

7.14: Putting It Together- Information Systems in Retail and CRM Software

The economic environment for retailers today is obviously extremely challenging and retailers continue to search for the right business strategy to keep their companies relevant. As they refine their business model to find the best multi-channel mix of online, brick and mortar, and all of the hybrids, they continue to invest heavily in technology to make their operations more efficient and bring their customers closer. Walmart alone spent \$10.5B in technology in 2015.

In this module, we have discussed some of the key technologies used to run retail businesses. Let's summarize and think ahead.

Image Barcodes

UPC, RFID, and QR codes provide a means of inventory identification. Originally used for POS systems, this imaging technology is extremely useful for helping retailers and their vendors in managing goods through a supply chain.

POS

Point-of-sale technology is one of the first operations in retailing to be automated. We have come a long way from hand-written sales drafts to the use of smart phones to support a purchase transaction. With the advent of biometric technologies, soon a purchase could be executed with the blink of an eye.

SCM

Supply chain management is a crucial technology for large retailers in order to sustain their revenue flow. Without a predictable source of supply, store shelves, and online warehouse would be empty of needed products and potential sales would not be realized. SCM is at the heart of retailer/vendor cooperation and we have discussed the benefits for both, as well as the consumer, for working together.

Data Warehouse/Data Mining

DW technology gave birth to what we now call big data. Once we had the ability to gather and pool information from disparate sources and locations, data mining techniques revealed patterns and trends that could help retailers better understand how to better run their business.

CRM

Customer relationship management is a crucial technology for retailers, helping them better understand their customers. As computational processing has improved, so has the ability of CRM to drill down and manage all interactions between the individual customer and the business. As we discussed, the power of this technology can lead to privacy issues both through data breaches and data "sharing" between corporations.

The Future

How will retailers harness newer and even future technology to survive? What are the most likely technologies that will be adopted going forward? We have already seen examples of several new innovations being used commercially.

Robotics is already a mainstay manufacturing and distribution warehouses. Hudson Bay experimented with and is now expanding a fulfillment center using robotic technology. Amazon utilizes over 45,000 robots in its distribution centers. We can certainly expect to see robotic automation being utilized in brick and mortar operations in check-out counters.

Another new technology in retail operations is drone delivery. Amazon has been experimenting with this delivery technology for years. The Mohawk Valley in upstate New York has been declared a drone-friendly zone for testing drone capability in a variety of end-uses. A related technology is autonomous vehicles (driverless cars and trucks) that could be used to deliver product to retail consumers.

Virtual/digital assistants is another new technology that has/will certainly impact the retail industry. Alexa and Siri can already do most of your shopping for you. Major players like Samsung are equipping their appliances with virtual assistant technology so a refrigerator will be able to keep itself stocked with food for the family.

Finally, augmented reality (AR) has a variety of applications in the retail industry. Gap customers can try on clothes in a virtual dressing room. Furniture shoppers can see how Ikea furniture will fit into a virtual living space with 98% accuracy. Home paint

projects will be easier- using your phone to see how the color works virtually with your furniture rather than holding up swatches.

All in all, we can see that the retail industry has and will continue to be reliant on the benefits that technology can provide.

[<https://www.retaildive.com/news/5-te...-2017/433954/>]

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