The retail industry is going through a transformation from analog brick-and-mortar venues to digitally enabled, immersive customer experiences. As part of this change, retailers are looking to differentiate themselves from the competition and from online shopping. That means retailers will need applications that facilitate greater in-store customer responsiveness and enhanced engagement.

Online competition, cost-reduction pressure, and the need for high-quality customer service are driving retailers to offer localization, immersive applications, and cached content. Intel Smart Edge is delivering Multi-access Edge Computing (MEC) solutions that empower mobile network operators (MNOs) to serve these retailers.

One of the challenges is that consumers are increasingly utilizing multiple information sources and sales channels. According to statistics gathered by RetailNext, 75 percent of customers are more likely to visit a store if they find its online information useful, while 84 percent believe that retailers should do more to integrate their offline and online channels. With two-thirds of in-store shoppers checking prices online before making a purchase, it is little surprise that the mobile sales channel has become top of mind for retailers looking to effectively reach customers.¹

One option for better connecting with consumers is to adopt an omnichannel approach that gives them a seamless shopping experience, whether online (and from any device) or physically in the store. By synchronizing each sales channel, retailers can strengthen their brands across multiple customer touch points and drive more sales.

The digital shopping experience increasingly leverages an individual's digital persona. The Intel Smart Edge platform is a new capability that extends the experience for the user by leveraging the persona to inform store merchandise displays, sales processes, advertising, and efficient and security-enabled points of sale. Intel Smart Edge is perfectly architected to align the digital experience with the tactile benefit of physical interaction with merchandise.

Intel Smart Edge provides retailers with the speed and cost benefits of virtualization at the edge as well as scalability, efficient use of the network, and the ability to offer new tools for in-store systems and rich new experiences for the end customer. Retailers may also be able to capitalize on rich local content, fast networks, robust security, and software flexibility, promoting customer loyalty and increasing sales.
Simplified Deployment and Management of In-Store Systems

In-store systems play a critical role in enabling retailers to better compete, improve the customer buying process, and nurture consumers toward buying decisions.

System applications could include:
- Mobile point-of-sale and customer relationship management
- Virtual reality (VR) / augmented reality (AR) immersive product experience systems
- Digital media
- Physical / digital security systems
- Inventory support systems
- Push-to-talk support store personnel
- Improved Wi-Fi performance
- Localized brand content

Intel Smart Edge systems deliver these applications in a way that meets the needs of key stakeholders within a retailer:

**CIOs need** an agile technical platform to make in-store systems and applications more effective and that can be managed without adding staff.

**CFOs need** a total-cost-of ownership model that improves margins.

**CMOs need** a solution that improves in-store responsiveness, traceability, and the customer experience to differentiate the company from local competition and online shopping.

From a network perspective, Intel Smart Edge reduces network latency from web server access by delivering this information from the local server using content distribution network (CDN) technology. The edge can provide latency in milliseconds, making it possible for an omnichannel environment to directly improve user satisfaction by providing the right information at the right time to drive sales.

Other Intel Smart Edge solution advantages include:
- Higher throughput and capacity
- Decreased WAN and backhaul requirements and costs
- Lower edge TCO
- Improved security and privacy
- Greater hardware adaptability and software-defined solutions
How One Retailer Leveraged MEC

Retailers have started to embrace this cost-effective application delivery model. In one example, a major US electronics retailer undertook an Intel Smart Edge pilot in its stores and realized significant benefits. The results are extrapolated and summarized below. The results take the reduced capital and maintenance costs of outsourcing existing application servers and Wi-Fi networks and compare them to the numbers achieved by an MNO providing the services using the Intel Smart Edge platform. In some cases, the savings are based on avoiding an upgrade to higher bandwidth services because of the Intel Smart Edge platform performance. Key findings include:

- The retailer experienced an almost 56 percent cost savings (capital and maintenance) over three years in stores with bandwidth needs less than 100 Mbps.²
- Stores that did upgrade to a 1 Gbps connection saw a 54 percent cost savings over three years due to reduced capital and maintenance expenses.²
- Local caching of frequently used content reduced peak network traffic by a minimum of 59 percent compared to Wi-Fi-based store deployments. Download speeds were improved by 50 to 80 percent; this increase in speed directly correlated to higher client satisfaction with the in-store experience.

The Right Solution at the Right Time

The MEC solution from Intel Smart Edge using Intel® technologies distinguishes retailers in the marketplace as they use Intel Smart Edge based services to improve customer engagement. Intel Smart Edge enables retailers to deliver new services and a great customer experience through location-based personalized ads, offers, signage, and next-generation immersive technology. The benefits are many and include helping MNOs cut costs, sharpen agility, and improve security, all while unlocking new revenue opportunities.

Intel Smart Edge at a Glance

Intel Smart Edge is an open, purpose-built, virtualized MEC platform that empowers enterprises to provide differentiated services, such as optimized, high-priority content or applications with premium service levels. It offers localized deployments of customer-facing applications that are fast and agile. Intel Smart Edge enables retailers to offer next-generation, immersive, context-aware applications, such as location-based services (e.g., personalized ads, offers, and signage) and enhanced experiences based on VR and AR.

With location-based customer personalization (i.e., persona enablement), which recognizes loyal customers when they arrive, retailers can use Intel Smart Edge to serve offers directly to their phone. In addition, cached content customizes digital video signage, allowing customers to discover new perspectives about the store and its offerings. This mobile sales assistance capability empowers sales associates by providing them with deep product information and access to accurate “endless aisle” inventory.

Intel Smart Edge offers analytics as well, facilitating precise in-store operations and logistics and speeding transactions with its point-of-sale system. By enabling low latency and high bandwidth, Intel Smart Edge also supports new, engaging experiences, such as VR and AR product demonstrations and ultrahigh definition (4K) product video content. In addition, it helps deliver improved privacy and security as well as lower TCO.
Conclusion

In the retail segment, Intel Smart Edge enables retailers to offer next-generation, immersive, context-aware applications, such as presence sensitive use cases (e.g., personalized ads, offers, and signage) and enhanced experiences based on Virtual Reality and Augmented Reality. Intel Smart Edge’s goal is to enhance the communications world with the next generation of computation at the edge.

Intel Smart Edge is an innovative software offering behind market leading application and enterprise MEC platforms.

- The controller and edge node are enabled in an all-in-one hardware and software solution that decentralize the network and the cloud, enabling computation at the on-premise edge of the network.
- Built with security as the primary underpinning while emphasizing an effortless experience, the platform empowers enterprises to simplify implementation of new services, such as optimized, high priority content or applications.
- The platform enables software defined functions and network context to localized edge deployments of applications, excelling in enterprise environments that heavily leverage and depend upon mobile devices.

Learn More

To find out more about the Intel Smart Edge solution, please contact us at www.intel.com/smartedge.