



# RFID Solutions in Supply Chain



Integrate To Accelerate Growth

## Abstract

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Effective supply chain management is all about being 'right' - Deliver the *Right Product* in the *Right Quantity* and in the *Right Condition* to the *Right Place* at the *Right Time* and *Right Price*, with the *Right Documentation*.

Ensuring '*Rightness*' in a shrinking or recovering economy, brings a whole new set of challenges in Supply Chain Management. Managing expectations of all stakeholders can at times seem 'impossible' in these situations.

As per McKinsey Global Survey Report 2010, top 5 challenges ahead for Supply Chains are **Reducing operating costs, Reducing overall inventory levels, Improving Customer Service and Getting products or services to markets faster.**

Operating costs in supply chain are under pressure today from rising freight prices, more global customers, technology upgrades, rising labor rates and new regulatory demands. **Real Time Information through complete Visibility in the Supply Chain is the only way to counter these rising costs.**

Implementing RFID enabled solutions are becoming a necessity of majority of organizations to improve efficiency and scale of operation without increasing operational costs.

**This Whitepaper discusses how E&A can help you improve your Supply Chain Efficiencies, without substantial increase in costs.**



# RFID Solutions in Supply Chain

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# About RFID Technology

Radio-frequency identification (RFID) is a technology that electronically records the presence of an object using radio signals. A combination of RFID tags & Readers allow objects to be tracked within a closed loop operation.

RFID tags can be applied to or incorporated into a product, animal, or person for the purpose of identification and tracking using radio waves. Some tags can be read from several meters away and beyond the line of sight of the reader.

RFID technology is a proven and robust platform for many business solutions like asset tracking, transportation, vendor management, anti theft, inventory management etc. In a supply chain, RFID based solutions can improve efficiencies and reduce losses considerably as it is:

- Resistant to harsh environment
- Can be read as well as 'written to' many times
- Allows reading on moving objects
- Can read many tags at one time
- Ability to read when not in 'line-of-sight'.



An RFID tag

## Business Areas

Where substantial benefits can be reaped by implementing RFID

### Asset Tracking

- RFID tagging assets is the best way to ensure that they are not lost
- Track their usage, performance, efficiency & maintenance cycles

### Manufacturing

- Use RFID based track & trace of Work-in-Progress inventory to reduce defects
- Increase throughput
- Manage the production of different versions of the same product.

### Supply Chain Management

Logistics, Warehousing Inventory Management, Delivery Management - all areas benefit substantially from use of RFID - ensuring complete end-to-end visibility in the Supply Chain.

### Retailing

- Helps retailers focus on improving supply chain efficiency and making sure product is on the shelf when customers want to buy it.
- Automating checkout process using RFID is the best way to eliminate queues

### Security and Access Control

**RFID Based Secure Access Control** - using globally unique ID's ensures that there is no compromise on safety, security and integrity of a facility.





## Benefits

### Reduce Costs

Reduce Pilferage. Automate and Reduce Labor Costs and Overall Inventory Costs

### Enhance Visibility

Complete, Real Time Information — Across all Operations...

### Increase Efficiency

Capture Information Faster & Effectively  
Automated Billing, Hands Free Operations and much more...

### Improve Accuracy

Eliminates Manual Errors

### Build Advantage

Tag once & use Many Times — across multiple Utility points  
Scale up business operations without hassle

### Integrate

Integrate warehouse data into ERP system to get timely and accurate information about warehouse status.

### Get Timely & Accurate Information

Useful for invoicing, purchase order payments and inventory tracking.



# Warehouse Management using RFID

*Imagine a world where there is...*

- No Stock Outs
- Real Time Inventory Status - at all times
- Increased Operational Scale, with little or no increased costs

Managing a lean and efficient warehouse comes with it's own set of challenges

- Inventory tracking
- Real time system updating
- Procurement processing
- System based indents processing
- Order fulfillment verification

Process



- Pilferage prevention
- Reduce order fulfillment turn around time
- Reduced Indent processing cycle time

People



- Visibility across supply Chain
- Easy scalability across locations
- Reduce leakages
- Improved top line & bottom line

Business





# Storas

## Warehouse Management Made Easy

Storas is E&A's solution framework for 3PL warehousing business.

It lets you create an efficient warehouse by gaining control at all operational levels

### Inbound & Outbound Processes

The RFID access points can trace and confirm the arrival of goods from supplier or uploading of goods for dispatch to customer



### Manage Inventory More Effectively

The RFID interrogators at warehouse / forklifts can track the flow of goods within the warehouse.

Using zoning techniques and bin-rack tagging using RFID tags – the exact location or co-ordinates of any package is available 'in real time'.

