

Using RFID Technology to Manage and Secure the Supply Chain

October 4, 2006

Presented to: AAPA IT
Committee—Miami, Florida



- Savi Networks Overview
- Market Drivers
- RFID Networks & Solution
- Network Deployment
- Progress
- Summary

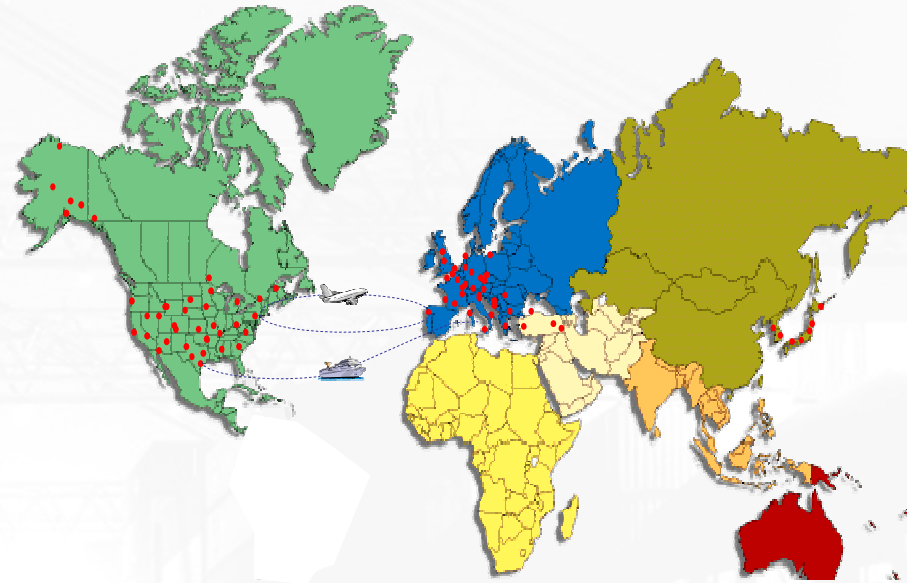
- **The challenge -- improved, automated visibility in commercial supply chain -- has been one of the chicken and the egg.**
 - Many different entities have to collaborate on network deployment
 - No one entity has been willing to make the network investment decision
- **Savi Technology and Hutchison Port Holdings formed a joint venture to address the container security and tracking market**

Savi Networks

- Provides container and cargo location, identity, and status information services
- Partners with Ports, terminal operators, carriers, shippers, and their service providers
- The company will be based on existing and emerging technical and industry standards (WSC/ISO, WCO, CBP)
- The platform is open and extensible
 - Like cellular telephone service providers, Savi Networks will build the infrastructure necessary to allow others to plug in whatever technology meets their customers' needs

Based on US DoD Total Asset Visibility Network

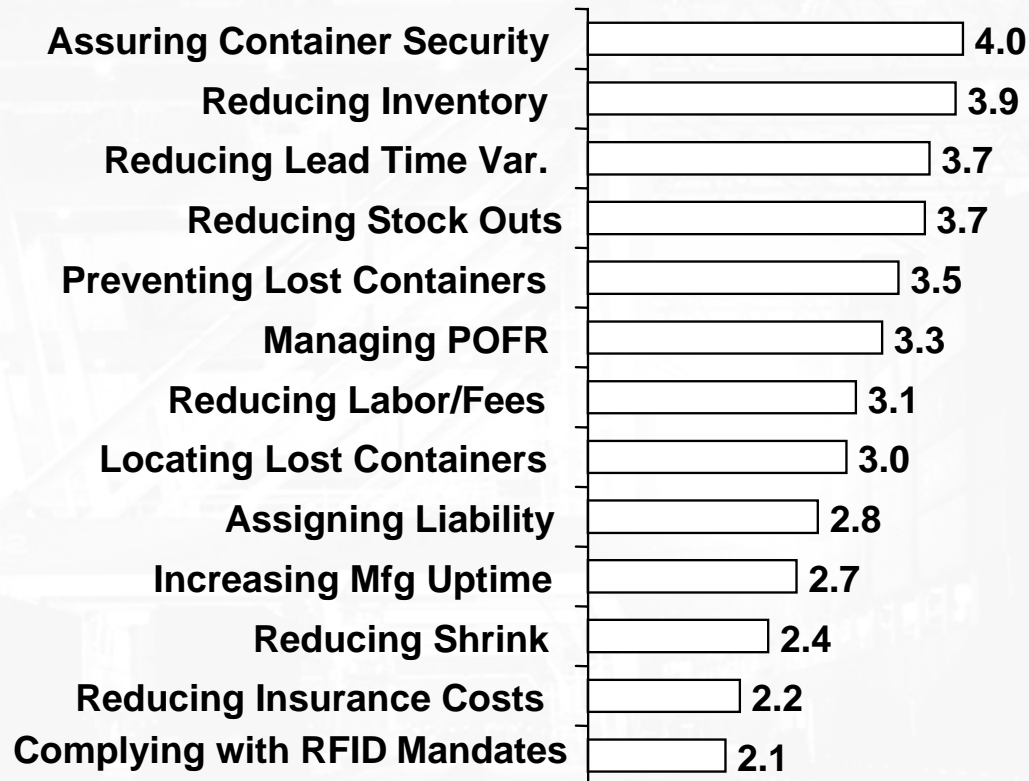
- Business Problem: Poor visibility of containers/supplies to theatre. Lost manifests, manual inventory management, extreme safety stock requirements.
- Solution: Global visibility network with RFID solutions for tracking materials. Integrated with complementary technologies (sensors, GPS, scanners, biometric, and handheld devices).
- World's Largest Global Visibility Network
- 50,000 containers tracked daily in 34+ countries



