

***Partnering with
Marine Terminal Operators
to Provide Ocean Cargo Visibility
...and Supporting Cargo Security***

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Savi Networks Overview

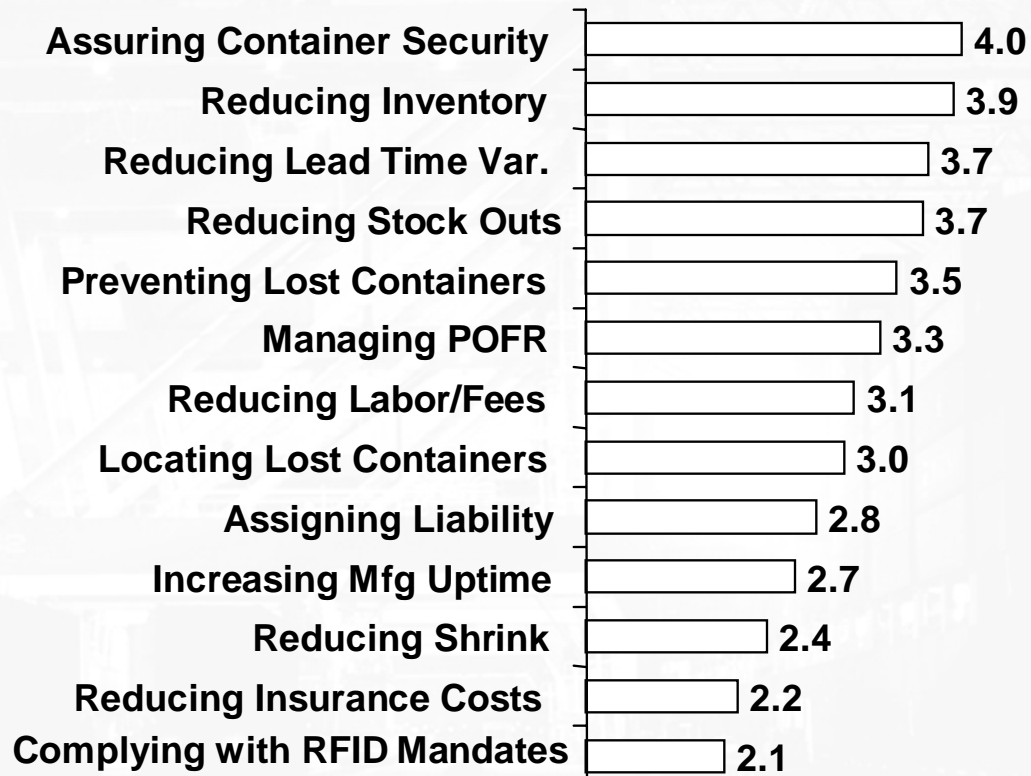
- **The challenge -- improved, automated visibility in commercial supply chain -- has been one of the chicken and the egg.**
 - Many different entities have to collaborate on network deployment
 - No one entity can make the network investment decision
- **Hutchison Port Holdings / Savi Technology (Lockheed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

Savi Networks

- Provides container and cargo location, identity, and status information services
- Partners with terminal operators, carriers, shippers, and their service providers
- Solution based on existing and emerging technical and industry standards
- The platform is open and extensible
 - Think the internet – the original backbone has provided a platform that others have built on top of, extended to private networks, and leveraged to provide better services to their customers