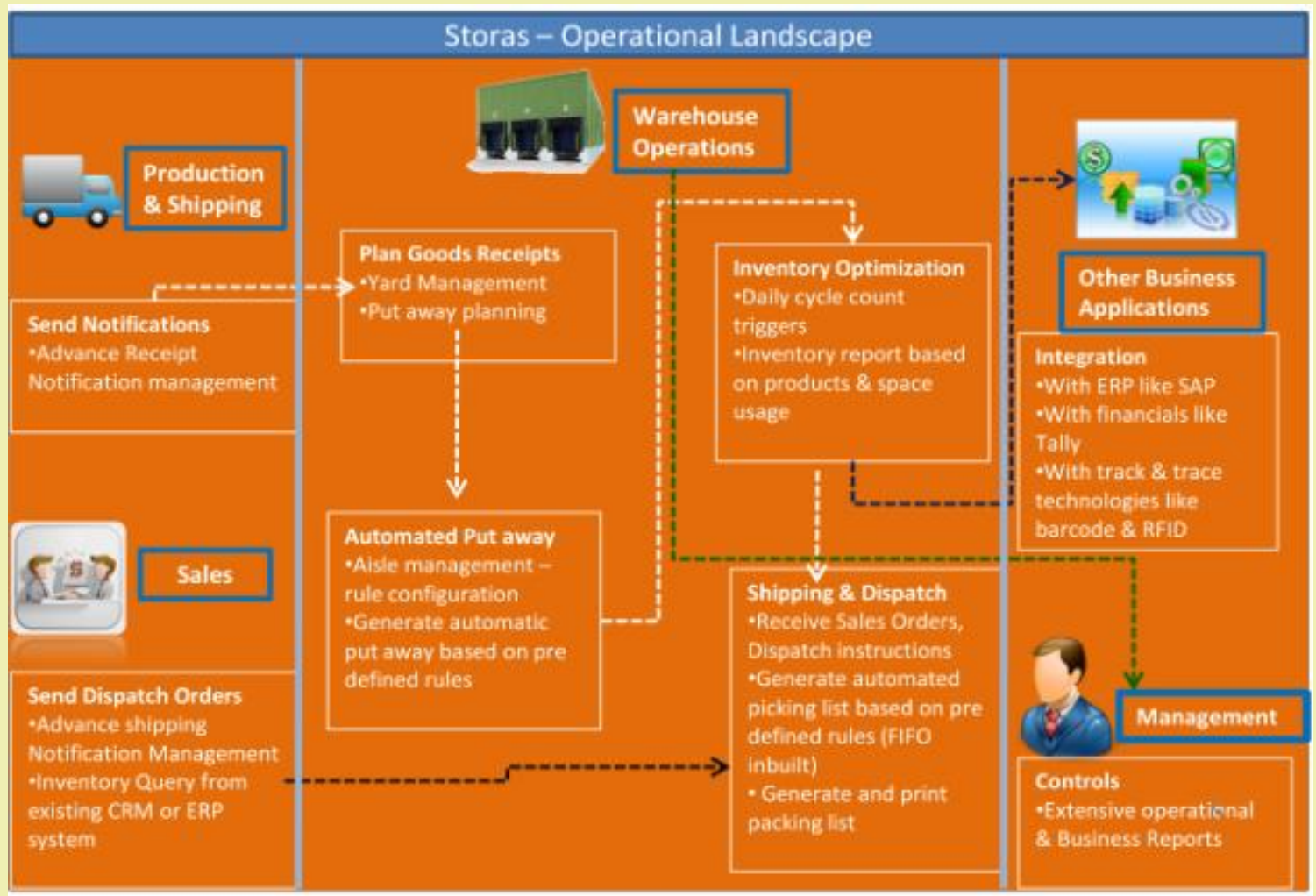
This information can be integrated with existing ERP systems.



### Picking & Dispatch

The ERP system generated picklist can be made available on PDA's. This ensures that the picking & dispatch is accurate – at all times.





## As a result you gain

### Complete visibility & control

Warehouse processes are monitored right from arrival at warehouse to dispatch – helping all stakeholders share knowledge and resources across the supply chain.

### Improvement in Warehouse Efficiency

Complete automation – through RFID and barcode enabled solution  
Improves overall warehouse efficiency and response time.

### Control of warehouse processes

Screens out inefficiencies in warehouse operations through well structured and defined workflow.

