Beating Counterfeits

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***Abstract*—** There has been great increase in use of Branded products today. While purchasing a branded product we need assurance that the product is not fake. Sellers are often responsible to maintain the quality and genuineness of the product, until it is delivered to the customer. In this paper we are proposing concept of RFID which will identify the branded product. Whenever the customer purchases a branded product they can be identified by using RFID reader. RFID is a Radio Frequency Identification that uniquely identifies an object with its unique identification number. Using RFID reader the information of a product will get stored over the cloud. Using RFID reader supplier will able to trace the branded product whenever or wherever they are required.

***Keywords*—**RFID, Branded Products, Identification**,** Beating counterfeits**,** Customers, Suppliers.

I. INTRODUCTION

Now days there are fake branded products that are available to be sold to the people. This is very risky for customers or loss of customer to buy a product through online shopping or from the showrooms. There are many complications faced by suppliers and the customers who purchase the branded products. Sometimes they get a fake branded product also the suppliers get the fake branded products to supply. So the customers can't trust on the branded products and also the reputation of that company gets harmed. So there is decrease in the purchase of the branded products .Every product must have the identification before they get packed or dispatched to the outlets. To overcome this problem we have the solution i.e. **"Beating Counterfeits"** while packaging of the products in warehouse the RFID tag will be attached to the products and store that tag information about the product over the cloud using RFID reader. When the product is supplied to the supplier RFID will keep track of the products. After, getting this product's the supplier can authenticate that product by getting the tag information from cloud using reader. Whenever the customers buy the product they can authenticate that product and the quality of product using RFID reader. It will be very useful and secure for sellers and also for customers who buy the product. There will be no chances of buying and selling of fake products.

II. OBJECTIVE OF BEATING COUNTERFEITS

A. Objective of Beating Counterfeits

Main motive of using RFID is to avoid selling of fake products. We can authenticate our product by RFID tag which consists of product information

B. It maintains reputation of company as it avoids fake selling

From packaging to selling of products it will maintain the reputation of company and will maintain the authentication of products.

C. Customer can determine assurance of quality product

After buying a product customer can check the quality of product and also authenticate that product after receiving it.

III. TECHNOLOGIES USED FOR "BEATING COUNTERFEITS**"**

- *RFID (Radio Frequency identification Tag):*

  It is electronic tag consist of stored data that interact with RFID reader through radio waves.

It is made up of two parts:

a) Antenna

It gets radio frequency waves.

b) Integrated circuit

It is used for processing and storing data. Also modulating and demodulating the radio waves received/sent by antenna. It rest on the body or object to which the tag is attached. It operate in either ultrahigh frequency (UHF) or low frequency (LF) Tags vary in terms of the frequency on which operate.RFID tags are normally passive, as they do not require batteries and can work 24/7 without power. Such heavy duty tags are frequently attached to the trucks, cargo, containers and light cars for cargo tracking, vehicle, identification and supply container tracking among others

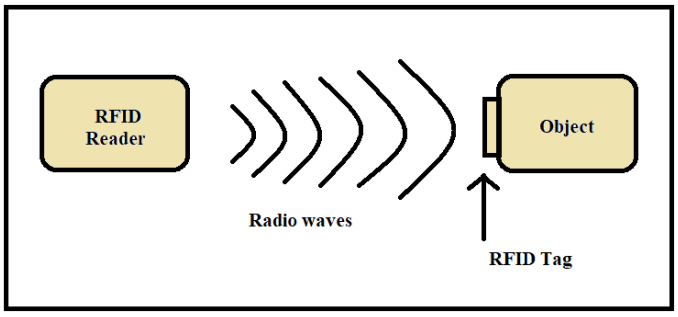

Fig 1.*RFID Tagging*

A. RFID Tagging

It uses electromagnetic fields for reading tags committed to items for purpose of classifying and tracing them extensively used in warehouses to keep track of products. Tags can be read only as a unique serial number as an identification number in a registration system which can be capable of read/write and it can be changed, simplified and locked. Tags are cost effective and are small suitable to fit and to be used on closely on any kind of product.