Market Drivers: Overview

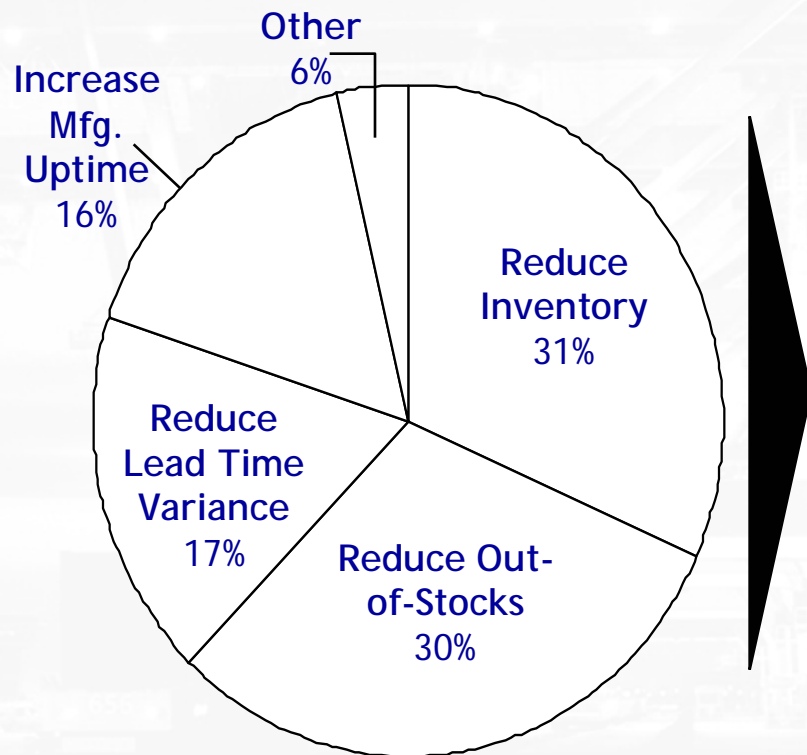
***Reducing Inventory and Assuring Container Security
are the most important issues supply chain executives are managing***



Source: A.T. Kearney interviews

Market Drivers: Supply Chain Efficiency

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

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Market Drivers: Beneficial Cargo Owner POV



Opportunity	Labor Cost Reduction	Inventory/PP&E Cost Reduction	Customer Service / Retention	Revenue Driver
Dynamic inventory allocation		✓	✓	
Distribution-center bypass		✓	✓	
Re-routing of spoiled/damaged goods		✓	✓	✓
PP&E reduction via the "floating warehouse"		✓		
Reductions in lead-time variability		✓	✓	
Re-routing of missed sailings			✓	✓
Improved manufacturing line up-time	✓			
Inventory reconciliation – labor and derivative costs	✓			
Seasonal/promotional freight automation	✓		✓	✓

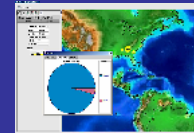
Savi Networks Business Model



- **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

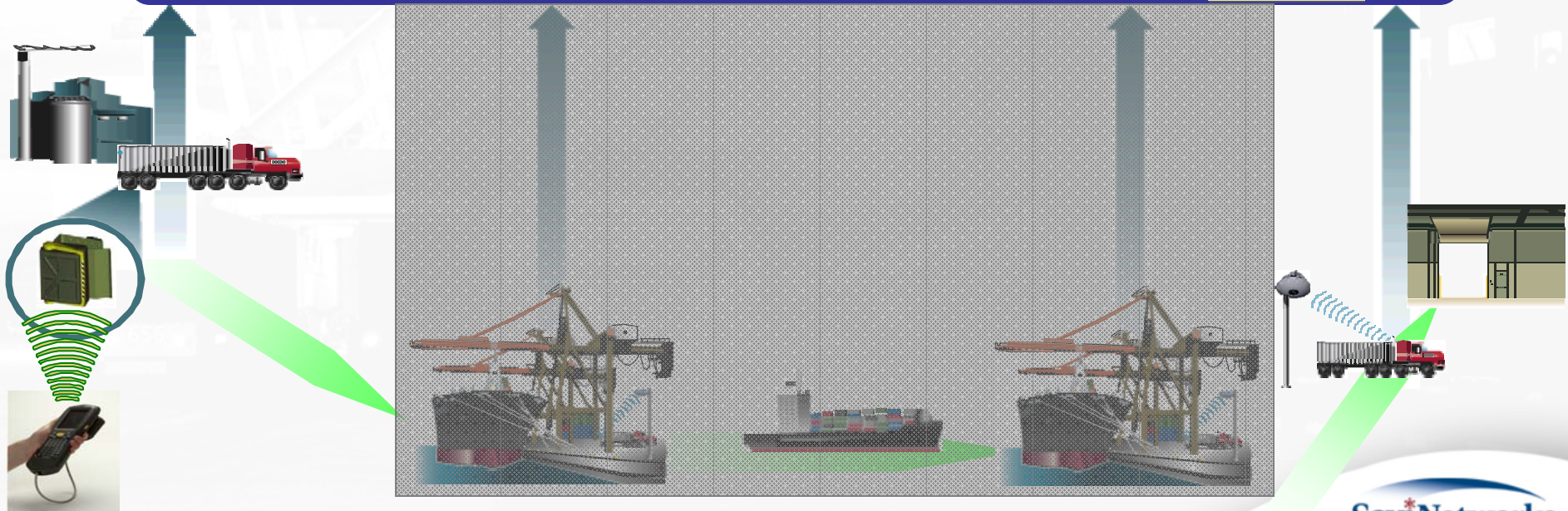
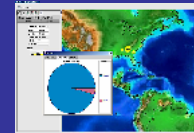
SaviTrak



