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Smart Shelves for Retail: Redefine your In- Store Experience

Happiest People Happiest Customers

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Introduction

Digital Transformation is riding the next wave of innovation in the retail industry. E- retailers are enticing the shoppers with 'anywhere any time' shopping, faster delivery, personalized offers, easy returns etc. and it is a growing threat to the brick and mortar stores unless they adapt to the technology musings of the digital world. Apart from the technological advancements, the shoppers' expectations are also evolving at a blinding pace, when the demand for more efficient, personalized and omni channel retail shopping experiences are ever increasing. To keep in pace with the technology advancements and increasing competition from the online space, retailers are now rethinking their in- store strategies. Since the visual and sensory experience that the shoppers will get through the physical stores cannot be replicated in e-commerce space with even the most sophisticated technology, retailers are exploring ways to optimize the in-store experience by enabling innovative technologies like Smart Shelves in retail .

The 'Out of Stock' Challenge in Physical Stores

Many of us have experienced the situations like: we have entered into a physical store looking for our favorite brand running shoes. After the sales person guiding us to the specific rack for our desired brand, we will find out that the shoes with the required size or the color we want are out of stock. In this case, the in- store shopping experience leads us to dissatisfaction, which can possibly impact our future visits/ purchasing decisions with the same brick and mortar store. A new research report from IHL Group, commissioned by Order Dynamics, finds that the worldwide annual losses due to out-of-stocks in the retail industry are a whopping $634.1 billion. Dissatisfaction of the customers due to out of stock items in retail physical stores is one of the biggest current challenges the retail industry is currently facing. Failures in internal processes, resource constraints, data disconnects or poor data sync contribute to some of the reasons behind this in-store experience failures. How to address such 'out of stock' challenge in physical retail stores?

'Smart Shelves' Technology for Retail Physical Stores

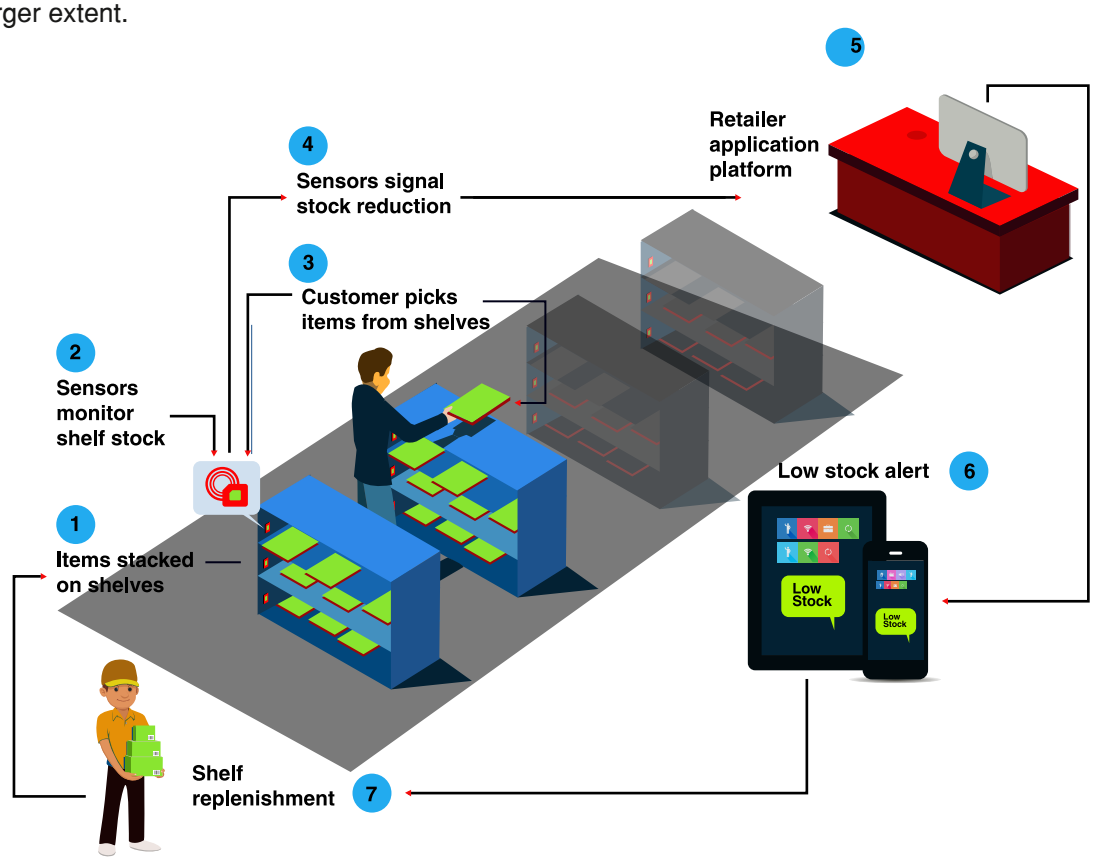
Implementing Smart Shelves, the electronically connected shelves which can automatically keep a track of the inventory in a retail establishment is one of the most feasible solutions to address this retail in store challenge. The Smart Shelves technology can be hugely beneficial both for the customers' shopping experience and the retailers' selling experience. The smart shelf concept will enable the inventory and store executives to:

