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Reusable Container Tracking

Supply Chain Visibility and Optimization for a smarter planet

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September 16, 2009





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Agenda

- Introductions
- Container Centralen
 - Introduction of CC
 - RFID in the European Green Sector
 - CC's Reusable Container Tracking Solution
- IBM's Reusable Container Tracking Solution
 - Value Progression Roadmap
 - Customer Examples
 - Solution Architecture
- Questions?





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Supply Chain & Traceability Solution



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Reusable Container Tracking

by

Tonny Vangsgaard Gravesen

CEO of Container Centralen A/S



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- Introduction of CC
- RFID in the European Green Sector
- CC's Reusable Container Tracking Solution



Curriculum Vitae



- CEO of Container Centralen (CC)
- 20 years of experience in Supply Chain Management
- Executive MBA
- Married – father of 4 daughters

Container Centralen

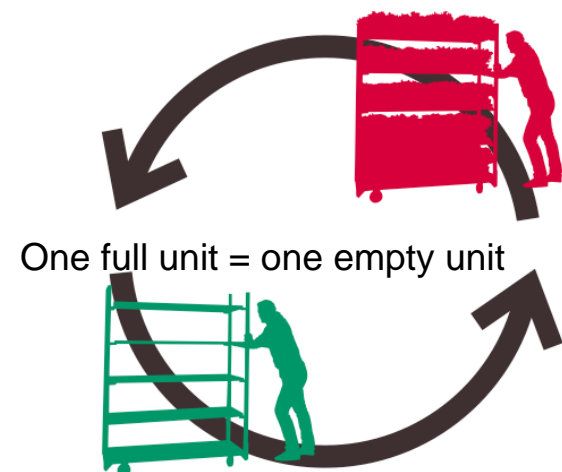
- **The Beginning – 1976:**
The start of CC was caused by a demand for a unit for the distribution of flowers and plants ...

The CC Container



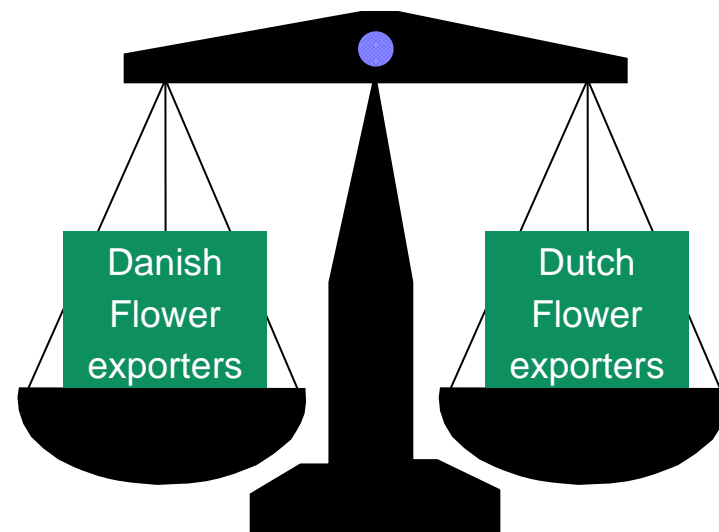
..supplemented by a simplified Pool System

- The CC Pool System is in principle based on one-for-one exchange
- Empty units are exchanged for full units and vice versa
- Reduced number of transportation units in the entire supply chain
- Higher efficiency – lower costs



Container Centralen

- Activities started up in 1976 under GASA Group and other Danish flower exporters
- 1980: Container Centralen AmbA founded in Denmark
- 1989: Container Centralen A/S founded (limited company) with Dutch flower exporters as co-shareholders





Some key figures

- Head office in Odense, Denmark
- About 140 employees worldwide
- Serving more than 23,000 customers across 40 different countries
- Every day, we help more than 80,000 users to move products
- Turnover in 2008 71M €