Savi Networks - Solution

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

SaviTrak



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Network Deployment: In & Out Gates



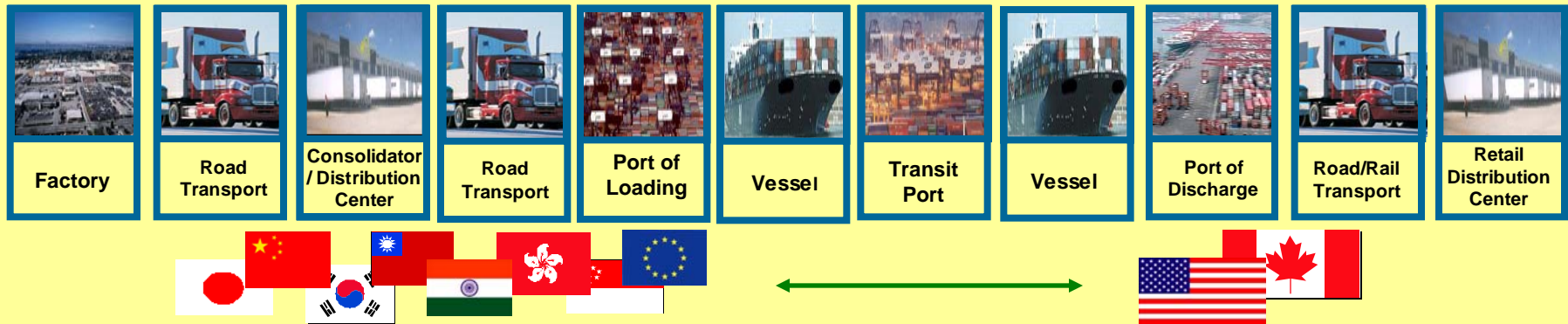
Network Deployment: Quay Cranes



Labor Reduction & Cost Savings from:

- 1) Audit trail and change of custody**
 - Insurance Savings
- 2) Automated Track & Trace**
 - Shippers
 - Carriers
- 3) Automated Seal Validation – Quay side & Gate In / Out**
- 4) Automated recording of sealing and unsealing events**
- 5) Complements other technology projects**
(Asset management, chassis tracking, OCR, etc.)

AUTOMATED DATA CAPTURE



Commercial Benefits

- Reduced inventory carrying costs
- Reduced inventory out-of-stocks
- Reduced lead time variance
- Increased manufacturing uptime
- Preventing theft
- Preventing lost containers
- Reducing administrative costs and fees

