

The role of information and communications technology (ICT) in the retail sector has grown significantly over the past few years. Enterprises are increasingly deploying various technology-driven solutions to streamline operations, improve business efficiency and provide better customer experience. As customer comfort takes centre stage, trends like multichannel retail, hyper-personalisation and automation are redefining the business requirements of retail enterprises. Technological advancements in the sector have provided various benefits; going forward, the adoption of new technologies like cloud, artificial intelligence (AI), augmented and virtual reality (AR/VR) and internet of things (IoT) across Indian retail companies is set to reach higher levels. **Manish Saini, COO, e-commerce, Ferns N Petals**, talks about the key ICT trends shaping the retail sector, the challenges involved and the way forward...

What are the key emerging technology trends shaping the retail industry?

- **Mobile:** More than 60 per cent of our consumers are on mobiles during the discovery phase. While desktop still beats mobile devices as the primary medium for making e-commerce purchases, it would soon be replaced by mobile phones. Global e-commerce trends indicate that mobile devices will be central to the discovery, research and purchase of goods.

- **Product visualisation, AR and VR:** Product visuals have evolved from small, hard-to-view images to multiple images in different views along with the zooming feature. In addition, customers can now upload images. Recent technological advances in 3D, AR and VR are poised to further change the way products are displayed. AR is a technology that superimposes digital images on a user's view of the real world through a mobile device. It is changing the way consumers visualise the products. With VR, users "enter" an immersive virtual world using a VR headset and compatible 360 video. It allows clients to virtually experience a product before they make a purchase.

What are the key ICT and telecom solutions being used by your company?

We use ICT for three different purposes:

- **Customer interaction:** We ensure that customers enjoy a seamless experience with our

brand. For this, we have invested in cloud infrastructure, IT services, security systems, IP telephony, billing and recording systems. Big data analytics has not only enabled us to improve customer satisfaction by personalising offerings, but has also helped in identifying and eliminating unnecessary costs.

- **Scheduling for manpower and jobs:** We use HR and payroll software to automate HR processes, improve employee management and optimise recruitment and reduce employee turnover.
- **Communication between management and staff:** Telecommunication, videoconferencing and email software has enabled us to maintain an open line of communication. This has improved employee productivity and efficiency.

All these tools have enabled us to raise our top line while simultaneously reducing the bottom line.

What are some of the challenges faced in managing ICT infrastructure?

- **Lack of efficient data storage architecture:** With the greater adoption of cloud computing, the cost of data storage has reduced. However, the existing cloud architecture is inadequate to accommodate all the different applications. The IT community needs solutions that can address these inadequacies.
- **Ways to improve data analytics:** Currently, there is no system in place to separate quality data from the enormous data sets available. It is imperative for a business to identify patterns in data and analyse it for making business decisions.
- **Networks and connectivity:** A good and reliable network ensures that an organisation functions smoothly. Software-based methods and network architecture designs are essential for data optimisation.

What are your views on the adoption of new technologies like cloud, AI, AR/VR and IoT across Indian retail companies? What are your future plans with regard to these?

The future of retail will be driven by data, analytics, AI and IoT. AI has the potential to significantly improve customer experience through machine learning. In the future, more than 80 per cent of human interactions in retail will be handled by AI.

The key areas for big data, AI, cloud and IoT application would be:

- Personalisation and product recommendations
- Inventory planning and forecasting
- Enhanced user interface
- Optimising production and maintenance
- Research and development
- Tailored marketing
- Improved efficiency in operations

Amazon Go and Walmart's self-scanning robots are live examples of these.

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