The Role of ICT in logistics Management & Cold Chain applications
Do you have the following doubts?

- How can I ensure food quality?
- Do I know food sources?
- Is froze food fresh enough?
- How can I guarantee food safety?
- Is healthy food really healthy?
How can we monitor logistics end-to-end and ensure safety and quality?

Let’s see, how do we protect ourselves!
How can we manage delivery controls that improve food safety and security, provide for traceability and recall, meet legal requirements and increase our return on investment while solving these costly problems and wasteful practices?
ILC

• I : RFID -

• L : Location -
  Reader IP/GSM/GPS/ZigBee

• C : Conditions -
  Temperature/Humidity/Vibration/Lux. and etc.
Non-Production RTI Information Platform

GTS Cloud
To Share Data

RFID ILC
& Product Info.

Item (ONS), Quantity, Packaging, Change of Custody, Delivery Confirmation and etc.
Step 1
Embed the goods, box and pallet with RFID temperature sensor tags
Step 2
Put RFID embedded boxes onto conveyer and palletize
Step 3
Place pallet embedded w/RFID tags onto storage shelf w/RFID address
Step 4
When delivery is not in refrigerated trucks, temperature control insulated containers can be employed to monitor the integrity of product.
Step 5
Once insulated container is on the truck, use a fleet tracking solution to monitor safety and freshness of goods.
Step 6
Once goods are safely delivered to consumers, they can check food traceability thru smart phone 3G or internet using the GTS cloud server.
Benefits

- End-to-end seamless monitoring in real time mode
- Improve security and integrity of transported goods
- RFID platform provides track & trace capability
- Reduce cost and waste, improve efficiency
- Consumers can see product traceability in real time
- Consumer confidence, trust and peace of mind
- Increased Sales, Lower Costs
Mexico Blackberry Temperature Monitoring Project Overview & Results
Leading berry brand owner averaged 7% internal shrink in 2010 for blackberries shipping from Mexico.

This 7% *internal* shrink equates to approx. 2 pallets for every truckload (27 pallets per load).

So approx. 2 pallets, or 5,760 6oz clamshells, in every truckload were not sold to the retailer customer.

This does not capture the shrink at the retailer, which can be 2x – 3x that seen by the brand owner.
Hortifrut berries are ALL GOOD BERRIES, BUT - they have different remaining shelf life when received from growers Currently berries come in from growers, pass QC, and are put on export pallets on a First In Basis (traceability control) WHICH RESULTS IN MIXED SHELF LIFE ON MULTIPLE PALLETS....

Having different remaining shelf life mixed on pallets, causes problems later. Sending short shelf life berries on longer delivery cycles turns Good Berries into BAD Berries for the retailer and others. More yellow & red pallets in Philadelphia & Oxnard ~ More shrink at the retailer ~ Lower customer satisfaction

If we can group berries by shelf life, we avoid problems on multiple pallets – and send pallets to the right destination...
## Solution Provides ROI in 1 Season!

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Reduction of internal shrink</td>
<td>30% - 50%</td>
</tr>
<tr>
<td>Reduction of external shrink (retailer/consumer)</td>
<td>30% - 50%</td>
</tr>
<tr>
<td>Reduced retailer claims</td>
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<tr>
<td>Reduced retailer required price adjustments/discounts</td>
<td></td>
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<tr>
<td>Savings from reduced freezing injury during the pre-cool process</td>
<td>12%</td>
</tr>
<tr>
<td>Savings from rerouting pallets at US DCs due to additional temperature abuse experienced during transit</td>
<td>14% - 29%</td>
</tr>
<tr>
<td>Savings from reduced re-grading costs at US distribution centers.</td>
<td>30% - 50%</td>
</tr>
</tbody>
</table>

**ROI Calculation Does Not Include:**

- Savings from reduced insurance costs.
- Savings from continuous operational and systemic process improvements.
- Value of increased product quality resulting in repeat business by retailer and consumer.
- Value of brand protection and building.
- Value of inherent traceability and food safety.
These pulp temperatures were taken on arrival in Oxnard.
Want Want Shipment from Taiwan to Hawaii
Container Tracker with eSeal and Mapping
1. Lots of temp variation during that early handling - and even on the ship - these warmer temps mean shorter shelf life - easily shorter by a few days.

2. Relative stability during sea transport – But lines trend upwards indicating that the pallet was warming during ship transportation for some reason.

3. Top of pallets are warmer than bottom - by up to 5 degrees F.
Want Want Shipment Tracking in real time
Objectives

The Global Wine Traceability is aimed to illustrate how to leverage GS1 global traceability standards together with core GS1 Global Identification (Global Trade Item Number, GTIN) and EPCIS Traceability Standard to:

- increase the supplier relationship through better supply chain visibility
- enhance consumer safety through real-time quality tracking from source-to-store

Participating Companies:

Leading fine wine importers and distributors in Greater China since 1999
Global Source-to-Store Wine Traceability

Capturing product event data (traceability information and temperature status) in real-time

European Wine

- European Wine warehouse
- European Wine warehouse Shipping
- HK port Receiving
- HK port Shipping
- HK Wine warehouse Packing and Selling
Turn a blight into an asset
Hydroponic Food for thought
Vertical Farming

- Closer to consumer
- Environmental friendly
- Environment sensors control
- Food Traceability (safety)
- Scalability
- Use 90% less water
- Nutrient and Fertilizer recyclable
- Create local new jobs and tax
- Fifty time production yield
Thank you for your consideration of our products and services.

For more information, please contact us at: info@gtsllc.co