Putting the customer first:
How researchers are hoping to optimise a new flexible retail model

The ‘omnichannel’ retail model is the brick-and-mortar store’s answer to online retailers. By making their products available across stores and online, they allow customers new levels of flexibility: ‘click and collect’ or ‘buy online, return in-store’. However, with these new options comes an operational nightmare. In 2016, University of Michigan Assistant Professors Joline Uichanco and Stefanus Jain were awarded a National Science Foundation grant to look into streamlining omnichannel retail logistics. So how do they do it?

Once upon a time, if you needed a new hat you would wait until you had time off work at the weekend and go into town with your pay packet. You would perhaps visit one or two hat shops and choose your favourite within your budget, maybe taking the advice of a shop assistant. You would take your new hat home with you the same day. Today if you need a new hat, you might first check online. You might find several that fit your needs and your budget at various different retailers. You might save some pictures and text them to your friends, and your mum, and then order two dissimilar ones, because the retailers offer free returns. They will be delivered directly to your front door.

Shoppers want flexibility, and while this suits the increasingly busy lives of the modern-day spender, it has introduced intense complexities to the logistics of selling. Huge retailers like Amazon have cornered the online market, making them the answer to online retailers’ operational nightmare. In the omnichannel model, there are no barriers across the channels; customers can order online and pick up in-store, or vice-versa.

The omnichannel retailer uses its legacy of a network of brick-and-mortar stores to its advantage.

The omnichannel shop can keep prices low by making the whole of its inventory (both in-store and online warehouse stock) available to a larger pool of customers. It maintains product variety by making it possible to ship products from other stores and warehouses to alternative locations. It is possible to ensure a competitive speed of delivery by making use of stock in stores and warehouses local to customers rather than relying on one or two national centres. Finally, returns can be made even easier for customers by offering them ‘buy online return in-store’ and ‘buy in-store return online’ options.

Ideal as this shopper’s paradise seems, the logistics of managing such a system efficiently and cost-effectively are in practice challenging. The omnichannel retailers are not without expert guidance though. At the Ross School of Business, University of Michigan, Assistant Professors of Technology and Operations Joline Uichanco and Stefanus Jain have been looking to optimise the model, and find solutions to the many-faceted complications of running a business that can compete in a modern shopping economy.

A MODERN PROBLEM

Despite the increasing practical importance of this area of research, there is a paucity of literature on the issues facing omnichannel retail businesses. There are a number of potential operational obstacles that Uichanco and Jain and associated colleagues have looked to address in recent years, and in 2016, the critical nature of such investigation was recognised by a National Science Foundation grant. The pair aim to develop algorithms and identify policies that lead to optimal decision-making within the omnichannel retail sector.

One problem that faces both online-only and omnichannel retailers is that of fulfilment and split delivery. Shipping products to customers from the nearest warehouse is not always the best solution; future demand forecast must also be taken into account. In addition, if the customer orders more than one product should they be delivered from different warehouses or the same one? In the immediate present, it may be cheaper to group and deliver products from the same place but depending on predictions of upcoming orders, that may prevent cheaper shipping options in the future.

Another consideration for omnichannel retailers is the necessity to combine both logistics and marketing decisions. For example, whilst you may have considered the cost, time and distance factors affecting a pricing and fulfilment decision, you may also need to try and avoid store markups. With products that are of limited stock or shelf-life, it may be more advantageous to ship them from a store with more of that product remaining (even if this might incur higher shipping costs), therefore avoiding large amounts of salvage stock in one place later.

In addition, whilst in brick-and-mortar stores, you know your local customer well, as an online retailer your customer...
A MODERN SOLUTION?

Pick-up period, labour has been wasted or in the storeroom, which in brick-and-mortar stores are to survive at all in the world led to online giants, retailers certainly need to think remained with the omnichannel retail model. How do you think retailers and researchers like yourself will be able to resolve them?

One big challenge is due to the high likelihood of customer return, especially for experiential products such as fashion, which makes operations more challenging. Retailers can partially resolve this issue by thinking about smart ways to encourage customers to keep their products. In terms of research, there is a need for a model for inventory and fulfilment decisions that explicitly takes customer return behaviour into account. This can be done by first developing more accurate predictive models of customer behaviour, which can later be used for building better decision tools.

References


Personal Response

From the customer’s point of view, what problems do you think remain with the omnichannel retail model? How do you think retailers and researchers like yourself will be able to resolve them?

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