

Summary

Due to the economic crisis many companies are forced to improve their inventory system. Many types of inventory management systems are available, but companies easily forget that not every system is appropriate for their organization.

It is hard for a company to come to a good implementation of the right inventory system. This research is dedicated to find the factors that decide in what way a company must approach the implementation to come to an implemented inventory system that fits the best within a specific organization.

On strategic and tactical level different decisions have to be taken. In this research the decision of "who owns the inventory and where is it located" is investigated. This paper tries to answer the question of OWNERSHIP and LOCATION for every company by investigating what the possible inventory management systems are.

Literature distinguishes three types of inventory management systems. These systems can offer a guideline in what way a company has to organize their inventory system. The way a company has to approach their inventory management is a decision that must be made at the start of the implementation process. All systems handle management of location and ownership of inventory before actual demand, but are different in the approach of who owns the inventory and where it is located.

The three inventory management systems used are:



With the Inventory Postponement system, the purchase of inventory items is postponed until actual customer demand is known. Therefore ownership and the location of the inventory stays at the supplier side until the demand is known.

With the Inventory Speculation system, the purchase of inventory is done before actual customer demand is known. So ownership and location of the inventory is at the company side before demand is known.

The Inventory Consignment system postpones the purchase of inventory items, but the inventory items are already located at the company before actual customer demand is known. In other words, the ownership of the inventory is at the supplier's side and the location of the inventory is at the company's side before demand is known.

All the systems have their own benefits and disadvantages. The decision to use a specific system is not made on the benefits but based on the fact that if an organization is capable to use this system in a beneficial way.

With the innovation model of the Delft Systems Approach and three different levels of management, the Strategic, Tactical and Operational level, the approach for the right inventory management system is determined on the strategic and tactical level.

This research provides a set of decisions factors that can be used to create the right system. The factors are placed in a table with the three inventory management systems.

In the top line of the table all decision factors are listed. In the first column the three inventory management systems are listed. For each factor is indicated if it is important for the system or not.

(table 1)

	Strategic						Tactical	
	SI	SoG	NoS	CPS	PCD	SoFG	SqqR	Cod> Slt+Ct+Dlt
Postponement	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Speculation	No	No	No	Yes	No	No	No	No
Consignment	Yes	Yes	Yes	No	No	Yes	No	No

SI	Supplier Interaction	SqqR	Supplied quality and quantity reliability
SoG	Standardization of Goods	Cod	Customer order-delivery lead-time
NoS	Number of Suppliers	Slt	Supply lead-time
CPS	Customer preference stability	Ct	Cycle time
PCD	Predictability Customer Demand	Dlt	Delivery lead-time
SoFG	Standardization of finished goods		

Table 1: Overview of decision factors and approaches

The number of requirements differ per system. The speculation system could be considered as the simplest system to apply. The only real important requirement is the stability of customer preferences. This is because this system can hardly deal with quick changes in preferences due to the inventory that is stored at the company. For the other two systems much more factors are important. None of the three systems, is the best system. Simply because it depends on the type of company. When we compare Speculation with Postponement and look at the benefits, it seems that Postponement will create more profit then Speculation. But when a company does not meet the criteria of Postponement, the use of Postponement will have the opposite effect with respect to the benefits. Think of stock-outs and not being able to meet customer demand. Nevertheless, an environment where a company can implement a postponement inventory system is the most wanted situation because in an ideal situation this system brings the most benefits and reduce costs.

Although the overview of decision factors give a good guideline to decide which system is the best to use, it fails when a company meets a mix of the requirements of the different systems. Therefore a decision-tree is developed that can lead a company to the right inventory management system.

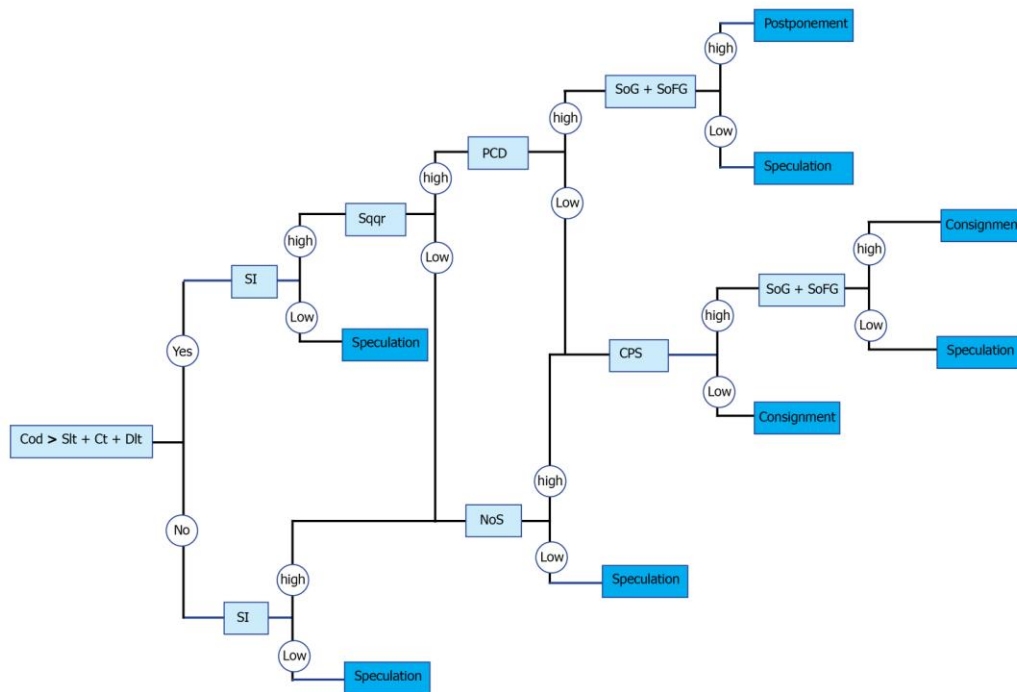


Figure 1: Decision-tree for inventory management systems: Postponement, Speculation and Consignment

The decision-tree shows that a company will use Speculation if he drops out for the other two options. It underlines again that Speculation can be seen as basis system, the better the conditions are respectively Consignment and Postponement will be used.

Taking everything into consideration this paper shows that the formulated decision factors offers a good guideline to come to the right inventory management system.

The importance of starting on strategic level in order to come to the right inventory system is illustrated. The overview shows us the differences and similarities between the systems. And the research gives a good insight of the content of each system.

The systems and decision-tree are a good solution for the decision of "who owns inventory and where is the inventory located", but the systems do not suggest a specific way of organizing the organization for each system. Further development of this subject is considered as a good addition to this research.