- **34+ Countries**
- **2,300+ Nodes** - airports, seaports, rail terminals consolidation points
- **50,000 + Conveyances/Day**

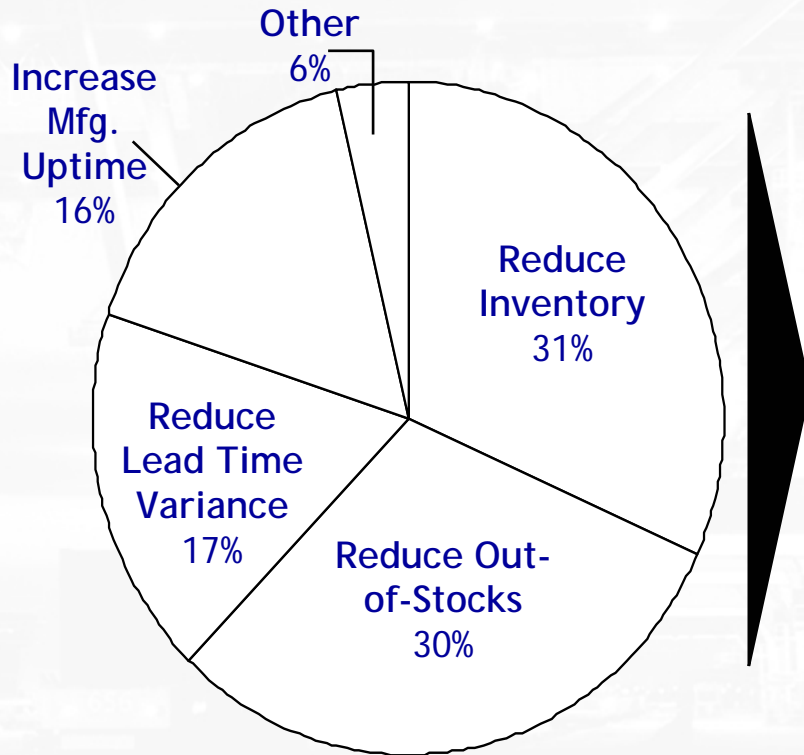


***Reducing Inventory and Assuring Container Security
are the most important issues supply chain executives are managing***



Source: A.T. Kearney interviews

Supply chain executives estimated the total average benefit per container from an end-to-end RFID tracking solution will be approximately \$1,150⁽¹⁾



Key Findings

- Approximately 94% of the total benefit derived from the offering savings are driven by four factors
 - Reduced inventory carrying costs
 - Reduced out-of-stocks
 - Reduced lead time variance
 - Increased manufacturing uptime
- Reducing labor and fees (3%), increasing security (2%), preventing lost containers (1%), combined for 6% of the total benefit

Note: (1) Reducing insurance costs showed zero benefits or the benefits could not be provided, according to the interviewees

Source: A.T. Kearney Interviews; A.T. Kearney analysis

10/31/2006

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6

Market Drivers: Regulatory

→ISO Electronic Seal Standard—Sets the International Baseline for System and Device Development

