SECURITY BASED ONLINE MAILBOX SERVICES

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Abstract: **This paper focus on the advancements in the Radio Frequency and GSM technologies that made a platform to come up with various innovations reducing human effort. Since online shopping has become a part and parcel of common man's life, this is the right time to make use of existing technologies to simplify the procedure. The basic idea is to introduce technology into our lives for monitoring issues which demand our personal presence. By doing so we aim at providing a reliable and user friendly solution to problems incurred during online shopping. A standalone box is designed which receives and stores the intended parcel so that the customer can retrieve it as and when required.**

Index Terms: **Smart courier, Security and Radio tags.**

I. Introduction:

Most of us have encountered the problems of postal and courier services like delay in delivery, wrong address or ambiguity in delivering the right package. These problems should be addressed with the help of technology so that the solution is simpler and reliable. A device should be designed which can recognize the designated courier as well as collect and store the same so that no ambiguity is occurred. The basic idea of the system is to employ an RFID (Radio Frequency Identification) tag to the courier and send the tag number and item details to the receivers mobile. The receiver of the courier will have information about the goods and the tag with the help of which he can make sure that the correct item has been ordered. To design the whole system, we require a microcontroller which acts as a medium of communication between the RF reader and the GSM (Global System for mobile communication) modem, also the microcontroller monitors the movement of the lid. The presence of the GSM modem is the major advantage of this system and it enables the device to communicate with the receiver no matter wherever he was present on the globe.

II. Present Scenario

With surge in online market, people find it easier to buy things online but the timely delivery of right package to the right person has become long-standing issue. One of very concerned issue is that unavailability of the customer when the delivery has arrived to customer's address which results in lot of phone calls and complicated delivery procedures. Adding to that insufficient information on the package results in wrong delivery, which is unacceptable. The customers demand less involvement of one's time and money which has put delivery companies into predicament situation.

Our idea is to develop a system which manages these issues and lessen the burden on both customer side and the delivery company side.

III. Literature survey:

Common problems faced by customers while shopping online that glorious invention which allows people to buy things from the comfort of their homes. No additional traveling to multiple stores to seek out the correct product; no additional having to influence over-enthusiastic sales persons; no additional standing in long lines at the checkout. The e-commerce boom has definitely modified the approach we have a tendency to buy the better.

Despite all the efforts of e-commerce corporations to alleviate them, there are a few problems that customers still have to face while shopping online. One of the major problem is delivery and logistics One difficulty that perpetually turns up whereas searching online is when the order are going to be delivered. While all e-commerce sites have order tracking systems for their customers, they are not always accurate. Delivery personnel often turn up at our homes when we're at work or out somewhere as there's no way to fix a particular time slot for the delivery to take place.

This same issue exists while returning products. Another problem is that the vast majority of the Indian population which lives in rural areas and Tier-III cities is unable to shop online because not all e-commerce sites provide delivery services to their locations.
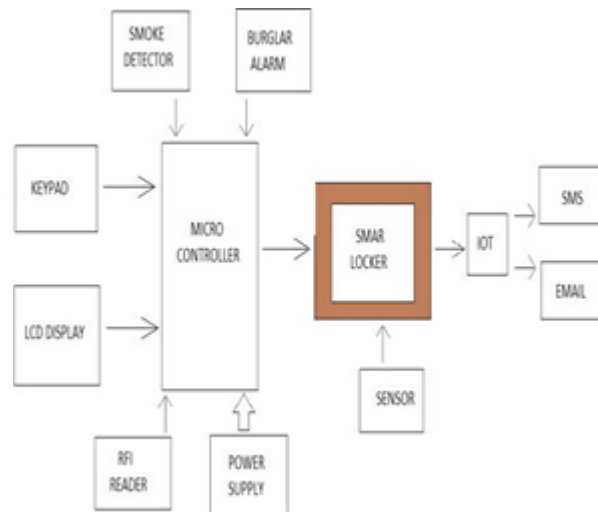
IV. Block Diagram:

Fig 1. Block diagram of Smart courier system

V. Methodology

As soon as the online order has been launched and therefore the delivery option is chosen, expeditions are taken over by SMART Courier representatives, and in an average of 24 hours they are deposited in the e-BOX chosen by customers.