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CC Offices





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CC Products



CC Container



CC Rollcontainer



CC 1/2 Container



CC Minitainer



CC Eurocontainer



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CC Products



CC Freshboxes



CC Eurocrate



CC Rolly



CC Dolly



CC Euro Dolly

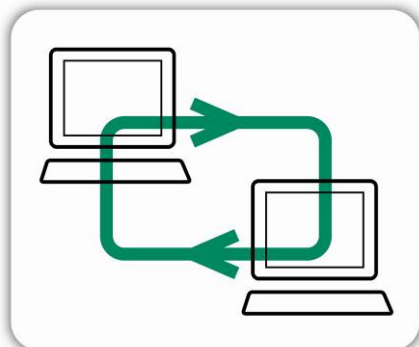


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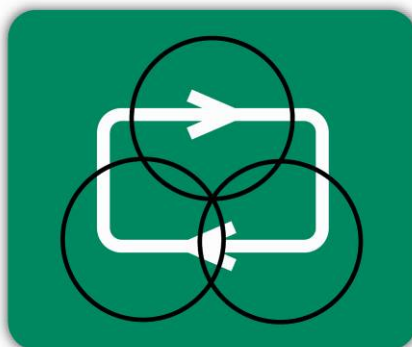
CC Services

CC LogLink Service



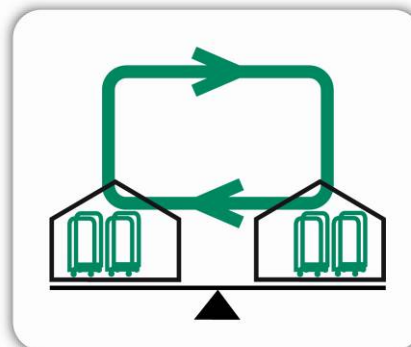
We show your RTIs' every move

CC Hire Services



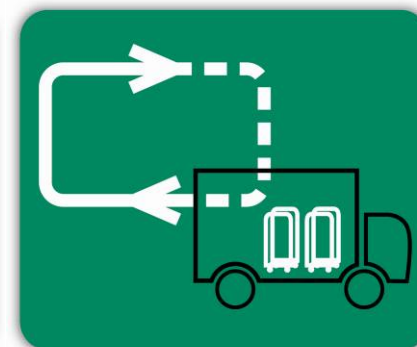
We offer hire services for every need

CC Balance Service



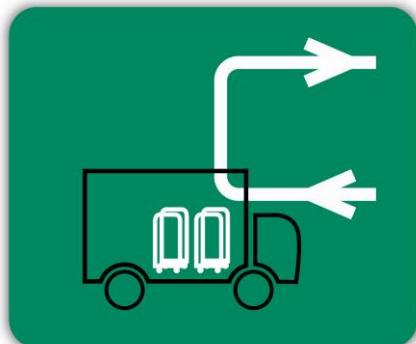
We keep track of your RTI balances

CC Collection Service



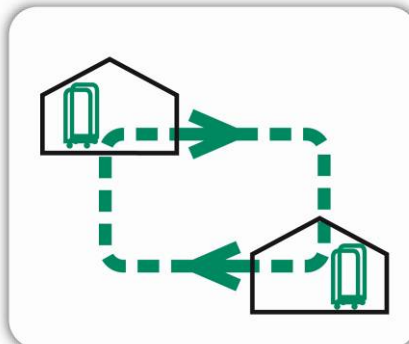
We take care of your return-flow

CC One-Way Service



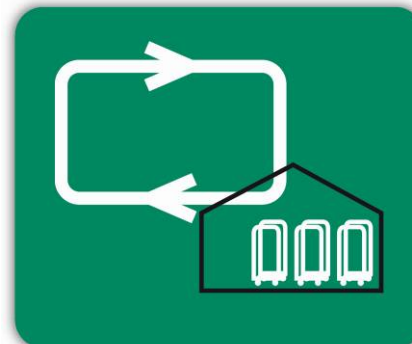
You ship – we take care of the rest

CC Transfer Service



We hand out your RTIs where you need them

CC Depot Services



Extra services for your RTIs



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- Introduction of CC
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- CC's Reusable Container Tracking Solution



RFID in the green sector

- In 2004 an international project group established
 - Participants:





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6 key drivers for initiating the project

1. Retail requirement for RFID tagging
2. Operational resources used on counting bases and shelves and checking on accounts for each member of the supply chain..
3. Industry “shrink” on containers in the range of 5-8 % per year..



