

First draft SAPICS thought-leadership article based on Sean Culey white paper
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Technology Is Disrupting And Transforming The Supply Chain

New waves of technology are disrupting and transforming the very nature of the supply chain, according to world leading futurist, author and globally recognised business transformation expert Sean Culey. He shared his insights at the recent SAPICS Conference in Cape Town.

Hosted annually by SAPICS, The Professional Body for Supply Chain Management, the SAPICS Conference is Africa's leading event for supply chain professionals. This year, it attracted close to 800 delegates representing 28 countries.

Culey's latest book, "Transition Point: From Steam to the Singularity", is the result of five years of research. "One of the questions I examine in the book is what drives technological change, and why advancement in these areas comes in waves rather than as a liner progression. These waves are driven by the creation of a cluster of new technologies that spawn new energy, transportation and communication mechanisms, which in turn attract investors and their money, and this investment creates whole new industries and large numbers of new businesses."

Culey notes that the adoption of new technologies is slow at first, as many innovations fall into what Gartner calls the "trough of disillusionment", failing to cross the "chasm" from innovators and into the mass market. "Once the chasm is crossed, the innovations go from deceptive to disruptive, experiencing an exponential level of diffusion and progress, driven by the competitive need to keep up or be left behind. We have experienced five waves since the Industrial Revolution and are now in the early 'spring' period of the sixth.

"When I started presenting on this topic back in 2012 and 2013, I showed exciting videos of radical new sixth wave inventions such as warehouse robotics, autonomous vehicles, drones, collaborative robots and the like, only to see little evidence of their materialisation outside of these experimental organisations. While

the videos went viral, the innovations did not, constrained either by technological issues, a lack of supportive infrastructure, or legislation. However, in April 2019, real evidence appeared that indicated that we had reached a tipping point, at least in the retail industry, as a series of demand capture and fulfilment innovations started to cross the chasm.

Making Buying Easy

“Convenience is a major driver for consumers, and the most inconvenient aspect of the shopping experience is usually the bit at the end – unpacking the basket, repacking and paying. Sainsbury’s, a UK based grocery chain, opened the first checkout free store in Holborn Circus, London, which allows people to scan the items they buy using an app on their phone, and then payment is made electronically. The store is Sainsbury’s response to Amazon and the introduction of their Go stores, which use a variety of radical new technologies such as vision tracking, sensing technology, and machine learning, and which have been successfully trialled in the US and are currently being rolled out to 3 000 locations over the coming few years.

“Also in April, Walmart announced that it had partnered with Google to enable people to “order by voice”, where the consumer can simply say out loud the things they need, and Google Assistant will identify your favourite brands, check prices, look for deals and place the order.

Automating the Last Mile

“Not only has ordering goods increasingly becoming easier and more convenient due to these recent announcements, but a series of delivery focused milestones were also achieved. The fulfilment of demand has changed rapidly since the rise of e-commerce and omni-channel ordering, and no longer does the consumer have to spend their weekends travelling to the out-of-town hypermarket, spending hours walking the aisles doing the weekly shop. Now the consumer not the retailer decides when and where goods will be collected, creating an exponential level of additional costs and additional complexity for supply chain teams. To try and provide solutions

that increase the speed and flexibility while reducing the amount of manpower (and their significant labour costs), radical new automated delivery mechanisms have been developed and they are now breaking cover.

“Earlier in the year, Amazon unveiled a series of road delivery robots called ‘Amazon Scout’ which were rolled out for a trial in Snohomish County, Washington.”

Culey says that another last mile delivery innovation – drone deliveries – created excitement (and a little derision) when Jeff Bezos first went on the 60 Minutes show in late 2013 and announced that Amazon planned to deliver goods to customers by drone in the future. “Since then, people realised that this was more than a mere PR stunt, and a race to operationalise these in order to drastically cut the cost of last mile deliveries ensued. Drone deliveries were successfully tested in the UK by Amazon and in Australia by Google, but it was the Chinese retailer JD.com who was the first to use them for commercial deliveries, mostly to rural areas.

“In April, a trio of milestones were announced. Firstly, UPS and drone technology company Matternet initiated a medical-sample delivery system for hospitals in Raleigh, North Carolina. Then, a California-based company called Zipline launched the world’s largest vaccine drone delivery network in Ghana, that is expected to be able to conduct up to 600 daily, on-demand medical drone flights to 2 000 health care facilities across the country. Finally, and most importantly for the retail industry, in late April, the Google drone spinoff, Wing, achieved the Federal Aviation Administration’s first certification for drone deliveries.”

The Architect of Disruption

Culey notes that the driver behind nearly all of these retail innovations – at least in the West - is the “disruptive behemoth that is Amazon”. These developments are either being driven by Amazon, or as a competitive response to Amazon, he states.

The Tip of the Iceberg

“For those not in the retail trade, do not be complacent,” Culey cautions. “One thing that has been true to date is that these new innovations do not respect industry boundaries. Once the customer gets a taste of ordering by voice, stores without checkouts and automated, same day delivery, they will expect a similar level of service in their industry,” he stresses.

Culey’s powerful presentation at the 2019 SAPICS Conference netted him the award for “Most Innovative Speaker”.

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