- *There are three types of RFID tags*
  1. Active tag
  2. Passive tag
  3. Semi-passive tag

- *In our research we used a passive tag*

  A passive tag is an RFID tag does not contain a battery the power is delivered by the reader when radio waves from the reader are met by a passive RFID tag, the coiled antenna within the tag forms a magnetic field. The tag draws power from it, activating the circuit in the tag. The tag then sends the information encrypted in the tags memory.

- *Advantages of passive tags*

  1. The tag functions without a battery these tags have a useful life of twenty years and more.
  2. The tag is typically much less expensive to manufacture.
  3. The tag is much smaller. These tags have almost unconstrained application in consumer goods and other areas.

B. Storing data on cloud

- *Technologies of cloud/Service model*

  1. Saas
  2. Iaas
  3. Paas

According to our research paper we are using the Saas service for storing the data on cloud.

- *Saas (Software as a service)*

  1. It is used by end user.
  2. End user directly uses finished product from the cloud.
  3. In this everything (n/w, storage, servers, OS, etc.) will be handled by cloud provider and commonly used by HR and ERP model.
  4. It does not required to purchase software maintain, upgradation, etc.
  5. Vendors: Google, Microsoft, Amazon.
  6. It is software distribution model in which application are hosted by cloud provider and made available to the cloud customer over internet.
  7. It is also known as on demand software.
  8. It is access by thin client (of minimum configuration) via web browser

- *Advantages*

  1. *Easy to buy*

  Saas prized is based on monthly or annually basis. It allows business functionality at minimum cost as compared to license application.

  2. *Less h/w*

  As software installed over the internet system requires less h/w.

  3. *Low maintenance*

  As s/w installation, upgradation taken care by cloud provider so system requires low maintenance cost

- *How to access database from cloud*

  Oracle SQL developer is an increase environment from using SQL for oracle databases. If you have an oracle database cloud service or a non-cloud oracle database, each way you can use SQL developer to create users, run queries, load and update your databases. First you setup your SQL developer connection information to connect your databases and then create all your users and run your queries.

- *Cloud SQL features*

  It is fully succeeded MySQL and PostgreSQL database service.

  1. *Scalability*

  Easily scale up to 64 processor cores and more than 400 GB of RAM rapidly scale out with read replicas.

  2. *High performance*

  It is designed to scale from small development capabilities up to higher performance intensive workloads.

3. *Integrated*

Cloud SQL instances are accessible from just about any application anywhere. Easily connect from app engine, compute engine and your workstation.

4. *Fully managed*

Replicated, managed and backed up, so you can make better use of your time.

5. *Security*

Cloud SQL data is encrypted on internal network and stored in database tables, temporary files and backups. Cloud SQL supports private connectivity with virtual private cloud (VPC) and every cloud SQL instance includes a network firewall, allowing you to control public network access to your database instance.

6. *Standard API's*

Build and deploy for the cloud quicker because cloud SQL offers standard MySQL and PostgreSQL databases. Use standard connection drivers and built in immigration tools to get started quickly.

7. Availability protection

Live migration makes maintenance of our underlying infrastructure transparent. For isolation from failures, high availability provides continuous health checking and automatically fails over if an instance is not healthy.

- *Proposed System*

Fig1.1.Working of Beating Counterfeits

- *Working Of Beating Counterfeits*

1. While packaging of branded products in warehouse the RFID tags are attached to the products with their unique identification number and other information about branded products
2. After packaging of branded products all information about the branded product with their identification number get stored over the cloud by the manufacturer using RFID reader.
3. Then the packed branded products are dispatched to the suppliers by manufacturer with all information about the branded products.
4. After getting the products the supplier can authenticate the branded products using RFID reader and will get all the data about branded products from cloud database.
5. After identification of products they will be sold to the customers who purchase it.
6. After getting a branded product the customer can verify the branded product. The supplier will get all the data about that product with their identification number from cloud using RFID reader and then product will be delivered to the customer with verification of the product.

CONCLUSION

In this paper we proposed the concept of identification of the branded products using RFID and cloud technologies. We proposed a system that will helpful to suppliers to maintain the quality of a product also it will maintain the reputation of company and it will also helpful or customers to purchase a quality product with their identification. So we conclude that the proposed system will be very beneficial for both suppliers and customers.

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Author Profile in the form of brief detail about his/her acedemic achievements and research area. Picture should be of high quality.

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