Mediaware – Turning the Supply Chain Upside Down in Packaging[1]

Simon Healy

Mediaware, Ireland

Seamus O'Reilly

University College Cork, Ireland

INTRODUCTION

While digital printing, or print on demand (POD), has been used for some time in office environments, it has only recently started to impact in industrial printing. In an industrial setting this technology has the potential to transform packaging design, inventory management and, most significantly, the ability to respond rapidly to changing design, brand management and regulatory requirements. In late 2008 a number of entrepreneurs from various backgrounds (including printing, packaging, marketing, financing, retailing and management consultancy) came together with a view to exploring this potential. They established Mediaware Digital Ltd. This company set out to establish itself as a provider of 'business solutions that provide brand owners with a unique opportunity to reconfigure their supply chain and marketing functions to enhance both efficiency and responsiveness through new and dynamic innovative approaches'.

THE MEDIAWARE BUSINESS MODEL

Mediaware viewed packaging on demand as a process where instead of a warehouse full of boxes, users could access a virtual packaging warehouse through a unique IT interface. Digital technology eliminates surplus inventory and overruns. It also eliminates

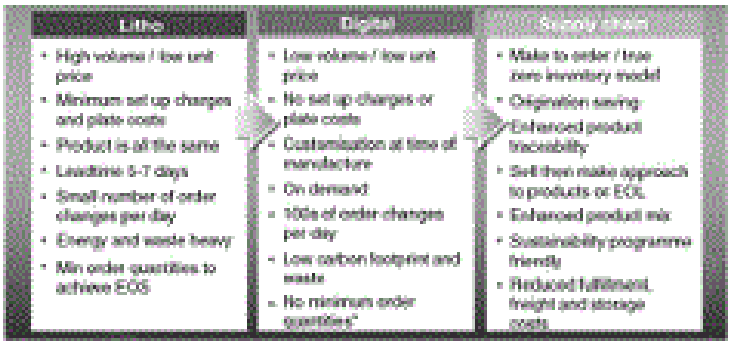

Figure C4.1 Supply chain benefits

plate production and many other pre-press processes, reduces waste, improves budget, reduces headcount and saves on space. Mediaware also saw it as a sustainable process. The environmental advantages of digital printing for folding carton packages include a zero inventory manufacturing model, thereby eliminating packaging obsolescence. This is in sharp contrast to the traditional mode (litho) where waste is expected as minimum order runs and buffer stocks are built into the operation and inevitably create waste. Figure C4.1 summarises the benefits of digital over litho and lists supply chain improvements.

COLLABORATIVE APPROACH

Mediaware looked to leading equipment providers for the hardware. It identified Xerox as a leading original equipment manufacturer (OEM) in colour digital printing and has worked with the company to integrate the Xerox Gallop Digital Packaging Line with customised work flows. This integrated, inline, cut-sheet digital packaging system enables print providers and packaging converters to cost effectively deliver personalised folding cartons and other packaging applications in short runs. Using its own unique customised proprietary software (Arc-Link), Xerox's PrintCise software, and the Xerox Automated Packaging solution, Mediaware created a system that could accept orders via a range of automated interfaces, print in multiple languages, quickly switch from one language to the next and produce small batches with relevant consumer information. This digital packaging solution significantly reduced minimum order quantities. The inline finishing meant that Mediaware could produce customised packaging cost effectively, without having to stop production and manage offline equipment.

The Mediaware process integrates with the client's workflow and supply chain to deliver what is needed, when it is needed and in the exact quantity required. Its proprietary software allows Mediaware to receive electronic orders (including detailed packaging specifications), segregate jobs into queues and print the carton without any human interaction until it is ready for insertion into the folder and glue machine. Figure C4.2 compares the efficiencies achieved with the traditional litho print process.

The electronic transfer of data from the customer facilitates a virtual supply chain where the physical printing takes place in Dublin, Ireland in response to an order signal from

