



Emnekode : Org 440-440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 1 av 19

Section A. I

To explain how SCM can contribute to increasing a firm's competitive advantage it can be helpful to define some key concepts

SCM is : The planning, coordination and control of all the processes, activities in the supply chain. It is about coordination and collaboration between different partners in the supply chain, be it suppliers, customers or other stakeholders. In essence SCM integrates supply and demand processes in order to effectively create value through the different parts of the supply chain, down to the end customer.

Logistics is one of the major factors/parts of supply chain management and can be defined as the process of coordinating material flow and information flow through ~~the~~ all the different links in a supply chain, from raw material procurement to end customer.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 2 av 19

By continuously improving logistical capabilities and other parts of SCM, one can gain a competitive advantage ~~off~~ over ones competitors.

In recent years supply chain management has become an increasingly important key factor in both domestic and international business spheres. The last four decades we have seen a sharp growth in ~~the~~ internationalization and globalization. Bigger markets, sharper competition due to "low cost countries", larger technological complexion forces companies to focus on reducing costs in other ways than just pure outsourcing. And to produce/create more value for customers than ever before. The different logistical parts/processes in a supply chain is a potential gold mine for both cutting cost and offering customers increased quality of service.

There are several factors one can compete on ~~over~~ when looking at supply chain processes. There are three categories of goals ~~where~~ you can "compete" on to gain a competitive advantage. These categories ~~are~~ of objectives are:

- 1) Hard objectives
- 2) Supportive objectives
- 3) Soft objectives



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 3 av 19

1) Hard objectives are quantifiable measures where a company can put focus to increase its competitiveness. The three hard objectives

◦ Quality: By ~~effect~~^{having} effective logistical processes one can continuously improve the product offered. Few defects, offering high quality at competitive cost, durability etc.

◦ Time: By optimizing logistical challenges such as transportation, manufacturing processes, effective inventory management, etc, a company can distinguish itself by offering shorter lead times on their products. If you are in a competitive market where products are easily substituted, being the one who can deliver your products the fastest can be a huge competitive advantage.

◦ Service: By having the best customer service you can gain the upper hand on your competitors. Availability of products, well trained sales force, customer service representatives, efficient follow up after purchase, are all factors which will increase service perception with the customer and increase perceived value.



Emnekode : ORG 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 4. av 19

2) SUPPORTIVE CAPABILITIES.

There are three supportive capabilities that can increase competitive advantage:

1) Dependability: It's not good enough to be able to deliver on time, in full at right quality, sometimes. The dependability objective is about being able to *always* be able to deliver at the right time, in full at right quality. Having customers perceiving you as a supplier they can depend on gives bigger chances of ~~going~~ gaining customer loyalty and continued sales in the future

2) Dealing with uncertainty: Being able to respond quickly and efficiently to unforeseen events can give a huge competitive advantage. Dealing with uncertainty is about being 1) Preemptive/ mitigating and being contingent(?). This means to both work on having in place processes to avoid or prevent disruptions in the supply chain, but also to have the capability to quickly respond and get back on your feet if something ~~unforeseen~~ actually happens



Emnekode : 0rg 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 5 av 19

3) Environmental/sustainability

Ensuring eco friendly processes, reducing carbon footprints and other factors to ensure sustainable (drift) and environmental protection

Can also talk about CSR, working with your local community to help local growth, protect human rights, just wages and so on

3) Soft objectives : Not easily quantifiable, but centers around being able to give prompt and good responses to customer inquiries and problems. Also, we can look at the matter of Security, ~~and~~ in this setting, securing customer information, not leaking sensitive information and preserve privacy.

It is impossible to be able to be best at all these different objectives but they give some direction on how to gain competitive advantage through SCM. The objectives on which you should focus on will depend on which product you provide, competition, markets etc



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 9 30/11-2011
Ark nr. : 6 av 19

II) There are three different ways we traditionally measure logistics cost.

Fixed vs variable cost: Fixed cost are costs that does not vary with the level of production, at least not before certain critical levels (where you need to increase capacity) ~~and~~. Examples of fixed cost can be everything from rental cost of factory space, managerial salaries, and cleaning company cost. Fixed cost is a necessity, but management often want to see this as small as possible because this costs occur even if you have to shut down production. Variable costs are cost that has a direct correlation with production volume. They start at zero when there is no production and increases as production increases. Typical variable costs are labor cost ^{and} cost of materials used in manufacturing.