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6 key drivers continued

4. False low-quality copy containers introduced – increasing maintenance cost, and by that the annual pool fee..
5. The green sector needs to automate logistics processes linked to trade transactions, such as movements of goods..
6. Container Centralen is moving from a pool operator to a logistic service provider and wants in future to add value and services within the supply chain..

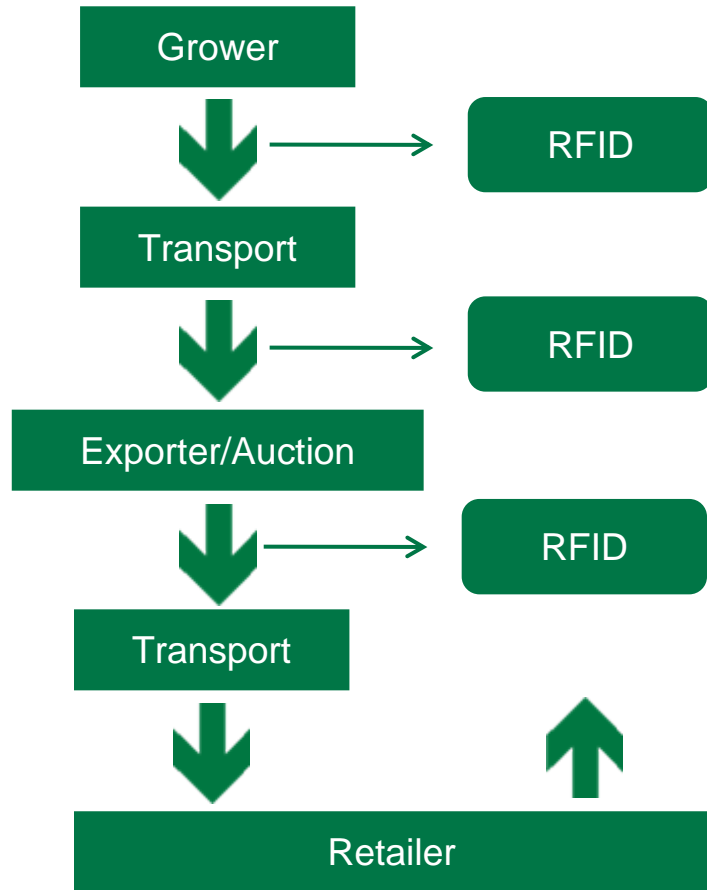


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The pot plant supply chain

Status:



“Container left grower”

“Container arrived at exporter/auction”

“Container left exporter”

“Return logistics”



Steps.....

- In the first years ideas, technology, suppliers, possibilities etc was investigated and debated...
- In 2007 and 2008 three major RFID pilots in Denmark, Holland and Germany showed huge advantages in controlling and tracking RTIs and not least improved operational efficiency.
- The technology seemed an opportunity to close the pool for copies
- Based on these experiences we planned to put RFID tags on our 3.5 million flower containers in the European Green Sector.



Supplier

After a tender CC signed up with IBM in February 2009

Deliveries:

- 3.5 million RFID tags in a unique housing
- Gates and scanners for 58 depots and repair shops all over Europe
- IT infrastructure to handle the data and flows
- Development of an RFID track and trace solution

Expected implementation 1st of February 2010



Benefits

- Protection of the CC pool
 - Lower repair and maintenance costs
 - Savings on operations
 - Automated operation
 - On line order handling
 - Track & Trace
-
- Data carrying of goods distributed in the supply chain:
Grower → Exporter / Auction → Retailer



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Thanks for your attention !



