

# Lean and Agile Purchasing and Supply Management

CIPS KNOWLEDGE WORKS

Knowledge Summary

situation can change as a result of lean thinking is a function of whether or not the organisation is driven by the market (e.g. banks) or whether the organisation drives the market, as in the case of monopolies such as Microsoft.

Lean principles may also to lead to a 'bloating' effect. An example of this is where a very lean organisation was worried about stakeholder perception of corporate governance and so implemented measures and audit trails to an extreme degree, using balanced scorecards etc. to demonstrate compliance and integration. CIPS supports the use of such tools but organisations should be aware of the dangers of overreacting to market demand (worries about corporate governance issues for instance), and in so doing, undermine all the lean principles that have already been embedded. In a truly lean environment, activities will all be value-add and activities to demonstrate for example good corporate governance and ethical practices should be determined in conjunction with their direct benefit to the organisation (compliance with legislation, enhanced reputation and prestige, etc) and the needs of the stakeholders (ethical investment for instance). Bureaucracy is always to be resisted and avoided relationships outside the purchasing and supply management function should be cultivated to ensure that a commonsense and commercially viable approach is taken and that one part of the company does not inappropriately drive the activities of another.

CIPS' view is that a customer requirement is not a waste - indeed it is a value adding opportunity customers want choice and continual improvement. In an effort to be leaner, a high street bank reduced the number of cheque books removing one with birds etc. printed on it. Their customers created a backlash to this and so the bank had to re-introduce the deleted version. The bank then recognised that a key differentiator might be 'left-handed' cheque books that tear the opposite way and are printed to suit left-handed people. These left-handed cheque books were then produced in all the versions required by right handed customers meaning that the bank had to purchase more than twice the amount of types cheque books than before! No organisation should ever offend or disappoint its customers as a result of the application of lean thinking. However, lean thinking is very appropriate from the supply-side perspective - it just needs to consider the implications for the customer and the opportunity cost of not being able to respond to a customer need.

## Agility in Supply Chains

It can also be argued that all organisations require an element of agility in response to customer demand. Racal was asked to hold inventory for its customers in order to respond on very short lead times inventory in this respect is not therefore a waste - it is a value add to the customer. Although in this case there must have been a cost to Racal in providing the service to the customer - their margin was presumably sufficient to absorb this cost. It is a truism that for some companies to be operating 'just in time' it is usually to be found that someone else in the supply chain has to be operating 'just in case'.

Agility in supply chains is a subject researched and promoted by the Agile Supply Chain Research Centre at the Cranfield School of Management, where 'agile' is defined as being 'quick and nimble' as opposed to 'lean' which is considered to be 'having no surplus flesh or bulk'. The agile school of thought considers issues such as time and velocity to be essential tools in competitive supply chains. CIPS encourages the reader to study this research and utilise that which is best suited to their organisations.

The CIPS view therefore is that lean thinking and agility can exist side by side in organisations, with 'Very Lean' and 'Extremely Agile' being seen at either end of a continuum; most organisations are placed somewhere in the middle.

'Lean' should be used as appropriate to businesses possessing some degree of agility to respond to customer needs and market opportunities. Very few organisations should come down (to use a footwear analogy), to a size 8 when a size 10 is a perfect fit.. Waste therefore, is that which a customer does not need, and which can therefore be liminated. Furthermore, CIPS recommends that organisations move away from such terminology as 'lean' and 'agile' which are perceived as pejorative and develop their own terminology to best suit the place where they sit on the lean to agile continuum.

CIPS also supports the Power Regimes school of thought as developed by Birmingham University's Centre for Business Strategy and Procurement. This, and the IMP school (Interaction) can both be employed alongside lean and agile principles. The skill of the purchasing and supply management practitioner is to have a thorough knowledge of the strategies that support these approaches and then, by use of personal judgement, employ the most appropriate strategies for their own organisation.

'Agility' means using market knowledge and a responsive supply network to exploit profitable opportunities in the marketplace. 'Lean' means developing a value stream to eliminate all waste (including time), promote innovation and enable a level schedule. CIPS subscribes to the view of Professor. Andrew Cox (University of Birmingham) in his view that lean and agile philosophies do not conflict; indeed they contain common features that can be usefully combined. Professor Cox asserts that the lean paradigm is most powerful when the winning criteria are cost and quality whereas agility is paramount where service and customer value enhancement are key.

## Conclusion

As this paper makes clear, 'lean' and 'agile' concepts have been, and continue to be, the subject of academic research, notably at the University of Cardiff, the University of Birmingham, and the Cranfield School of Management. What the paper also makes clear however is that 'lean' and 'agile' are not simply theoretical concepts - they also have considerable practical value not least because in principle at least the lean philosophy is potentially applicable to most situations. The paper also makes the key point that lean thinking is one way in which purchasing and supply management is able to exert influence and leverage on corporate behaviour.

The paper additionally suggests that one consequence of 'lean' may well be a smaller number of suppliers; from the buyer's perspective this can represent both a problem and an opportunity.