The advantage with fixed vs variable cost is that it is easy to use and can help companies calculate break-even points (where cost and revenue is the same) to in order to decide on production levels and such. Problem with this method being that it does not take into consideration which assets there are used in production, and which cost that are aside from operations. PP&E are fixed assets but equipment is directly used in production and ~~it~~ should not be sought to be minimized.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 7 av 19

~~Direct~~ Direct vs indirect: In this method you divide costs ~~by~~ looking at which cost that can directly be attributed to production, and which costs that are incurred aside from the production cycle. Direct costs are directly contributed to production and include cost like labor and material cost. Indirect are cost that are incurred aside from the production and can include ~~the~~ the cost of hiring an auditor, paying the cafeteria staff and so on. Indirect cost and fixed cost are not the same. They include some of the same items, but as mentioned fixed assets such as plant and equipment are classified as ~~the~~ cost directly induced by production. Good to use when you want a clear picture on which part of cost is actually contributed to production, and ~~Engineered vs discrete cost~~ which cost are beside production.

Engineered - vs discrete Engineered cost are costs that can easily be attributed to a process, and has a clear input-output relationship. Ex. if it takes ten hours to produce ten boxes of something, you can say that you get a one box unit of product per hour you put into production.

Discrete costs does not have a clear input-output relationship



Emnekode : ORG 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 8 av 19

You know the input but it is hard to measure benefit ~~is~~ produced. Ex. you know how much you pay your cleaning staff, but how do you measure the benefit of their cleaning?

The good thing about Eng. vs dis. cost is that you can get a clear picture of which costs ~~lead~~ in the business you can actually see the ~~is~~ benefit from, and which ones might need more governance or new measuring techniques.

The disadvantage with ~~as~~ all ~~forms~~ the traditional costing methods are they they only focuses on cost producer, not on the factors that drives cost in the first place. It is harder to actively manage or make cost processes more efficient when you do not know the the factors/forces that creates them.

An answer to this problem can be to use Activity Based Costing (ABC) analysis. Instead of just categorizing costs in two different bulks, ABC tries to contribute cost to the different activities in a company. Instead of saying that: "These ~~is~~ cost are related to production, these are overhead/administrative ~~essl~~ costs" \implies



15. ABC recognizes that overhead cost comes from somewhere and that we need to contribute cost to these different activities as well.

Downside with ABC is that it is relatively complex in practice and requires a lot of work

Section B

2. Lean was introduced as a contrast between Just In Time philosophies and western mass-production. Japan, after the second world war was a resource scarce ~~ea~~ country, and in Japanese car manufacturers came the thought of trying to eliminate wasteful processes in the production cycle. They identified that there are basically three different activities in the business

1) Value adding activities: All activities that from the customer point of view adds value to the finished product. From raw materials and being components that starts ~~at the~~ ~~top~~ upstream in the supply chain, being made into finished goods and ends up at the end customer. Every process that will increase the benefit or value a customer perceives when buying a product.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 10 av 19

2) Supportive activities/necessary activities :
These are activities that does not add value for the customer, but are necessary in being able to produce product or get product to customers. Ex the process of filling out customs forms when you are exporting good may not be contributing to the value of a finished product, but it is absolutely necessary ~~is~~ in order to get the product into the given market.

3) Non Value adding activities : These are activities that ~~is~~ does not add any value for the customer, and are not necessary to get product made, or getting the product to the customer. These non-value adding activities are also called waste. The goal with lean thinking is to use less resources on everything, eliminate wasteful processes and to only create value for end customer. The thought being that customers should not have to pay for bad ~~manag~~ management and wasteful processes.



Emnekode : ORG 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 11 av 19

~~The best~~ In lean thinking they mention seven areas where waste may occur. In a guest lecture by Posten & Bring they introduced an eight area of wasteful activity or process. The eight areas are:

◦ Overproduction: Bad forecasting or a strong wish to utilize economies of scale will often result in overproduction. The wish for lower unit cost creates wasteful processes by increasing inventory, reduce quality of products and slow down time to market.

→ Over-processing/unnecessary processes: Processes that not needed to get the product done and out to customers. Inefficient conveyor belts, Screening more than necessary. etc

→ Time: Using time on processes that are not necessary. Can be from bad coordination, eg finished product sits in plant much longer than needed due to bad coordination between transport and manufacturing. Increases lead times and time to market.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : #12 av 19

→ Transport: Unproductive transport between different stages of production. Having a forklift transport goods from one stage to another is wasteful. Locate production stages closer or side-by-side to remove unnecessary transport.

→ Movement: Employees having to perform bends, stretches and other unnecessary movements during production. Eliminate by optimizing movement needed to do stage of production.

→ Errors: Producing faulty products is one of the biggest waste areas. If defects are not discovered they add more cost the further downstream they come before defect is discovered. Increased cost, increased lead times, ~~the~~ bad reputation.

→ Inventory: Not effectively manage inventory increases holding cost, it takes up unnecessary space and you run the risk of ending up with obsolete stock. Inventory is closely related to overproduction as overproduction increase inventory.