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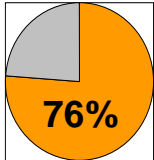
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The Challenge - Lack of Visibility Results in High Costs and Risks

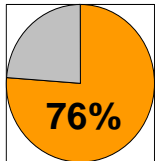
Product Counterfeiting & Gray Markets



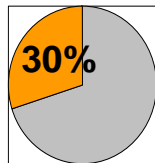
Containers used in critical business or consumer applications tend to get counterfeited leading in monetary as well as possible public safety issues



Asset Utilization & Supply Chain Visibility



76% of companies have problems tracking returnable containers leading to poor asset utilization



Annual shrinkage loss rates are between 15% to 30%

Lack of visibility leads to higher safety stock levels for containers as well as inventory

Containers represent a considerable investment for manufacturing, distribution, transportation and logistics companies. Monitoring is difficult and tracking is often not in place.

Opportunity for Incremental Revenue

Better visibility can drive enhanced product quality and customer service levels

Proof of Delivery

Automated confirmation of the shipping and receipts of containers used as a proof of delivery of its contents

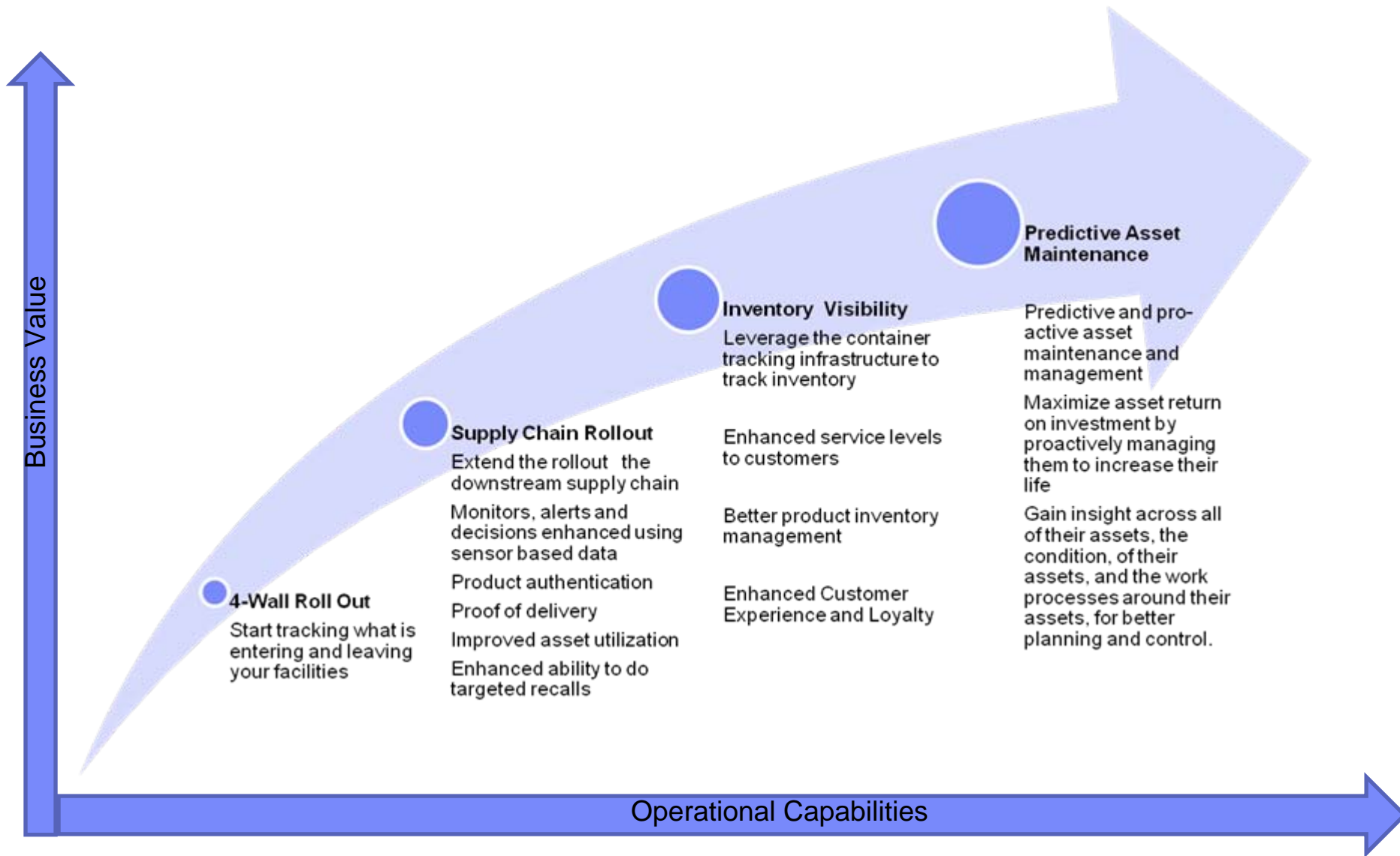
Enhances Traceability & Agility

Automated tracking of serialized containers and associating them with products through various stages of supply chain enhances supply chain agility, traceability, and ability to do targeted recalls



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Reusable Container Tracking Solution – Value Progression



Business Visibility: McLane



Project Objectives

- Optimize inventory of returnable totes through increased visibility with RFID
- Reduce replacement costs for lost and damaged totes

Business Benefits

- Visibility of tote location and paths – improved efficiency through supply chain visibility
- Reduce tote shrinkage
- Increase accountability and ability to charge for unreturned totes
- Increase technology adoption in operations



