FLEXIBLE SOURCING
– A CASE STUDY AT AXIS COMMUNICATIONS AB

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This article is a brief summary of a Master’s Thesis written at the Division of Engineering Logistics, Department of Industrial Management and Logistics at the Faculty of Engineering at Lund University. The study was conducted in collaboration with Axis Communications AB during the autumn semester of 2006 and addresses issues concerning how the supply chain of a fast growing company can be made more flexible.

Introduction
In today’s society, security awareness becomes ever more important and video surveillance for instance is more frequently used now than ever before. Modern information technology has also made it possible to carry out the surveillance with network cameras and handle the created information with a regular PC.

Axis Communications AB, from now on referred to as Axis, is a company acting on the fast-growing network video market. Axis is market leading and since the market is increasing rapidly, the company is also growing at a very high pace and its intention is to continue doing so. The company develops and uses cutting-edge technology, hence there are little or no knowledge of the marketplace and the predictability of the company’s products is generally low. Axis therefore has a great interest in having a supply chain that is flexible in terms of product mix and volume. Two subcontractors, one in Poland and one in Thailand, conduct the production of Axis’ products.

Purpose
The purpose of this thesis is to map-out, describe and analyse Axis’ supply chain from a flexibility perspective. Suggestions of changes that would foster flexibility in terms of product mix and volume, as the pace of product development is high, are given.

Method
This study has been conducted using a systems approach. The research has been performed in the form of a case study, where Axis’ supply chain is the case that illustrates the reality. An abductive approach has been followed during the study, in other words an inductive and a deductive approach has been combined. The study is mostly based on qualitative data that mainly have been collected through interviews. In order to examine different products’ demand charac-
teristics, secondary data collected from internal company documents have been used. The authors began to hold interviews in order to gain a general picture of Axis and its supply chain. When an overall picture had been obtained, new interviews were held with the purpose of acquiring deeper and more specific knowledge within the areas relevant to the study. At the same time as the interviews were carried out, extensive literature studies was conducted aiming to provide the authors with the theoretical foundation upon which the analysis would rest. During the progress the collection of data from internal company documents went on.

Conclusions

During the analysis of the gathered data the authors visualized four major areas in which changes could be made in order to increase the flexibility of Axis’ supply chain.

Transmittance and exchange of information

Information regarding stock levels and the demand ought to be transmitted from Axis to its subcontractors and suppliers to a greater extent, in order for these actors to be able to be more proactive and responsive. The authors believe that this could enable the introduction of vendor-managed replenishment, were the subcontractors are responsible for operating the inventories of finished goods on a daily basis. This would allow the subcontractors to optimize their production against Axis’ inventory and by that, enhance the flexibility of the supply chain, since the subcontractors’ responsiveness should be greatly improved with this procedure. In addition, information regarding component availability from the subcontractors and suppliers should be given to Axis, in order to visualise the possibilities of changes of production orders. This means that information regarding what the subcontractors can produce, as well as the information, that Axis already possesses, regarding when the products need to be produced, can be merged and utilised by Axis.

Purchasing of components

The authors are of the opinion that Axis should review their purchasing strategy for their strategic components. The inventories of these components are presently held at Axis’ distribution centres, in other words they are kept separate from the subcontractors’ facilities. When the subcontractors are going to produce a product containing a strategic component, the subcontractors order the component from Axis’ distribution centres. This intricate procedure is followed because Axis wishes to have strict control of the flow of strategic components, since these components constitute the very heart of Axis’ products. In general terms, the authors suggest that the inventories of strategic components should be relocated to the subcontractors’ facilities, since it is there that the demand of the components arises. With this procedure the supply chain’s flexibility should be enhanced, since the lead-time will be reduced. The authors suggest that some kind of consignment solution should be worked out for the most critical components. This will provide possibilities to maintain a fairly high level of control of the flow of components, at the same time as it will render possible a more flexible way of managing the supply of these components and reduce the unnecessary handling that presently is taking place at the distribution centres. The subcontractors should be given the responsibility to perform the operational purchasing of the less critical components. This will enhance the subcontractors’ possibilities to control the flow in a manner more appropriate for them and it will also, as mentioned above, reduce the unnecessary handling that presently is taking place in at the distribution centres.

Product development for enhanced flexibility

The conditions for the sourcing for a product throughout its whole lifetime is set in the product development process, why every
party concerned should be involved in the process. This includes not only different departments within the specific company, but also key suppliers, subcontractors and customers. The earlier different stakeholders are involved, the larger the opportunities to change and affect the result will be. The authors are of the opinion that the cooperation between the product development and the purchasing department at Axis should be more standardised in order to improve the exchange of information and the understanding between the departments. This will improve the possibilities to design products for which it is easier to procure components, since problems regarding sourcing and supply can be addressed before the definite choices of all components have been made. The subcontractors should be involved earlier in the process as well, to make sure that their specialist knowledge of production and product development is utilised. The authors also believe that an earlier involvement of concerned parties will make the components, of which the products consist, more standardized, which also facilitates the procurement.

**Differentiated sourcing**

Different products have different demand characteristics and following to that, their supply chains can be differently configured as well. Products with highly unpredictable demand should be given more attention and resources. The inventory levels of the components used for these products should be higher at the subcontractors’ sites, in order for the subcontractors to be able to react quickly on changes in demand. In a longer perspective the products should be configured for form postponement. The customer-defining production steps could then be performed when the customer demand is better known. When it comes to the inventory control of the products, the authors suggest that the control of a product should consider the product’s total revenue as well as the predictability of the product’s demand. Hence, products with a higher demand uncertainty should be controlled with higher inventory levels and more frequent replenishments than products with more predictable demand. A conceptual model, of how products should be divided into different groups taking into account their total revenues and their predictability, is shown in figure 1 below. The figure also illustrates how the inventory of different products should be managed. In the figure group A indicates the products with the highest revenues and group C the products with the lowest.

![Differentiated Sourcing Model](image)

**Figure 1: A conceptual model of a product classification based on total revenue and the predictability of a product.**

**Acknowledgments**

This paper is a short version of a Master’s Thesis written in the second half of 2006. For further reading the reader is referred to the full version of the Thesis, which can be obtained from the Division of Engineering Logistics, Department of Industrial Management and Logistics at the Faculty of Engineering at Lund University.