RFID White paper

How to prevent high shrinkage levels when introducing mobile checkouts in retail stores

Today's shoppers expect that the entire shopping experience is fun. They want to be inspired, find what they want and the size they need, get help when they need it and they do not want to wait for anything. A typical retail challenge is the payment step that can easily negatively influence the overall shopping experience, because customers' patience for the checkout line in retail stores is lessening.

As this is widely recognized, many retailers are optimizing their POS processes to prevent queues. Especially new payment apps that turn mobile devices into a mobile POS (mPOS) look like the holy grail, but how can retailers make sure that their shrinkage levels do not explode? In the past, retailers had to choose between convenience for their customer and security. However, RFID technology offers new possibilities to solve this conflict.

mPOS benefits

A significant number of retailers is already deploying or experimenting with mPOS solutions to provide more flexibility and a quicker processing to their customers. One of the most well-known examples are of course the Apple stores where customers no longer have to wait in line to pay for an item. They can directly be served by the employee equipped with an iPad and leave the store immediately after payment. While the convenience for the customer is the foremost reason retailers consider mPOS, there are some other interesting benefits if retailers equip store associates with mobile devices:

Mirror online experience: When people shop in brick & mortar stores, they expect that the checkout step is as fast and simple as when they shop online. In fact, shoppers no longer understand major inconsistencies between online and offline shopping.

Flexibility: The number of point-of-sale desks is no longer fixed, but can be demand-driven. This also enables the store staff to spend more time helping customers as they do not have to staff the point-of-sale desks anymore and retailers gain additional selling space.

Information: Shoppers are well-informed when they enter retail stores and even research competitive offers while they are shopping. By equipping store associates with mobile devices, retailers can make sure that the staff has all vital information from the retail management systems at their fingertips.

Cross- & omnichannel selling: By having all data at hand, staff members can easily advice on available matching products, check the stock levels in other stores and assist customers with placing an online order on the spot before they leave to enter the next store.

Convenience vs. security

While the many advantages of mPOS solutions make it tempting to do away with traditional checkouts, there are also challenges that need to be mastered. One of the key topics here is loss prevention, because there is a major conflict between mPOS solutions and any loss prevention measures a retailer has implemented to prevent shrinkage. A significant percentage of retailers use security tags to secure their products; either being hard tags attached to the product, or soft labels embedded in the products.

This is an important limiting factor in the deployment of mobile check-out solutions due to the required detaching or deactivation step. Understandably, retailers increasingly choose to put customer service and experience higher on the priority list than security. As a consequence, those adopting mPOS solutions often do away with security measures. Typically, they find this acceptable in a few flagship stores, but for a chain-wide roll-out, serious security concerns usually block the broader adoption of mobile check-out solutions. You might even say that there is a real dilemma where retailers need to ask themselves if they want to put the customer service first or their security measures.

RFID enables secured mobile checkouts

The Electronic Product Code (EPC) and RFID introduce a 3rd way of doing it that enables retailers to combine convenience and security by connecting mPOS solutions with RFID-based loss prevention systems. For this, the EPC - which identifies a unique product, a layer deeper than EAN or UPC barcodes, is used as common identifier. This EPC code provides both the EAN or UPC code for product identification, plus a unique serial number that defines the specific product. The required EPC code can easily be printed as a GS1 DataMatrix barcode (similar to a QR code) on an RFID label.

RFID label including DataMatrix and EAN + serial code

How does it work?

1. The retailer adds an RFID label on the products, equipped with GS1 DataMatrix barcodes.
2. A store employee scans the GS1 DataMatrix code with a mobile payment app on a mobile device.
3. The customer pays for the item and once the transaction is completed, the EPC code is sent to a database, marking the specific item as being sold.
4. When the customer leaves the store, a RFID reader reads the EPC code with radio frequency waves. The status of the EPC is retrieved from the database, and if the item was marked as sold, no alarm will sound. If the item was not sold, an alarm will sound.

The above described method is of course also fully compatible with existing point-of-sale systems (see flow chart on page 4). For returns, this works in a similar fashion by marking the item as not being sold, and thus alarming again at the exit.

RFID labels vs. RFID hard tags

As convenience is key in mPOS solutions, it makes sense to select RFID labels for this type of solution instead of RFID hard tags. If customers pay at a mPOS, it is complicated to build in a detaching step. The store staff cannot carry around a detaching magnet to remove hard tags, and it is quite cumbersome to assist customers on the spot, while having then to go to a fixed desk to remove the hard tags. With RFID labels, a mobile device or a 2D barcode scanner can be used to scan the GS1 DataMatrix.

Additional benefits of RFID-based EAS systems

The identification of products at the exit also makes it possible to indicate *which* product generated the alarm, and thus give better information to security guards and/or store employees. Security guards can do a more targeted investigation and missing items can be replenished faster. The insights enable retailers to make sure that the theft of an item is noted instantly and not weeks or months later during the next cycle count. As all transactions are based on item-level, it is also possible to store which unique item was bought by the customer. If an item is returned, no receipt is necessary anymore to proof that the specific item was bought in that store and return fraud is prevented.

In-store RFID processes

While the above might sound complicated to implement, this does not have to be the case. The main building blocks to cover the relevant in-store processes are:

1. **Goods receiving**
   New items are read by an RFID reader to mark the status as 'unsold' in the article database of the store. This can be done with a RFID handheld or fixed reader.
2. **Point-of-Sale**
   The RFID label is read with a 2D barcode scanner or mobile device. When the item is sold, the status is updated in the database to 'sold'.
3. **Store exit**
   When the item leaves the store, the RFID reader checks the database to find out whether the item is sold or not, and potentially generates an alarm.

Benefits

- Shortens or even eliminates checkout lines
- Maximizes sales floor space
- Increases customer focus of the store staff
- Supports mPOS and existing POS systems
- Reduces return fraud

Conclusion

By adopting mPOS solutions, retailers can keep store staff connected to the entire retail ecosystem to create a consistent brand image, pleasing shopping experiences and, ultimately, customer loyalty. However, mPOS traditionally poses a threat to a retailer's security measures. Here, RFID offers a straightforward, easy-to-implement solution to combine the best of both worlds.

By adding an RFID label with a GS1 Datamatrix to their products, retailers can track which items have been paid for and any item that has not been sold causes an alarm at the store exit. This enables retailers to have a scalable and customer-friendly mPOS solution that does not conflict with chain-wide loss prevention policies.

Flowchart: EPC status updates based on POS transactions