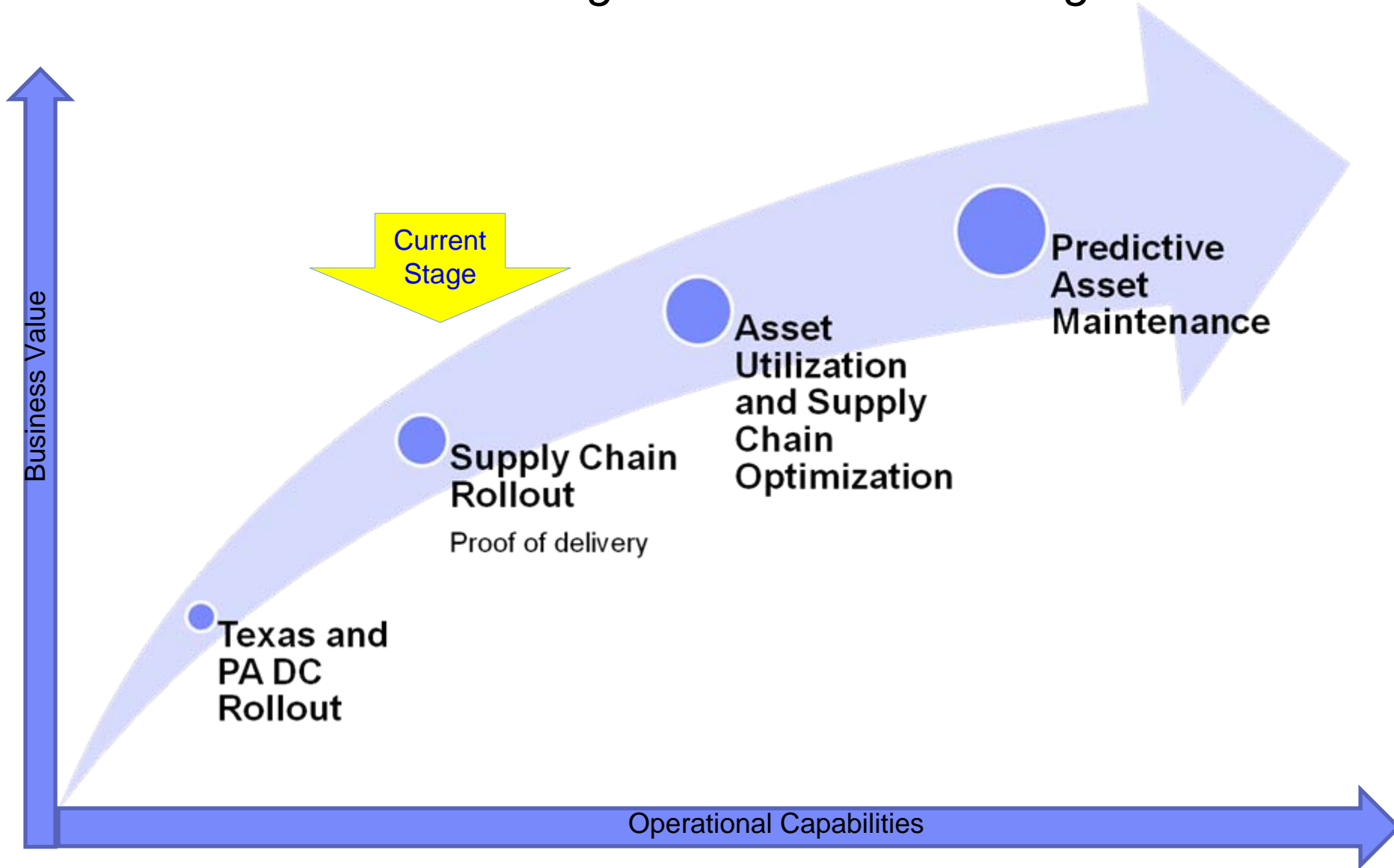
Smarter Insights

- The increased visibility provided by RFID provided unexpected and valuable insights into supply chain business processes and has spurred discussion on how RFID can be leveraged in other areas.
- A flexible architecture enabled quick adaptation to changes in hardware and standards.
- Reduced shrinkage saved hundreds of thousands of dollars annually.



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McLane Container Tracking Solution – Value Progression





Container Tracking Metrics – Asset Management

Metric	Description	How to derive
Container inventory level (count)	Number of containers at locations	Derived from last read point of each container
Throughput	Containers processed per day	Derived from last read point of each container
Inventory level (days inventory)	Inventory levels expressed in days worth of inventory	Ratio of inventory level divided by throughput
Container dwell time	Length of time a container spends at a given location	Elapsed time from shipping event to a given location until it is received again
Container utilization	Amount of time a container is in use	Elapsed time from picking start event to customer delivery
Container loss rate	Identify slow moving, non-moving containers which may be lost	Containers which have not changed location or been read in the last N days
Container cycle time	Elapsed time of container round-trip	Elapsed time from receipt event to subsequent receipt event
Maintenance cycle times	Identify abusive container use and efficacy of preventative maintenance.	Length of maintenance and repair processes
Container lifetime	Identify abusive container use	Elapsed time container commissioning to decommissioning
Container age	Age of container inventory	



