# The Design and Operation of Distribution Centres in Agile Supply Chains

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May 2009

**PB** My name is Peter Baker, a Senior Lecturer at the Centre for Logistics and Supply Chain Management at Cranfield. I would like to talk to you today about my paper entitled "The design and operation of distribution centres in agile supply chains". This paper was published in the International Journal of Production Economics.

Consider: How many companies have a 5 year plan they are confident in? – a 1 year plan, or even a 3 month plan? Markets are becoming more and more volatile – even before the unexpected downward turn following the credit crunch.

In the literature, much has been written about supply chain agility, but warehouses and distribution centres have been largely ignored. This is rather surprising as warehouses form about 25% of logistics costs and the inventory within them a further 20% or so. Also, in terms of service warehouses are critical as they are normally the last despatch point for customer orders.

The purpose of this research was to fill this gap. To do this, interviews were undertaken with Supply Chain Directors of nine companies, covering manufacturers, wholesalers and retailers, including well known names such as Avon Cosmetics and Argos Stores. In these interviews, the companies were asked: in what way do distribution centres need to be agile? – as it is known from manufacturing literature that is meaningless just to tell a manager to "go forth and be flexible". In all, five main types of agility were identified.

Visits were then made to the distribution centres in these companies to see how they responded to each of these flexibility requirements.

A framework was thus developed examining different types of agility and classifying the different types of responses to these, whether these be in building design, equipment types, staffing policies, or systems.

A key conclusion of this paper is the recognition that distribution centres are expensive and are long term fixed assets. It is not easy for a company

to change its network of distribution centres and, similarly, it is not easy for a competitor to imitate this network. Distribution centres can therefore be a basis of significant competitive advantage, or disadvantage.

The formulation of business strategy therefore needs to take full account of the company's distribution centre capabilities, and, conversely, the design of distribution centres needs to be informed by possible future business scenarios. Distribution centres cannot be designed in a vacuum. The agility framework presented in this paper can be a vital tool to help in this design process, which must involve both business strategists and supply chain designers.

I hope that you enjoy reading this paper.