→ Unused intellect (Posten & Bring): When people with great potential are not given the chance to utilize it. I know it is an ~~invented~~ ^{extreme} example, but is wasteful to have an engineer with a PhD in working capital management, cleaning the cafeteria.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 13 av 19

Lean thinking is trying to minimize and eliminate waste in these 8 areas by implementing 4 different processes

1) Identify Value: Here you try to identify value from the end-customer perspective. Identify what a customer would look at as value added, and what a customer should not have to pay for.

2) → Map out all processes related with creating a product and get it to the customer

3) Create value flow through minimal waste, minimal delays, quality control ~~etc~~ etc.

4) Enable pull-scheduling instead of push-scheduling. This means that instead of producing first, and then try to push your products out on your customer, you produce only to signals from customers. By producing on signals of demand from customers you can reduce chance of overproduction, reduce inventory, use less time etc

5) Through the four processes above lean thinking tries to create perfection.



Emnekode : Org 440
Kandidatnr. : 2159
Dato :
Ark nr. : 14 av 19

I have tried to explain how eliminating waste can increase ~~the~~ lead time in the section of waste factors, but it can be useful to provide to specific examples of lean in practice. Two examples of "implemented lean" thinking:

1)° Batch sized sizes.

2)° Rapid change over

1) When deciding on batch size it is important to not only look at the direct cost relationship. Traditionally big batch sizes are preferred due to ~~the~~ benefits of economies of scale. This is an example of push-scheduling. Producing huge amounts at a time and pushing it on customers. Can lead to overproduction, increased inventory and slow lead times due to long production cycles. By using pull-scheduling you can produce smaller batches in accordance with signals from customers. Increases ~~the~~ lead times by quicker production cycles, reduces inventory holding and management.

2) Rapid change over was introduced in response to production assets that uses a very long time to switch from one type of production to another



Emnekode : Drg 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 15 av 19

In the book they give the example of an auto-manufacturer where the changeover time needed to switch from producing one time of car surface/doors was eight ~~to~~ hours. This long change over time lead to very lengthy production cycles, then spending a full day changing it to produce something else. In response to this the auto-manufacture recognized the need for more rapid change over and reduce time-waste. They developed a system so that they could switch production in 5 minutes in stead of 8 hours, thereby producing several components each day. Naturally this reduces lead times by optimizing production cycles.

Section B

In a SCM perspective, integration is about information sharing, coordination and alignment, setting the rules for the road for different members of the supply chain or between divisions within the firm.

We can talk about two types of integration

1) External integration



Emnekode : 0rg 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 16 av 19

2) Internal integration.

1) External integration is ~~the~~ developing closer, more coordinated, more aligned and more productive interaction/relationships with different parts of the supply chain. The goal is to create similar incentives throughout the supply chain, where working towards the same goal can increase efficiency and reduce opportunism and disruptions.

In the text book they talk about research being done (can't remember author) that showed that supply chains that were more integrated showed better results and performance than firms that were less integrated. Level of integration were measured on eight different factors, such as

- Shared information on demand
- Shared electronic data interchange systems
- Shared ~~FAVEN~~ information about inventory levels and inventory mix.



Emnekode : ORG 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 17. av 19

This type of information sharing created better coordination between links in the supply chain, created similar incentives and bettered performance

2) Internal integration is coordination, information sharing and alignment of incentives between different divisions within the focal firm.

This can be to create similar incentives between the sales division and manufacturing, between manufacturing and transportation and so on

Research has also shown that more integrated firms score better on advanced logistical challenges such as dependability. No difference in performance between highly integrated firm and less integrated firms on basic logistical processes

To show an example why integration is so important I will show an example when incentives and priorities between division are not aligned or integrated and what logistical ~~and~~ implications this has.



Emnekode : Org 440
Kandidatnr. : 2159
Dato : 30/11-2011
Ark nr. : 18 av 19

Lets say that the purchasing division of a firm is prioritizing low cost when they buy materials for production. The supplier they use is cheap but deliver poor quality materials.

Now the manufacturing is stuck with bad materials for their production right from start. But manufacturing is prioritizing labor productivity and labor efficiency, so they don't care about the quality of materials and goes ahead and produce manufactures anyway.

Now the sales division is stuck with a bad quality product which may in many cases be defect. The priority for the sales division is to keep long-term relationships with their suppliers, which is jeopardized by the lack of quality control in production.

As we can see there are clearly different incentives in the different divisions, that can have a detrimental effect on logistics performance and business sustainability. Here the different divisions needs better communication, coordination and information sharing to align incentives and work in the same direction.



Incentives for integration

o ~~Diff~~ Differences in priority either between divisions internally, or supply chain members externally, may cause disruptions in the supply chain and logistical processes.

o Risk reduction: By working more closely with your supply chain partners you can reduce the risk of opportunism and hold-ups

o By sharing information between firms or division one can improve data on actual demand, which leads to better decisions on production, sales and other important parts of the supply chain or logistics processes.

251