- ISO 18185
 - Carriers and terminal operators have pushed ISO electronic seal standard to draft form
- No disruption to existing supply chain processes
 - Efficient verification
 - Reduced/eliminates transmission & reconciliation errors
- Opportunity for far-ranging efficiency benefits
- Anticipated approval late 2006-early 2007

Market Drivers: Legislative

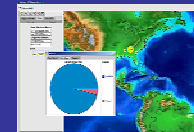
US Port Security Act—provides more clarity for the marketplace

- Passed both House and Senate, survived conference and will be signed by the President.
- Benefits for CTPAT shippers who adopt enhanced supply chain security procedures and technologies, such as:
 - Provision of Advanced data and
 - Use of Container Security Devices
- Benefits rather than mandates for CSD usage
- Defines Container Security Device as: “A device or system designed at a minimum to identify positively a container, to detect and record the unauthorized intrusion of a container, and to secure a container against tampering throughout the supply chain.”
- DHS to develop rules for CSD’s to insure that standards are consistent with standards developed by international standards organizations such as the ISO, IMO and World Customs Organization

- **Savi Networks is a utility service**
 - Installs and operates a shared network infrastructure
 - Operates the service to collect data, monitor the network and provide information to customers
- **Savi Networks provides hardware, services, and tags necessary for users to connect**
 - Manufacturing and consolidation facilities that originate cargo
 - Distribution centers receiving cargo
- **Savi Networks provides data to carriers, shippers and/or other customers**
 - Hosted view of the information
 - Integration to backend systems
 - Per transaction or subscription basis

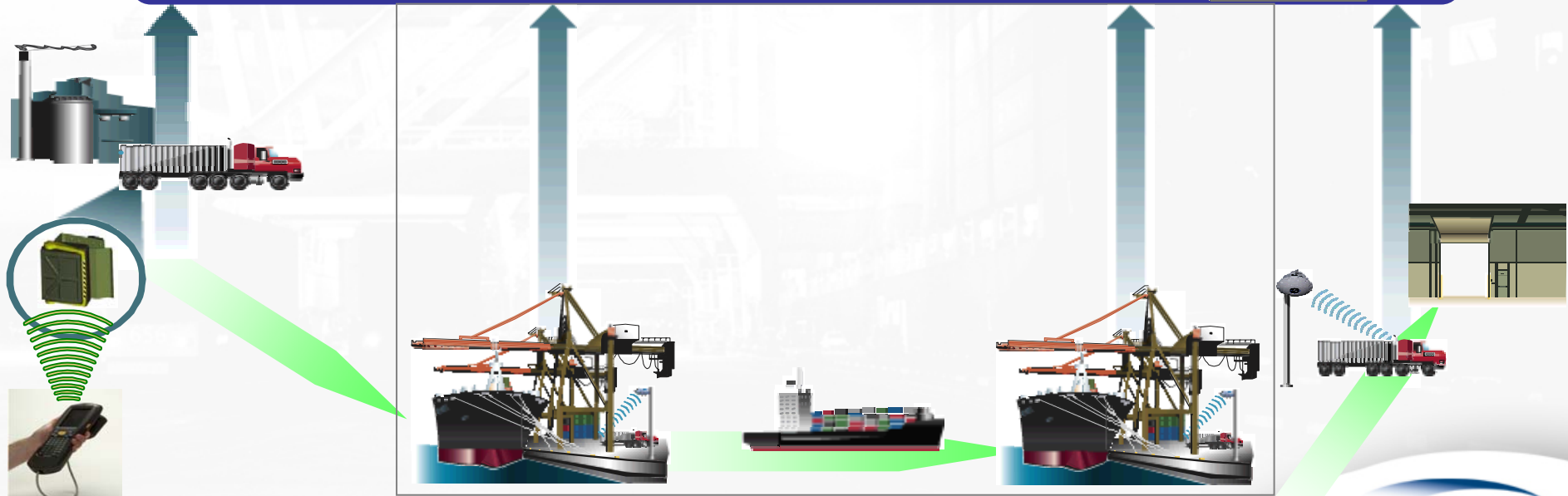
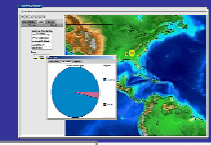
Savi Networks deploying an RFID network in major ports including a hosted application to provide global visibility and manage the security of ocean cargo containers

Savi Networks Hosted Software



Shippers pay for RFID tags and RFID infrastructure at supply chain end points, connecting to Savi Networks hosted software extending the network across the global supply chain

