SMACON CARDS

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ABSTRACT:

With a growing challenge to attract and retain customers and to preserve their interests and quality of shopping, in this paper, we bring about a solution that breaks the wall between retail and increased consumerism, paving way for a better shopping experience . Smacon Cards (Smart Consumer Cards) exploit the features of RFID (Radio Frequency Identification) technology to gain access to the details of the array of products and process them using an efficient database that contains both the product and consumer details. The RFID devices are now falling to the point where they can be used as a "throwaway" inventory or control device. How does it rule over barcodes? RFID significantly exterminates the difficulty of positioning the code (here the tag) precisely relative to the reader i.e no line of sight is required. The aim is to use an RFID reader to obtain the data (which includes price, manufactured date, date of expiry, quantity, product code, batch number etc…) from the unique RFID tags impregnated onto the products at the site of manufacture. The RFID tags consist of a small chip and an antenna while the reader has contains an RF module, which acts as both a transmitter and receiver of radio frequency signals. The transmitter consists of an oscillator, a modulator and an amplifier. The receiver has a demodulator and an amplifier. A microcontroller forms the control unit. The data is now ready to be sent to the network. Considering the demand for an alleviated shopping spree we propose a card that deducts the cost of purchase directly from the sufficiently recharged amount eliminating the need to wait in long tiring queues at the billing counter. This is facilitated by admitting the module to securely access the database maintained and authorized by the respective stores using Bluetooth or Zigbee technology. The shopping cart and in turn the reader is activated by inserting the card in its respective slot thus transmitting the shopper's details to the database. As the products are dropped in the cart, the reader identifies and processes the signals from the tag. The module is designed to cancel the transaction once the product is removed from the cart. An anti-theft mechanism is also incorporated that triggers an alarm if a product with an undetected tag is taken out of the store. Furthermore this idea, integrated with sensors, can gain ground in several smart applications in future like intelligent refrigerators, tracking product consumption levels, etc...