The system automatically labels sender's package delivery by size (S, M, L) and when the AWB is drawn, a box is reserved in the SMART Courier system according to the size. As dispatches are available in vending machines, the recipients receive a SMS or an email with a secret collection code (PIN) and other information needed to pick up expeditions. All that customers have to do is to enter the keypad screen, SMS / email PIN plus name and signature; the operations they have to perform at terminals are intuitive and easy to go.

When leaving the SMAR Courier warehouse, the system warns the lockers, so from the submission of the shipment, the system already has all the data about the package to be delivered over, the identity of the courier and the password with which it opens and closes the eBox.

At the locker, the courier identifies with ID, password and then   logs in and selects the parcel delivery option.

After handing over the parcel, the compartment closes and the system automatically generates a unique collection code that is sent to the recipient via email and SMS.

The messenger cannot submit another referral in a very compartment till the primary deposit is utterly secure. If the client has incorrectly chosen the size of the package, the courier has the option to manually choose another compartment.

Based on the reception of email or SMS, the customer can pick up the shipment from the chosen wardrobe: type the unique authentication code received, sign electronically on the touch screen, and pick up the expedition. The locks are installed in controlled areas and are provided with alarm and anti-burglary systems.

V. Flow Diagram:
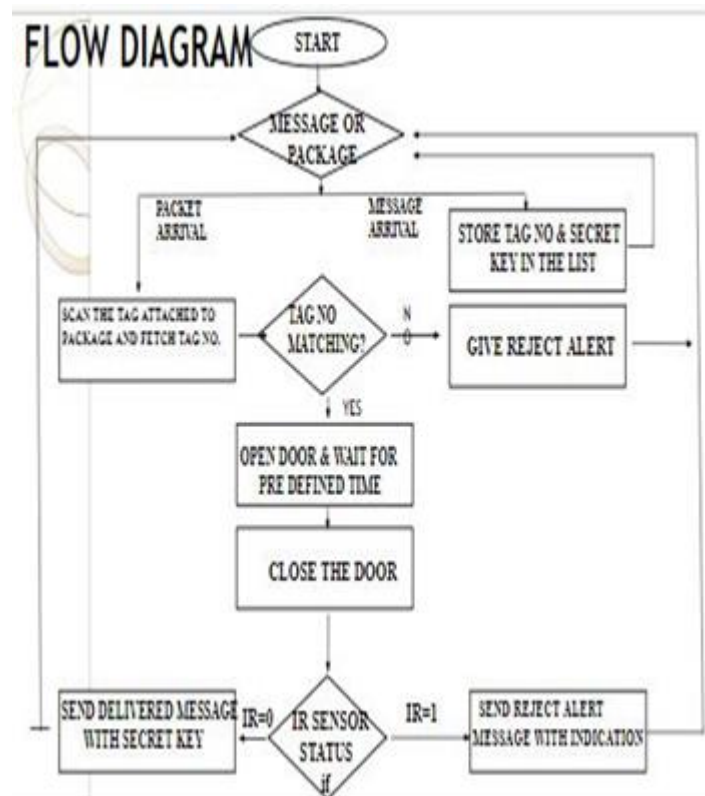
Fig 2. Flow diagram of Smart courier system

VI. Expected Output

•   Places the Order.

•   Sends Order id, Barcode and weight information.

•   Feeds knowledge (Order id, Barcode, weight) into the cloud.

•   Passes the data to Smart Box display.
•   Places the parcel inside Smart Box.

•   Verifies Barcode and Weight with the info retrieved from Cloud.

•   Sends a Parcel Received Message via cloud.

•   Sends a Delivered Message.
•   Sends a Confirmation Message.

•   Sends an Acknowledgement Message.

VII. Advantages

•   Advantages Installing this smart box in houses and customer premises would result in

•   Providing a contactless identification and tracking

•   Real-time delivery status
•   Less human errors

•   The tags contain all the information needed for sorting the mail and efficient delivery of the same

•   Real-time up-to-date database

- RFID technology and its reliance on radio waves doesn't need a line-of sight for identification or a straight-line alignment between the tags and readers

- Could use passive and very cheap tags since range is not a concern

- Reusability of the tags
- Enhanced security and safety

- Less money and time spent on tracking and handling of the packages.

VIII. Result

Fig 3. Prototype of Smart courier system

In this project, a new idea for automating parcel delivery collection has been proposed. This makes delivery of the parcel easier and safe even in the absence of the customer. Future work can be focussed on customizing the Smart courier box which improves Security and Scalability.

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