

Deployment of printed RFID in Egyptian apparel retailing

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Abstract:

The purpose of this research is to investigate the printed RFID technology and its deployment in the Egyptian fashion retailing, discover the benefits and point out the barriers preventing the proper deployment of this technology in the Egyptian apparel retailing market. RFID stands for "Radio-Frequency identification", which is an innovative automatic identification technology, it identifies and gathers data without human intervention, or data entry, RFID systems consist of tags, readers and software. RFID is referred throughout the world as a replacement for electronic article surveillance (EAS) tags and are used to prevent shoplifting. Apparel retailers claim that EAS systems are cheap, the system installation cost is average, and the cost for securing each piece is near zero, the reason for that is that each key is used for almost unlimited number of times. However, the results show that using conventional EAS is not effective in securing store's goods, and it causes damage for about 0.05% of garments. Recently many technologies have been studied to overcome the cost barriers; one among them was "Printed RFID" technology. An innovation in conductive ink allowed RFID tag providers to print RFID antenna on tagging substrates, instead of using a conventional solid-copper antenna, which was more expensive and less flexible. The study used semi-structured interviews for data collection from apparel retailers and print houses managers in the Egyptian market, in order to overcome the research problem, which is the lack of studies investigated the deployment of RFID technology in the apparel retailing, precisely within the Egyptian industry. In addition to highlighting the benefits of printed RFID deployment as an alternate to EAS and etched RFID tags, because of printed RFID stability, reliability, cost-effectiveness, flexibility, and its low environmental impact compared to etching method. In addition to investigating the barriers limiting the deployment of RFID tags despite mentioned advantages, which is according to interviews analysis, resulted in a full ignorance of RFID technology itself among apparel retailers and Egyptian print houses, which require more research on the RFID marketing, and reduction of printed RFID tags' cost and the chips as well.

Keywords:

- ***RFID,***
- ***Radio Frequency Identification Systems, Printed RFID,***
- ***Fast fashion,***
- ***Supply chain management,***
- ***Apparel retailing***

Paper received 23th September 2014, Accepted 12nd December 2014 Published 1st of January 2015
