Connecting the Physical and Digital World
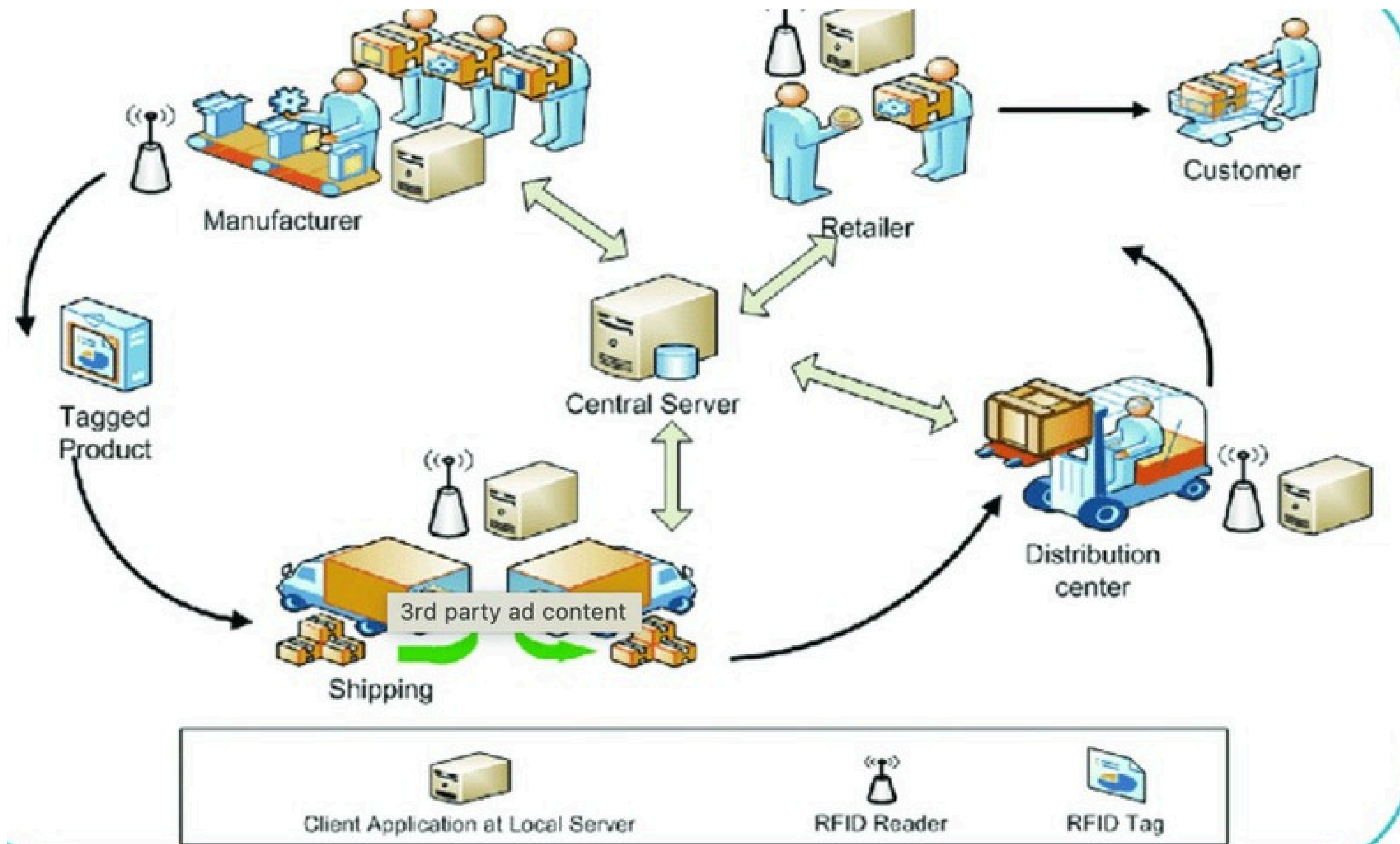
RFID Technologies

Yasser Mufti

Radio Frequency Idenification

Radio Frequency Identification (RFID) utilizes electromagnetic fields to automatically identify and track tags attached to objects. This technology offers significant advantages over traditional barcodes, including real-time tracking, increased data storage, and greater durability in various environments.