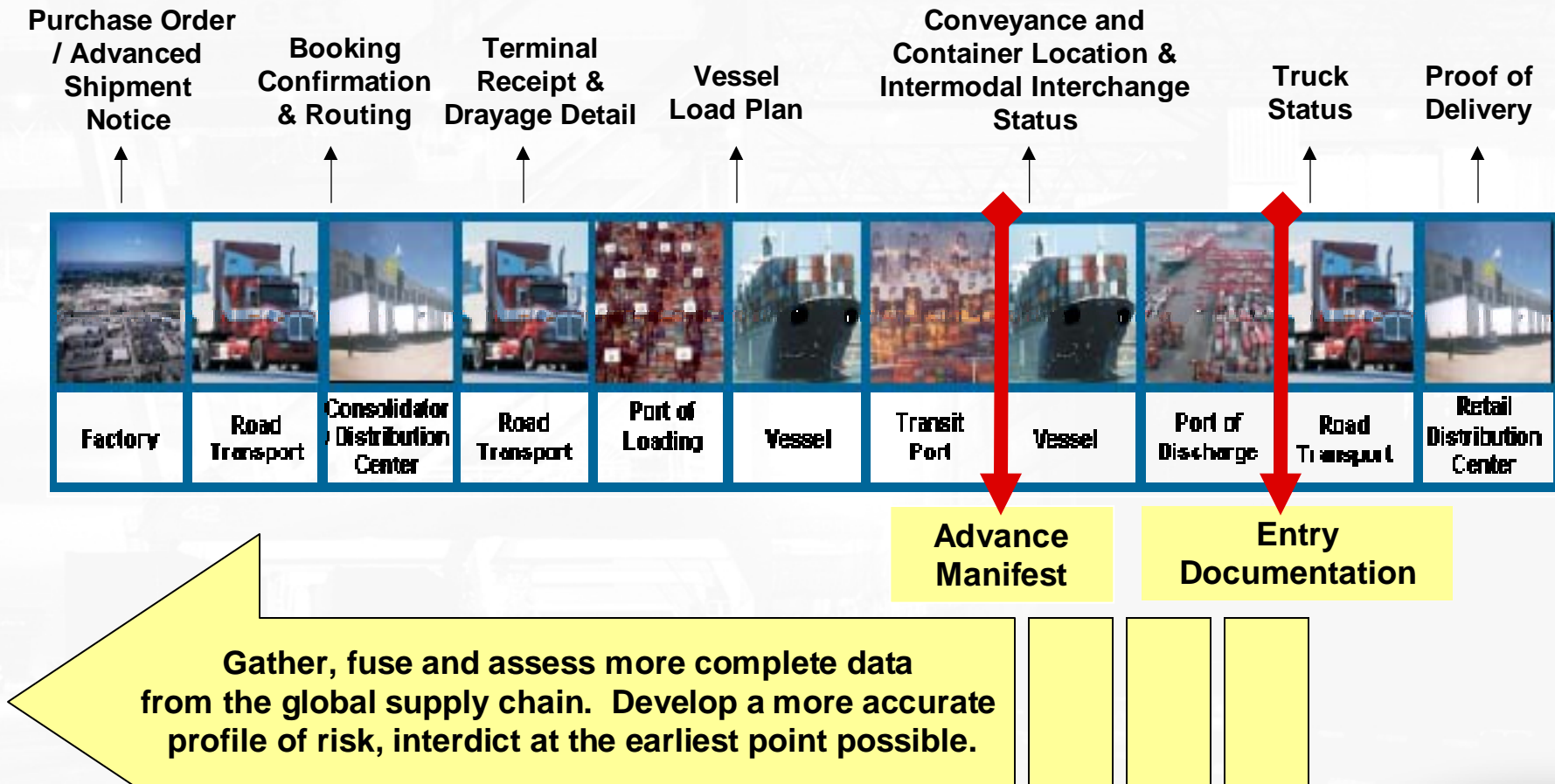
Enhanced supply chain security

1. Supply Chain Data for Risk Targeting
 - Immediate
 - Direct
 - Dynamic
 - Unique
2. Secure State Engine
3. Seal Verification

Supply Chain Data for Risk Targeting

Example: ATDI

ATDI is a partnership with the trade to identify advance information prevalent in today's supply chains that is capable of strengthening risk targeting efforts.



Secure State Engine



A “Security State Engine” is complex software that automatically manages the security status of a container in context to the actual physical transaction and the expected physical transaction.

Able to sift through the millions of data elements and segment containers into

✓ Secure ? Suspect X Tamper

- Security status is maintained via checks-and-balances between the device (e.g. e-seal) and network software system.
- Even if a device (e.g. eSeal) *is* damaged or removed

Anticipating SVR

- COAC Recommendations to DHS
 - All in-bound containers
 - To be verified by Carriers
 - Last inspected at Port of Departure prior to U.S. arrival
- World Customs Organization Framework of Standards (SAFE)
 - Seal Integrity Program

Many shippers will turn to electronic seal verification

- Standards-based: ISO 18185
 - Preparing for SVR, carriers and terminal operators have pushed ISO electronic seal standard to draft form
- No disruption to existing supply chain processes
 - Reduced labor for verification
 - Reduced/eliminates transmission & reconciliation errors
- Opportunity for far-ranging efficiency benefits



Thank you!