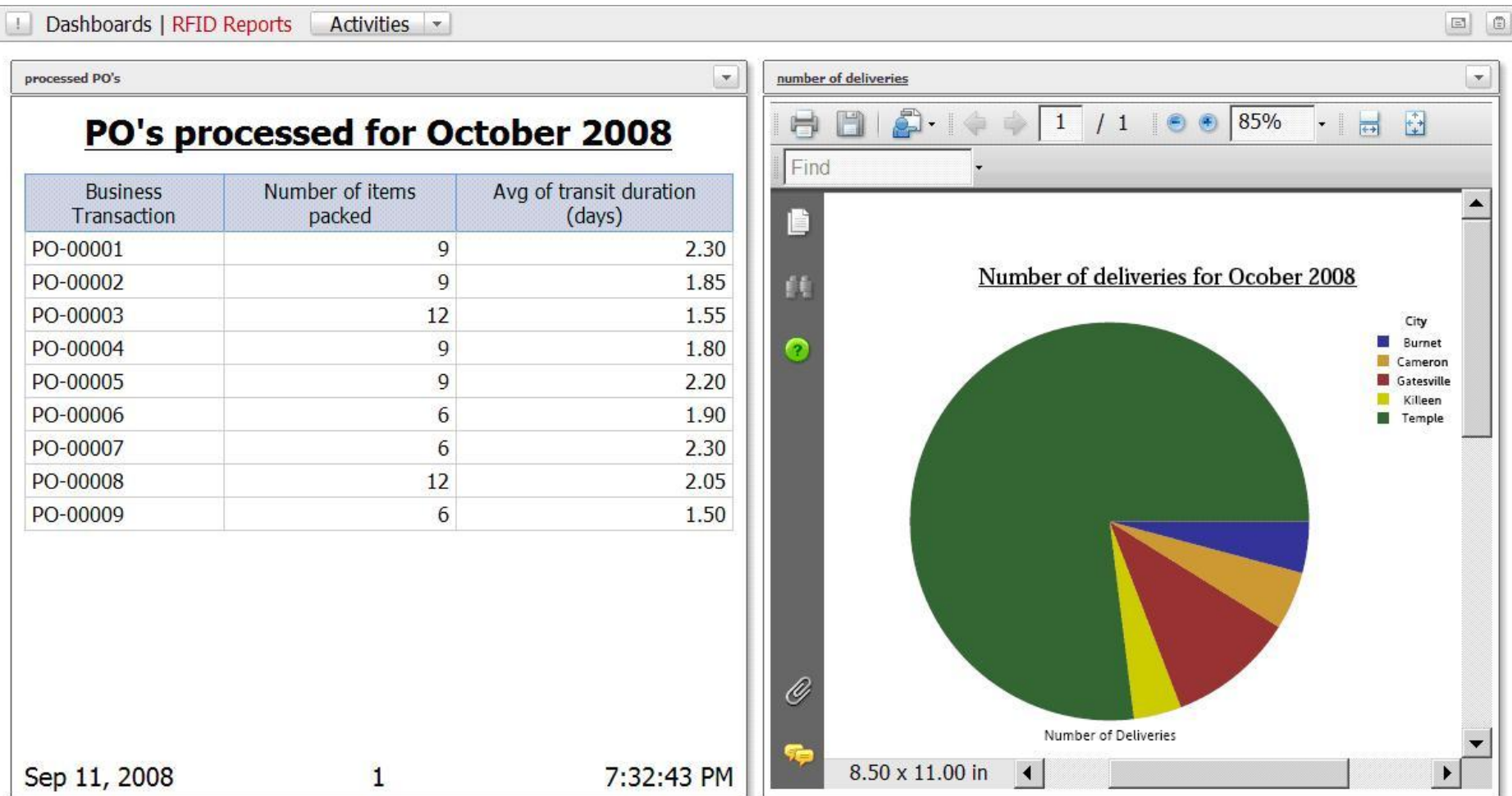
Container Tracking Metrics – Supply Chain Processes

Metric	Description	How to derive
Storage processing cycle time	Time to receive empty containers and put them into inventory so that are available for new orders	Elapsed time from receipt event to inventory read event
Order receipt-to-pick cycle time	Elapsed time from order issued to pick complete	Elapsed time from order queued to pick complete
Order picking cycle time	Elapsed time from order issued to pick complete	Elapsed time from first pick/aggregation event to final pick/aggregation event
Order pick-to-ship cycle time	Elapsed time from pick complete to shipment	Elapsed time from last pick event to shipped event
Total order fulfillment cycle time	Elapsed time from order issues to shipment	Elapsed time from order queued to shipped event
Order accuracy	Actual quantities shipped versus quantity ordered.	
Shipping in-transit time	Elapsed time from order shipment to order receipt	Elapsed time from order shipped event to receipt event

Asset Management Dashboard – Summary View



Report Dashboard





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Questions?