ICILTEK can help you create an environment within your company where data can be captured efficiently and accurately with meaningful visibility on any device.

RFID Digitizes data for realtime information

Benefits of RFID

In today's fast-paced market, RFID technology revolutionizes inventory management.

Understanding these advancements is crucial for businesses aiming to improve their supply chain efficiency.

01 Improved Inventory Accuracy

02 Automate Data Capturing

03 Enhanced Visibility

04 Reduce Out of Stock

RFID in Business Operations

Supply Chain Visibility

- Monitor real time movement of goods
- Never be out of stock
- Reduce pilferage

Work In Process

- Automate manufacturing
- Reduce Bottlenecks
- Reduce production time/ time to market

Logistics and transportation

- Automate monitoring of pallets & containers
- Track location and status of vehicles
- Track movement of goods through supply chain

Where RFID has a best Fit

Realtime Visibility
Process where realtime visibiloty of items, spread over different locations is critical for the business

Large Volume of items
When there are large number of items which need to be monitored for their movement and for their availabillty.

Data analytics
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RFID: Toyota Work in Process

ICILtek is providing a special 3-State RFID seal solution to Pakistan customs to reduce smuggling. These seals are put on the container at the port before its departure to the destination. Once a seal is put and locked it cannot be opened it can only be cut. These seals are read by a RFID Handheld reader to verify its state whether enroute or at destination.

RFID: 3 State Container Tracking

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All the data is centrally maintained a web based solution that is monitored by Pakistan Customs.

RFID: Hospital Parking Management

IWe successfully deployed a RFID based Access Control for the parking lot of a busy hospital. Each public vehicle is given a RFID pass which the reader controlling a barrier can detect and grant access. Similarly all hospital staff are assigned a permanent RFID Windshield sticker with time based access. This also helped in attendance marking of the Hospital staff
.

RFID: Weapon Asset Management

ICILtek has deployed a Weapon Asset Management Solution to a security agency which issues weapon to their guards. All the weapons are tagged with a RFID tag which is used to monitor the issuance and return of the weapons.

Any unassigned weapon leaving the premises is detected by the reader and alert is generated. This ensure all the weapons are accounted for in the inventory.
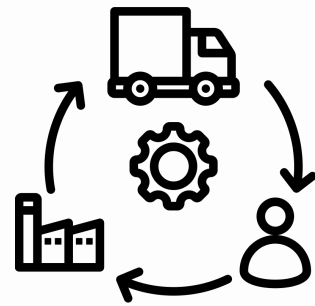
Industry Adoption

RFID has been widely adopted by a number of industry to streamline their business operations.

Pharmaceutical/ Healthcare

- Anti-Counterfeiting Drugs
- Blood bag tracking/Monitoring
- Medical Surgical Instrument
- Equipment and Staff Location

Supply Chain Monitoring

- Improve Product item
- Product Handling Efficiency
- Automated Investory counting and reconciliation.
- Improved Product availability

Warehouse Managment

- Improved efficient
- Refined Inventory Management
- Accuracy of entering, exiting, storing and movement
- Improved restocking planning,

RFID in Airport/Airline Logistics

RFID implementations can reduce luggage mishandling rates by 25% leading stress free travel for passengers and substantial saving for airlines.

RFID Provides seamless digital journey with real time luggage tracking

RFID helps comply with IATA resolution 753

Future of RFID in Smart City

1. **Smart Transportation and Tarffic Management**

2. **Waste Management & Recycling**

3. **Public Safety & Security**

4. **Smart Utilities & Energy Management**

5. **Smart Retail & S ervices**

Despite its advantages, organizations face challenges in RFID implementation, such as **reading**, managing infrastructure, and ensuring **100% reading.**

Addressing these challenges is crucial for successful adoption and maximizing the potential of RFID technologies.

Innovation in RFID

Recent innovations in RFID technology include smart shelves, automated inventory tracking, and integration with IoT devices. These solutions enable businesses to collect data seamlessly, allowing for better decision-making and enhanced operational efficiency.

Conclusion

As RFID technology continues to evolve, its role in inventory management will become increasingly vital. Embracing these innovative solutions will empower businesses to remain competitive and responsive to market demands. The future of inventory control looks promising with RFID.

Thanks!

Do you have any questions?
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