Savi Networks Hosted Software



Final confirmation of physical security integrity by a reader mounted on each quay crane at the point of loading



Network Deployment: ECT Rotterdam

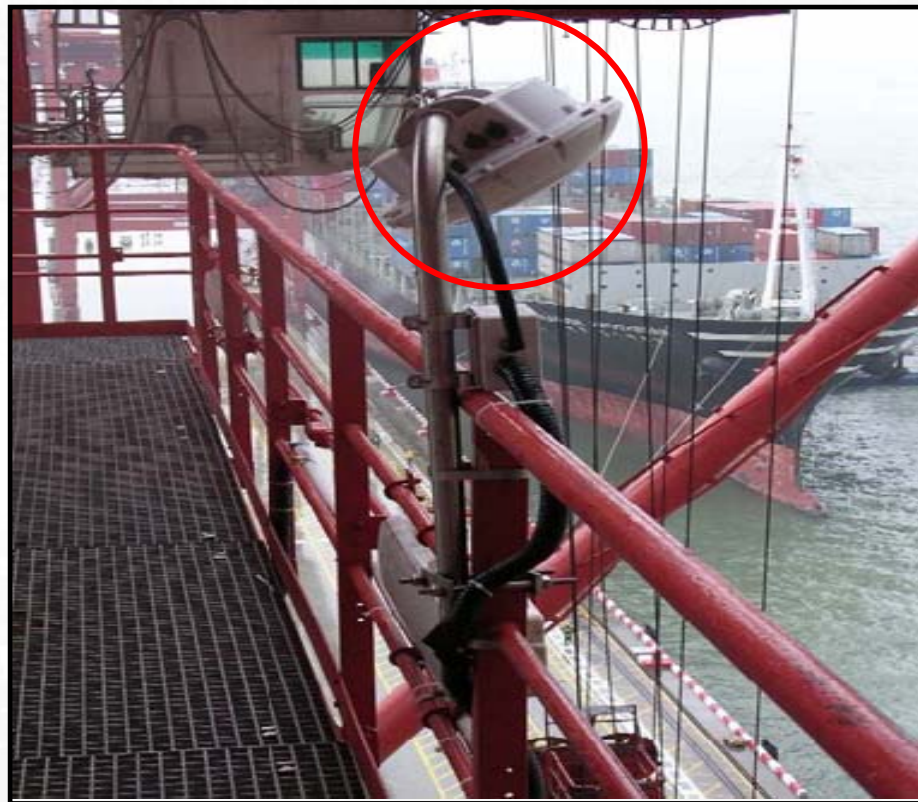


Network Deployment: Chiwan Container Terminal, Shekou Container Terminal

Chiwan Container Terminal (CCT)
Shenzhen, China



Shekou Container Terminal (SCT)
Shenzhen, China



Network Deployment: Yang Ming Container Terminal, Yantian International Container Terminal (YICT)

Yang Ming Container Terminal Kaohsiung, Taiwan



Yantian International Container Terminal Shenzhen, China



Network Deployment: Port of Seattle, Port of Busan, Singapore

Port of Seattle, USA



Tanjong Pagar Terminal, Singapore



Hutchison Korea Terminal, Busan



Readers



Fixed Reader



Handheld & Mobile Reader

Sensor Tags



ST-676



ST-673

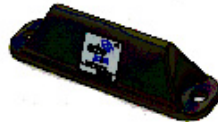
General Asset Management Tags



ST-656



ST-654



ST-604



ST-602

Security Tags



EJB-645



ST-675

Sample application:
Sentinel Device – High functionality

Commissioning

Device mounted on the door



Progress to Date

- ✓ Signed Partnership with HPH
- ✓ Signed Partnership with MTC.
- ✓ Signed partnership with MOL / Trapac.
- ✓ Signed partnership with Hong Ming Terminal & Stevedoring Co. (Yang Ming) in November 2005.
- ✓ Signed access agreements with Georgia and Virginia port authorities.
- ✓ Partnered with 79 Terminals globally--Partnerships combine for 20% of total global container handling volume.
- ✓ Several major shippers now under contract with shipment in progress

- We continue to expand our supply chain relationships worldwide.
- Market drivers for use of the Network continue to expand.
 - Shipper Demand
 - Seal Verification
 - Standards and Regulation
- The value of the network continues to grow exponentially through additional participation.
- We'd look forward to working with Ports to expand the Network for the benefit of our mutual customers.



THANKS!!
....and
QUESTIONS??