- Refill stocks from stock room as they get depleted from the store shelf
- Intimate the buying group about the demand and Out of stock situation
- Inform warehouse / Direct shipment vendor for immediate replenishment

Smart Shelves technology enables the business owners to take more informed decisions, by keeping a real time tracking on what products are being taken from the store shelves and what is remaining. The real time analysis of data enables retailers to stock on more fast moving products and reduce the number of slow moving items.

How Smart Shelves in Physical Stores Work?

Smart Shelves are wireless inventory control systems that have been fitted with weight sensors. The weight sensors can be built-in the shelf itself or be installed under normal shelves. These weight sensors consistently notify the back-end system about the existing quantity of items on the shelves. These wireless devices use RFID tags and readers to scan the products in the display and stock shelves and alert store associates when product levels are running low or when a theft is detected. It will also trigger the back-end system about the items that do not belong to certain shelves as "misplaced items". The Smart Shelves provide retailers with various ways of improving their customer service, increasing sales and reducing cart abandonment to a larger extent.



Features of Smart Shelves System

Inventory Automation

Effective inventory management is critical in managing costs, measuring shrinkage and improving the customer shopping experience in retail. With Smart Shelves technology, retailers can auto track the stocked goods and make sure there is surplus inventory to avoid being “out of stock”.

Real time Inventory Management

Real time inventory management enables retailers to save time, make informed decisions and optimize in-store sales. Smart Shelves enable real time and accurate management of inventory data to empower retailers to optimize the in store sales with the timely filling of stocks, review of items etc.

Remote Monitoring Provision

Remote monitoring provision enables retailers to remotely keep a track inside the store. The remote monitoring capabilities of Smart Shelves help in quickly identifying and fixing problems inside the store if any, before it impacts the customers. All hardware continuously run with automatic remote alerting and dispatching capability to insure non-stop operation.

Stock Availability Assessment

Availability of stocks when customers ask for it is critical for any retail stores. Smart Shelves technology enables automated tracking of stock availability and informs retail store managers if the items are running out of stock or misplaced.

Cross and up-selling options in the case of out of stock items

Cross and upselling normally happen when there is a shortage of products that customers are looking for. If the retailers are already aware of the out of stock items with smart shelves technology, they can offer customers better or complementary products compared to what they are currently interested in.