### Warehouse Automation

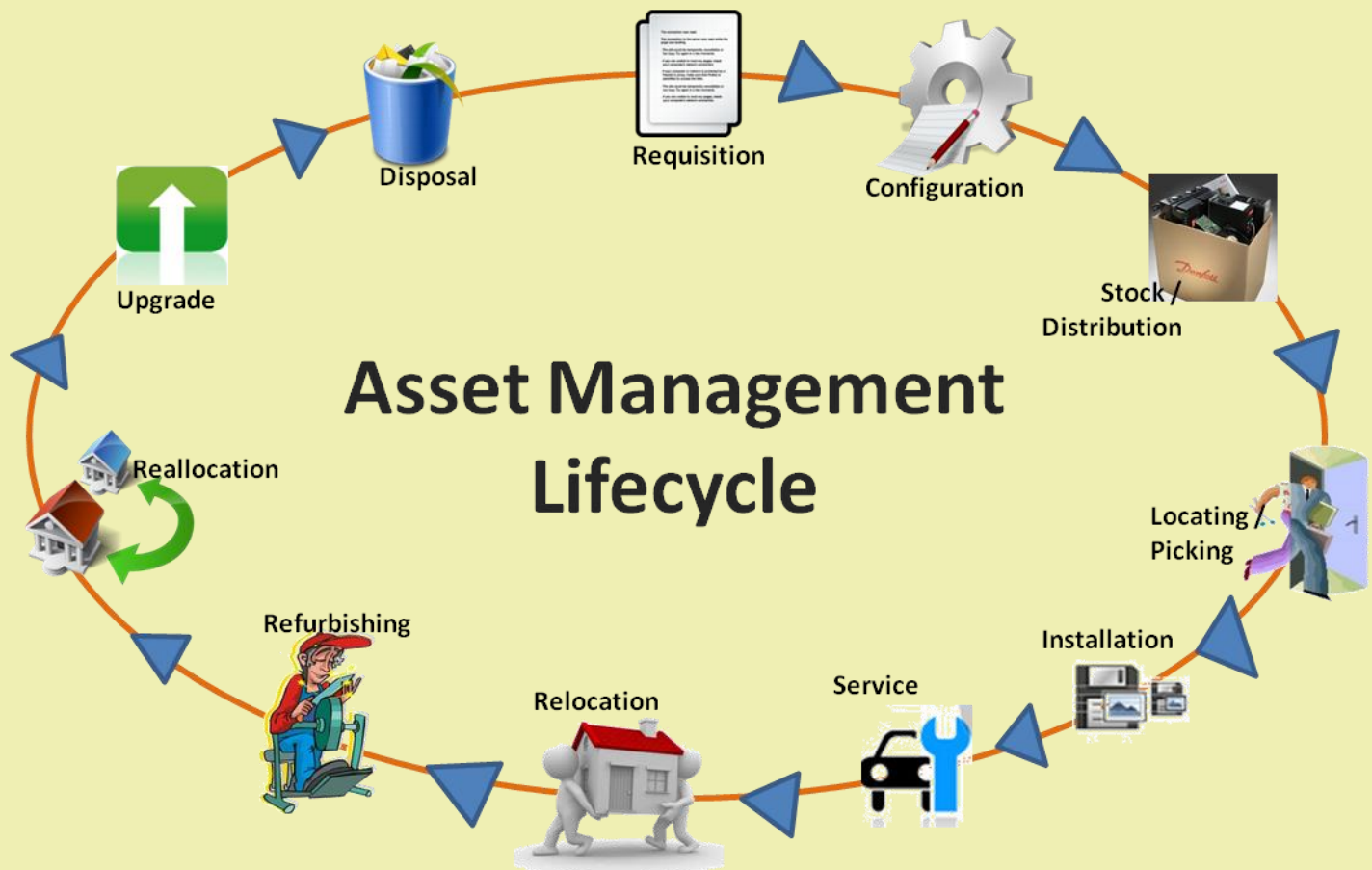
With seamless connectivity, it can enable efficiencies in 3 areas:

- Customer Management
- General Operations & Logistics
- Warehouse Operations

### Increase in profitability of overall business

- Shorter turnaround time
- Increased people efficiency
- Decreased shipment errors
- Complete 'business cycle' visibility

# Asset Management Challenges



## Asset Management involves managing these key Issues

What do you own?

What is it worth?

What is the maintenance backlog?

What is its condition?

What is the remaining service life?

What will you fix first?



# Avantage

## RFID Based Track & Trace Systems



## Solution Process

### Complete asset visibility:

- Ownership
- Location
- Value of assets



### Controls on:

- Asset Life Management
- Maintenance Schedules
- Inventory Management



### Monitoring of:

- Asset issue
- Asset Movement



## Benefits

# Last Mile Delivery

## Challenges & Solutions



## Delivery Management - Challenges

'Last Mile Delivery' has always been the greatest challenge for all distribution companies - riddled with problems ranging from inefficient delivery to loss of consignment. And to add to the woes, customers today demand flexible delivery times, real time consignment information etc.

