GS1 UK white paper

Omnichannel: the role of integration and data standards

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While in early 2000s, it was the internet which had the most significant impact on the economy; in less than a decade, mobile technologies and social networks are revolutionising the businesses and their supply chains. Today, consumers have an extensive range of options to learn about the products, evaluate and select them, acquire them, and return the unwanted ones.

Multiple channels such as retail stores (e.g. supermarkets, megastores), home delivery, collection points, and digital/downloadable deliveries form a diverse pool of conventional and modern shopping choices for consumers and order fulfilments for supply chains. However, multi-channel systems usually consist of independent, detached channels, developed by retailers in response to the rapidly shifting world of e-commerce. When channels work independently from each other they create fragmented supply chains, and struggle to deliver a consistent and reliable consumer experience. Omnichannel retailing aims to address this by integrating multiple channels in order to coordinate processes, technologies, and people across all channels for each product. With the extraordinary rapid dominance of connected consumers and the evolution of information technologies and personal communication devices, consumers have already pursued an omnichannel approach in their shopping. In fact, it is about responding to those new buying behaviours and styles, which has become a challenge for many retailers and supply chains.

At its very core, omnichannel is all about consistent, more reliable and wider services for consumers. The implications of such services for supply chains are mainly around more integrated, robuster, and smoother flows of material and information. Such system can provide various benefits for consumers and businesses, including: differentiation through value-added services, total sales growth, cost savings, extended trust, and synergy.

Omnichannel: a structural view

By reviewing the recent applications of omnichannel, it is possible to distinguish two dimensions in omnichannel systems:

(i) Channel type: refers to various mediums available in each stage of the customer shopping experience to provide the product/service. They may include stores, websites, social media, emails, ads, catalogues (for pre-purchase); cash, cards, coupons, loyalty cards (for payment); stores, home delivery, collection points (for delivery); post, stores, and drop-off points (for return).

(ii) Channel agent: refers to the entity/firm who manages the channel type in each channel stage (e.g. manufacturers, digital retailers, physical retailer, logistics providers, price comparison websites, and credit institutions

The omnichannel structure built upon multiple, integrate channel types and agents are illustrated here, including how to get your products set up and tips on maximising your sales.
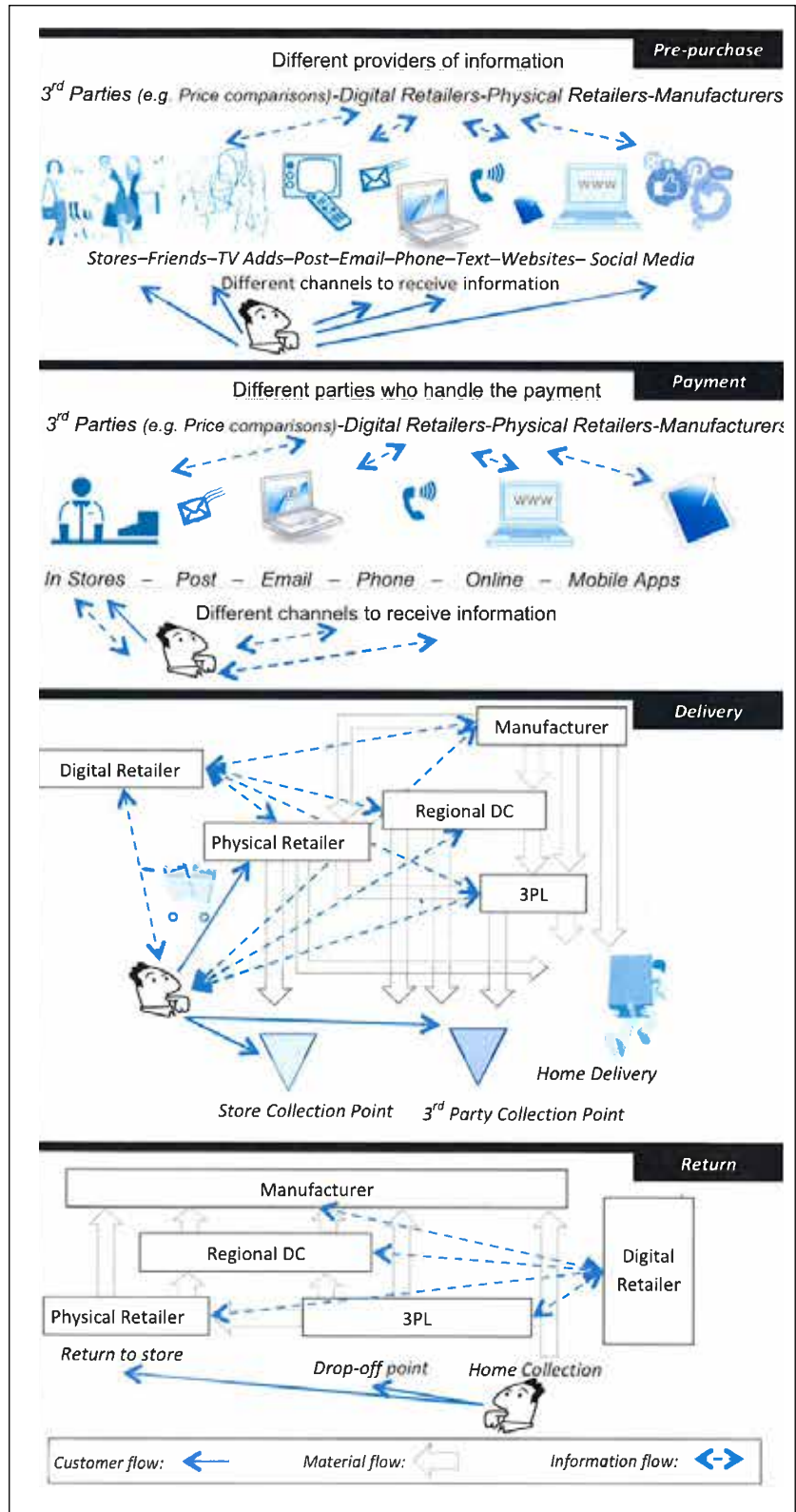
The role of integration