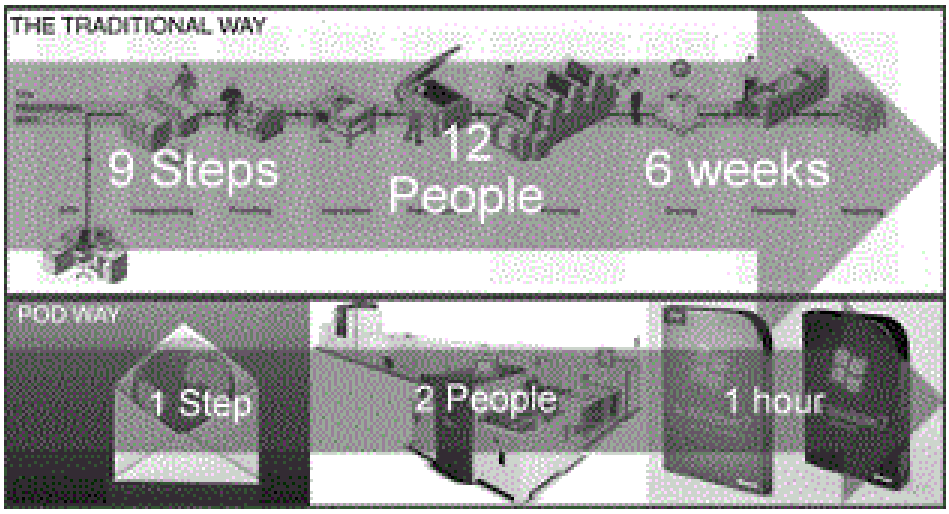

Figure C4.2 Traditional process versus POD process

elsewhere. The finished goods logistics solution (e.g. next-day delivery) depends on customer requirements. Furthermore, this approach also facilitates the establishment of Mediaware as a tier zero supplier – i.e. the supplier is physically located in the customer's plant. It has the capability to set up one of its machines on the customer's line and to interface seamlessly with the production flow producing packages on demand. In addition to the working capital benefits to the customer (derived from reduction in inventory and obsolescence) this also reduces capital expenditure (whether through leasing or purchase) as the supplier not only provides the equipment but also the entire packaging solution.

FIRST MAJOR CUSTOMER

In early 2009, Microsoft engaged with Mediaware for the production of folding cartons to support its soon-to-be-launched Windows 7 software and other products (Figure C4.3). The specifications were demanding, requiring printing a stream of short runs of glossy, full-colour folding cartons to hold software products, in dozens of languages, for distribution throughout the EMEA (Europe, Middle East, Africa) region on a daily demand basis. Production had to begin in time for the launch of Windows 7 in October 2009, and it needed to satisfy Microsoft in terms of price, quality, environmental footprint and security.

Mediaware also needed to integrate with the client's workflow and supply chain to deliver what was needed, when it was needed and in the exact quantity required. As we noted above, using its customised workflow process, Mediaware could accept orders via a range of automated interfaces, print in multiple languages, quickly switch from one language to the next and produce small batches with relevant consumer information. This digital packaging solution significantly reduced minimum order quantities.

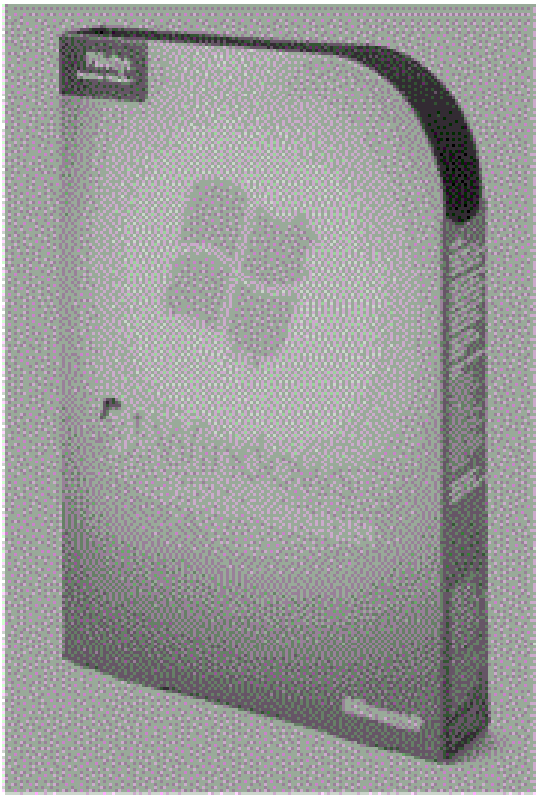

Figure C4.3 Microsoft's folding carton

The competing bids for the Microsoft contract offered solutions bound by old rules of conventional analogue offset print technology. Competitors relied on the old business model, printing short runs in analogue for the best unit price they could offer and storing excess prints for possible use with later orders. In contrast, the process developed by Mediaware in collaboration with Xerox provided close coordination between production and consumption, as well as the ability to operate with lean and agile supply chain manufacturing principles.

Mediaware won the contract as its solution enabled lower minimum orders (in this case as few as five cartons), less waste, less storage, quicker time to market and more secure printing. The workflow process, integrated with Microsoft's order entry, manufacturing and delivery operations, was critical to meeting and exceeding expectations and requirements.

FUTURE DEVELOPMENTS

With the Microsoft agreement well underway, Mediaware is exploring different markets, applications and opportunities for digital folding cartons. The company is currently

working with a number of companies on providing short-run packaging solutions across the IT, pharmaceutical and FMCG (fast moving consumer goods) sectors. Mediaware's business model is equipped to handle the folding carton needs of manufacturers ranging from multinationals to local enterprises. In addition to software companies, pharmaceutical companies are another top prospect. They have some of the same business needs that top software companies have. They have a regular use of small format cartons, they sell internationally and they have a high need for secure print. Mediaware prints a unique code on each carton, allowing item-level tracking worldwide. The total solution also prints a precise number of cartons per job, lessening the risk of counterfeiters gaining access to legitimate packaging.

QUESTIONS

- List and discuss the opportunities that POD technology offers supply chain managers, brand managers and operations managers.
- Discuss the impact of this on supply chain strategy and configuration and on marketing strategies.

NOTE

1. This case draws (with permission) on Mediaware case history published by InfoTrends, 24 March, 2010 (available at www.infotrends.com) and the authors are grateful for input from Nichole Jones, Bob Leahey and Barb Pellow (InfoTrends, US). The authors are also grateful to Xerox for the information provided.