

Task 16: ePayments



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Executive Summary

In this report, we present a system for making the shopping experience at Wal-Mart seamless targeting the payment procedure. The report is divided into two parts which provide potential solutions for the customer facing side and the warehouse side. In the first part, we present a seamless payment system for the customers which almost replaces the present cashier system. In the second part, we present a scan-based trading system for interacting with the vendors seamlessly.

In order to excite younger customers, Wal-Mart needs to keep abreast with developing technology and leverage it to keep providing better shopping experiences. The system we propose further in the report will obsolete the need for cashiers and a checkout line implying, Wal-Mart customers can walk into a store, pick-up the items they want and walk out without needing to stop for paying.

In the first part, we propose to realize the system by employing sensor-based smart carts with a touch-screen. We have also designed a mobile application to support seamless payment which allows the user to securely store payment credentials. Once the user is connected to a smart cart via the app his/her seamless shopping experience begins. We extensively employed RFID technology by tagging each item with a RFID which is detected by the smart shopping cart. Also, customers can check their real-time purchase information on the touch screen. When the customer would like to check out, customers put the smart cart to a scan tunnel and they will be automatically charged by Wal-Mart. All customers are treated as equal as possible. If the customers don't like to use our mobile application, they can also swipe credit/debit card on the smart shopping cart or make payment by cash over the counter.

In the second part, we present a scan-based trading(SBT) system which improves the efficiency of running a retail business. In SBT, suppliers are not be paid when the goods are delivered to Wal-Mart. Instead, suppliers are paid when the goods are actually sold to customers. Also, suppliers are able to project demands based on the sales from each Walmart local store. It is very convenient for suppliers to decide how many products need to be produced and when to ship to goods and in what quantities. In addition to the Vendor Managed Inventory, we also simplify the payment process between Wal-Mart and different vendors. Having decided which Wal-Mart's bank to make the payment for vendors by designing the algorithm, we consider the different B2B payment methods including wire transfer, PayPal, and ACH credit transfer. Lastly, we explain how Walmart can communicate to their banks to actually make payment for suppliers.

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