Last Mile Delivery Challenges can often create a major economic impact to the bottom-line of any organization.

### Key challenges in last mile delivery



#### Transport Partner Challenges

- Ensuring 'In Full' & 'On Time' deliveries
- Routing & route tracking



#### Visibility Challenges

- Lack of information on exact delivery times
- No actionable information to ensure efficient load planning, scheduling etc.



#### Customer Alienation

- Customer Expectation - Delivery mismatch
- Disputes on goods arrival, condition of goods etc.



# DelTraq

## PDA Enabled Last Mile Delivery

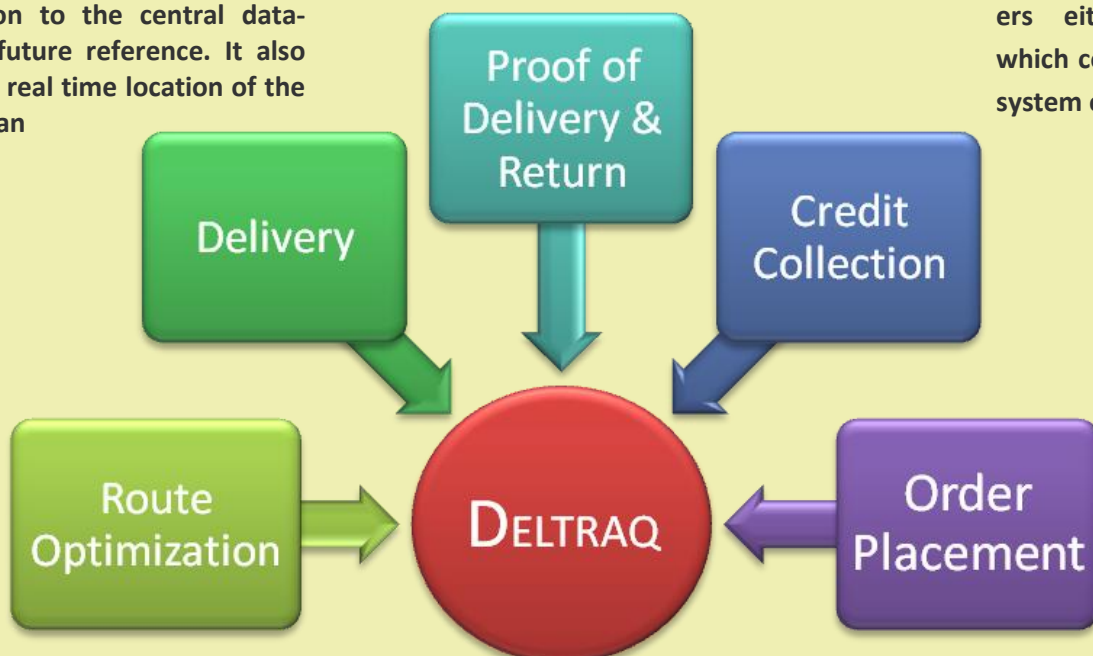
DELTRAQ – E&A’s PDA based delivery management system – is designed to address challenges like the ones mentioned. DELTRAQ allows business managers to completely control transportation and routing issues and guarantees complete visibility of the delivery cycle.

DELTRAQ helps you to handle distribution by helping manage the following processes

The process is managed with a GPS enabled PDA terminal which provides & captures real time data of the consignment. The PDA is also used to upload delivery related information to the central database for future reference. It also tracks the real time location of the delivery van

The PDA is used to capture signature of recipient as proof of delivery as well as the details of sales return from customers

The PDA could be used for collecting credit from the suppliers either in cash/cheque which could be updated in the system on the spot



The consignments are segregated based on the destination so as to minimize the overall transit time

The PDA could be used to take on the spot orders from the customers, which could be transmitted back in the ERP which would provide forward visibility to the production team. This would help in countering 'Bullwhip effect'

# DelTraq

## Benefits



### Improved Customer Experience

Reduced complexities and enhanced customer experience at each level of interaction. Only affected customers receive alert if route is running late. The system does all the hard work and saves the customer service team from making unnecessary calls to drivers and customers.



### Reduced operational costs

Less paperwork and time involved in the delivery process



### Performance of delivery van

With GPS tracked location of delivery van system can measure the distance clocked by the vehicle and its route compliance.



### Performance of delivery person

Real time information of deliveries – time of delivery, completeness of delivery etc. – it is now possible to track the performance efficiency of the delivery personnel.



### Improved Credit Management

Real time updation of credit collection as well as sales return reduces payment queries.



### Improved Efficiency

GPS enabled route planning, and actual performance based load planning can help improve the overall efficiency & effectiveness of supply chain.



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