Integration is a core attribute of omnichannel systems, which ensures a single view of products in terms of technical, stock, location, despatch and delivery information across the supply chains. It makes the flow of material within and between channels possible, improves resource utilisation, and avoids conflicts between channels. As a result, integration improves the consumer experience of an omnichannel system by providing a higher variety of products and services, and makes the consumer more loyal to the company/brand.

A wide range of synergies are also achieved through integration across channels including: sharing market information and decisions, leveraging resources and physical assets, cross-channel promotions, cross channel consumer interaction, and a wider product and price comparisons.

Omnichannel integrations typically include integrated promotion, integrated transaction, integrated pricing, integrated fulfilment, integrated product information, integrated customer service, and integrated reverse logistics.

The omnichannel integration lets consumers to move forward and backward in their shopping experience without facing any confusion, losing control of their order, or finding any mismatch or inconsistency in the product, information or service they receive. Different types and agents can be linked with each other, and provide consumers with a unified service and experience. Therefore, the online, offline, and mobile channels should communicate and work together properly.

Providers of information and products, across the supply chain (i.e. channel agents) should also be linked with each other to make sure they are sending the same message and providing the same product and service to the consumer. This needs integration among those product/service providers or channel agents across the supply chain. The omnichannel integration ideally will lead to total visibility including: product visibility, demand visibility, order/payment visibility, stock visibility, shipment/delivery visibility, and supply visibility.

Information interchange and the role of data standards

The required visibility across an omnichannel system depends on transparency and proper interchange of data. Data standards are among the main mechanisms that facilitate the communications and data interchange between different elements and functions of the omnichannel system. Specialist data standards such as GS1 can assign unique numbers to the companies' products, so that they can be identified and shared throughout the supply chain more accurately and speedily.

GS1 has introduced four major groups of standards for data interchange: Barcodes, Global Data Synchronisation Network (GDSN), Electronic Product Code (EPC), eCom, and GS1 Digital.

Barcodes serve as product data in a scanner readable format. The product data scanned via barcode can be recorded, processed and shared, more quickly and accurately. Several types of barcodes have been developed and standardised for different applications. EPC allows users to encode a variety of data (e.g. global trade item numbers – GTIN) into Radio Frequency Identification (RFID) tags, make them readable and traceable by other supply chain parties.

Through the GDSN system, the latest product data of a supplier is made available to its buying business partners (i.e. typically retailers), using globally agreed standards that all parties can retrieve and understand. The product data shared by suppliers forms a data pool (i.e. an electronic catalogue of standardised product information) where the product's data can be shared and retrieved by approved suppliers and retailers globally.

eCom refers to a set of electronic data interchange (EDI) standards, which are employed for sending and receiving business messages such as orders, shipmen notices, invoices, and prove of delivery. Finally, GS1 Digital is a new standard to expand the standards in the digital world.

Data standards can be used to support integration and visibility requirements of an omni-channel system. In the pre-purchase stage, the key emphasis is on consumer awareness. Hence, full product data should be available to consumers. GDSN can support the integration and consistency of data across the supply chain – among those parties which provide the product data to consumer. In the same time, GS1 Digital, and Barcodes can integrate different channels of pre-purchase information.

In the payment stage, when the purchasing may occur via a multitude channels simultaneously while retailers facing thousands of interactions in real time. Correlating all the data from various channels require the assistant of data standardisation. In such a situation, GDSN, eCom and Barcodes support data sharing interchange and synchronisation among those parties (across the supply chain), which handle the payment. Likewise, GS1 Digital and Barcodes can support the integration of different channels of payment. In the delivery stage, different parties who handle the order fulfilment can communicate consistently, quickly, and efficiently using eCom, Barcodes, and EPC standards. The links among different delivery channels can be supported by Barcodes too. Almost similar standards can be used in the return stage.

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