McKinsey & Company

AI-driven smart retail solutions: An interview with Cloudpick CEO Jeff Feng

by Alex Sawaya

Amid a difficult economic environment, retail executives are pondering how best to keep a lid on costs while serving customers returning to physical stores post-pandemic.

In Asia, technology-driven online retailers are investing in digital solutions that seamlessly integrate their online and offline offerings.

Uncertainty over return on investment is a key limiting factor, however. System complexity, consumer reluctance, and digital security concerns have also proved stumbling blocks to greater uptake of instore digital capabilities.

Smart retail and payments solutions provider Cloudpick addresses these issues by leveraging computer vision to analyze shopper behavior, improve store layouts, optimize marketing, and free-up staff to focus on customer service.

Cloudpick's technology is cost competitive and can be deployed in less than a week, which along with impressive numbers on checkout speed, customer request handling, and sales increases, have convinced leading global investors to put significant financing behind the Singapore-based company.

Alex Sawaya, a senior partner in McKinsey's Hong Kong office and leader of QuantumBlack in Asia, recently sat down with Cloudpick CEO Jeff Feng to discuss the outlook for the deployment of artificial intelligence (AI) solutions in retail stores in Asia.

In their conversation, Feng explores how Cloudpick's solutions can boost store earnings and cut costs, while enhancing the instore experience for customers and employees.

McKinsey: What are the benefits of digital technologies for retailers and consumers?

Jeff Feng: Many retail jobs are very time consuming and repetitive, and can definitely be replaced by computer vision and AI algorithms. For example, technology can replace checkout cashiers, who scan products and credit cards and check information for consumers. Moreover, computer vision can also understand shopping behavior—how consumers interact with products in the store—allowing us to analyze habits and respond with improved store layouts and promotions.

McKinsey: What about the impact on revenue and costs?

Feng: From the revenue generation side, retailers have more ways to sell. In the past, without digital technologies, they could not even sell online. Now, in addition to improving the performance of online platforms, AI helps optimize shelving arrangement, product assortment, and other instore operations, which also helps raise revenue.

Meanwhile, technology can reduce costs by improving marketing. For example, data can predict which products will likely sell best in a particular kind of weather, and then technology can design appropriate instore advertising. Such intelligent decision-making saves a lot of time and human resources. This also allows you to vary your promotions more regularly, and precisely target different customer segments.

McKinsey: What about from the customer's perspective?

Feng: Previously, purchasing a good product at a competitive price would have been sufficient to satisfy most customers, but AI allows them to demand higher quality services and new experiences. Without the technology, operations staff had too many things to do to offer personalized

Jeff Feng

Career
Founded Cloudpick, a smart retail solutions provider that uses computer vision to improve the efficiency of instore operations, in 2017.

Attracted investment from leading international investors, including Intel Capital, Cathay Innovation, Seiko Epson Corp., Global Brain, and UB Ventures.

Expanded Cloudpick's footprint to more than 100 retailers across more than 800 stores in 20 countries.

Education
Received his PhD in the areas of computer vision, pattern recognition, machine learning, and human-computer interaction.

service. Now, digital signage, audio and video systems allow retailers to create personalized content—you can even create instore avatars on screens to act as virtual customer guides.

McKinsey: What is the biggest hurdle that you face when it comes to customer adoption?

Feng: First of all, you need to educate the market and let potential clients know the technology exists. Then you have to ensure the technology generates real value for your clients. That means working closely together—diving into store operations to observe how the systems are functioning and what can be improved. Finally, rollouts are a challenge— considering the financials and helping customers

to spread their wings and get the economics right. Retailers want to know the return on investment, so we show them calculations comparing the cost of all the people you usually need in a 10,000 square-foot store, versus the two or three people who can do it with our technology, and how that allows us to charge the partner a price equivalent to about half of the labor saved.

McKinsey: How do you address potential concerns about data and privacy?

Feng: We make sure customers and retailers know our technology does not use any personal information. Granted, biometric information such as facial scans and fingerprints are very personal,

but we do not capture that information. We use 3D-based vision systems that are similar to self-driving vehicles. We don't use color, pictorial or texture data or fish for information to identify or track people. We solely use 3D geometric information to track instore movements and understand shopping behaviors—to identify the products they interact with.

Secondly, we have algorithms and systems to protect the physical data of credit cards and mobile wallets. We are compliant with Payment Card Industry (PCI) standards, and have also acquired British Standards Institution (BSI) and International Organization for Standardization (ISO) certifications.

McKinsey: Is there a limit on how many stores might be using Cloudpick technology in the future?

Feng: That really depends on the distribution of human labor and how many people still want to work in retail. My prediction is we will eventually have at least 50,000 stores.

Alex Sawaya is a senior partner in McKinsey & Company's Hong Kong office, and leads QuantumBlack Asia.