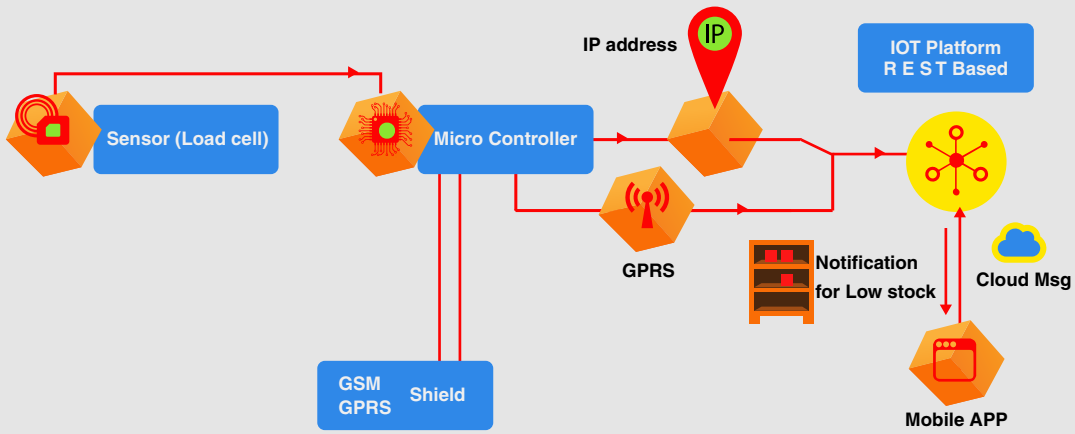
Offline Model Working

Stores need to be functioned in offline mode also at times. Even when there is a data disconnect, smart shelves will work in offline scenarios also.

Hardware Compatibility

The hardware associated with Smart Shelves are compatible with any mobile network provider / any radio frequency (RF) devices / language.

Smart Shelf Technology Architecture Work Flow



Technical Benefits

- Hardware is ready to integrate with microcontrollers
- Highly scalable and compatible as REST based architecture style is used
- Compatible with current UHF and HF Technology
- Easy to integrate with POS, store and warehouse ERP systems
- Ease of data addition to the platform

The Smart Shelf cabinets combine both UHF (ultra-high frequency) and HF (High frequency) tags in the shelf cabinets to allow the utmost flexibility in item level tracking. As new standards emerge, the system can be easily upgraded via software control. The cabinets contain over 16 custom antennas to insure the better accuracy of tag reading, regardless of orientation.

Business Benefits

- Reduction of ‘out-of-stock’ products
- Locate products easy and fast
- Better optimization of in-store operations
- Store space optimization
- Better utilization of in- store human resources
- Increase in sales
- Control and monitor the usage of high value items
- Better analysis of product popularity
- Increase operational efficiency and store effectiveness
- Enhanced customer experience

Conclusion

In this age of technology proliferation and increasing demands from the customers, delivering an enriching customer experience is equally an opportunity as well as a challenge. Smart Shelves empower a retailer to deliver more focused and optimized shopping experience for the in- store retail customers. Smart Shelves technology enables the store executives to have a seamless information exchange with various participants in the supply chain. Furthermore, it is capable of proactively avoiding “loss of sale” scenarios to a larger extent. Even in this era of digital revolution and internet, brick and mortar stores still continue to be relevant for retail shopping, because of the real time shopping experience it can provide is unmatchable with the e- commerce shopping experience. Unique and optimized in-store experiences enabled by technologies like Smart Shelves, where technology and operations go hand in hand, can lure even more customers back to the stores, thereby re-enforcing the significance of an Omni channel retail experience.

About the Author

Mahesh D

Mahesh D. works as a Business Analyst in the DTES Business Unit of Happiest Minds Technologies. With an overall experience of 7 plus years, he develops technical solutions to business problems and assists in advancement of the company's sales efforts. His work involves, defining, analyzing and documenting requirements and managing requirements at the project level to help fulfill business needs. As a Business Analyst, he also handles some of the key functions like Market research, Requirements analysis, Requirements management and communication, Assisting with the business case, Planning and monitoring etc.

Happiest Minds

Happiest Minds enables Digital Transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights through an integrated set of disruptive technologies: big data analyt-ics, internet of things, mobility, cloud, security, unified communications, etc. Happiest Minds offers domain centric solutions applying skills, IPs and functional expertise in IT Services, Product Engineering, Infrastructure Management and Security. These services have applicability across industry sectors such as retail, consumer packaged goods, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/transportation/hospitality.

Headquartered in Bangalore, India, Happiest Minds has operations in the US, UK, Singapore, Australia and has secured $ 52.5 million Series-A funding. Its investors are JPMorgan Private Equity Group, Intel Capital and Ashok Soota.

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