



# Biometrics Market Development for the Global Transportation Infrastructure

Enhancing Security and Improving  
Operational Efficiency

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- Headquartered in Boulder, Colorado
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  - Market Segmentation
  - Opportunity Sizing
  - Technology Evolution
  - Competitive Analysis
  - Target Profiling
  - Niche Penetration
  - Solution Effectiveness
  - Positioning, Messaging, Programs
- Products & Services: Analysis, Reports, Consulting



# Biometrics Market Development for Global Transportation

## *Security & Operational Efficiency*

- ☛ Market Drivers
- ☛ Mainstream Adopter Case Studies
- ☛ Cargo Transportation Opportunities
- ☛ Cargo Market Segmentation
- ☛ Inter-Modal Impact
- ☛ Maritime Cargo & the “Registered Provider”
- ☛ Global Maritime Initiatives
- ☛ Market Evolution

# Market Drivers

- ☛ Post 9/11 Transportation Security Frenzy
  - "Front End" Focus - Passengers, Baggage, Crew, Public Facility Staff
  - "Back End" Poses More Substantial Threat - Cargo, Logistics, Warehousing
  
- ☛ Increased Dependence on Complex Web of Interconnected Transportation Services
  - Acceleration of Cargo Flow Exacerbates Security Risks
  - Vulnerabilities Spread Throughout Interconnected-Network
  - "Choke Points" Crucial Links - Extremely Susceptible to Breach
  - One *Incident* Could Wreak Havoc – Create Virtual "Standstill"
  
- ☛ Gov't, Intl Orgs & Commercial Interests Highly Motivated
  - Specific Initiatives Recommending or Requiring Biometrics
  - Process improvement Drives Commercial Deployments
  - Biometrics "Ups The Ante" - Impetuous For Widespread Adoption
  - Data Management, Integration and Privacy Issues will be Resolved
  
- ☛ Streamlining The Supply Chain -> PROCESS IMPROVEMENT

# Mainstream Adopter Case Studies

Locations	Company/ Sponsor	Application	Biometric	Vendor/ Solution Provider	Status
Rotterdam	Rotterdam Seaport	Secure Access – Commercial Truckers	Hand	Recognition Systems	Deployment
Edmonton, Chicago, Toronto, Montreal	Canadian National Rail	Secure Access - Commercial Truckers	Finger	SAIC	Deployment
St. Louis	Union Pacific Railroad	Logical Access – Rail Car Release	Voice	Speechworks	Deployment
Canada/US Border	InterVISTAS	Border Crossing - Commercial Vehicles	TBD	unknown	Concept/ Strategy
Chicago	FAA, ATA, Sate of Illinois	Logical Access – Cargo Supply Chain	Finger	SecureCom	Pilot

# Market Opportunities

Problem	Conventional Solution	Issues	Biometrics Application
Theft - High Value Cargo	Inventory counts, restricted and secure access, surveillance, employee background checks, movement sensors	Relatively easy to breach	Identity Confirmation, Watch list, Vehicle/Facility Access, Logical Access
Contamination – Agricultural, Food, Pharmaceutical	Restricted and secure access, surveillance	Detection of tampering or contamination	Identity Confirmation, Watch list, Vehicle/Facility Access, Logical Access
Hijacking - Hazardous Material	Restricted access, surveillance, “known” shipper	Containment of material	Identity Confirmation, Watch list, Vehicle/Facility Access, Logical Access
Bombs - Conventional, Radiation, Nuclear	Restricted access, surveillance, “known” shipper	Originator identification, controlled access/tampering, detection	Identity Confirmation, Watch list, Vehicle/Facility Access, Logical Access
Smuggling - Drugs, Weapons, Explosives	Targeted security checks	Originator identification, controlled access/tampering, detection. Solutions ineffective to date I.e. US War on Drugs	Identity Confirmation, Watch list, Vehicle/Facility Access, Logical Access
Audit Trails	Manual system, confirmation based on licenses and shipment numbers	Cumbersome, human error, easy to fool or forge	Identity Confirmation, Logical Access

# Cargo Market Segmentation

Facilities – Airport, Seaport, Docks, Rail Yards, Warehouses, Border Crossings  
 Vehicles – Airplanes, Ships, Railcars, Trucks

Urgency of Solution	
●	Very High
■	High
◆	Medium
▲	Low

## Biometric Applications

**Physical Access**  
 employee, crew, suppliers

**Logical Access**  
**Secure Data**  
 personal, corporate, public

**Financial Transactions**  
 reservations, ticketing

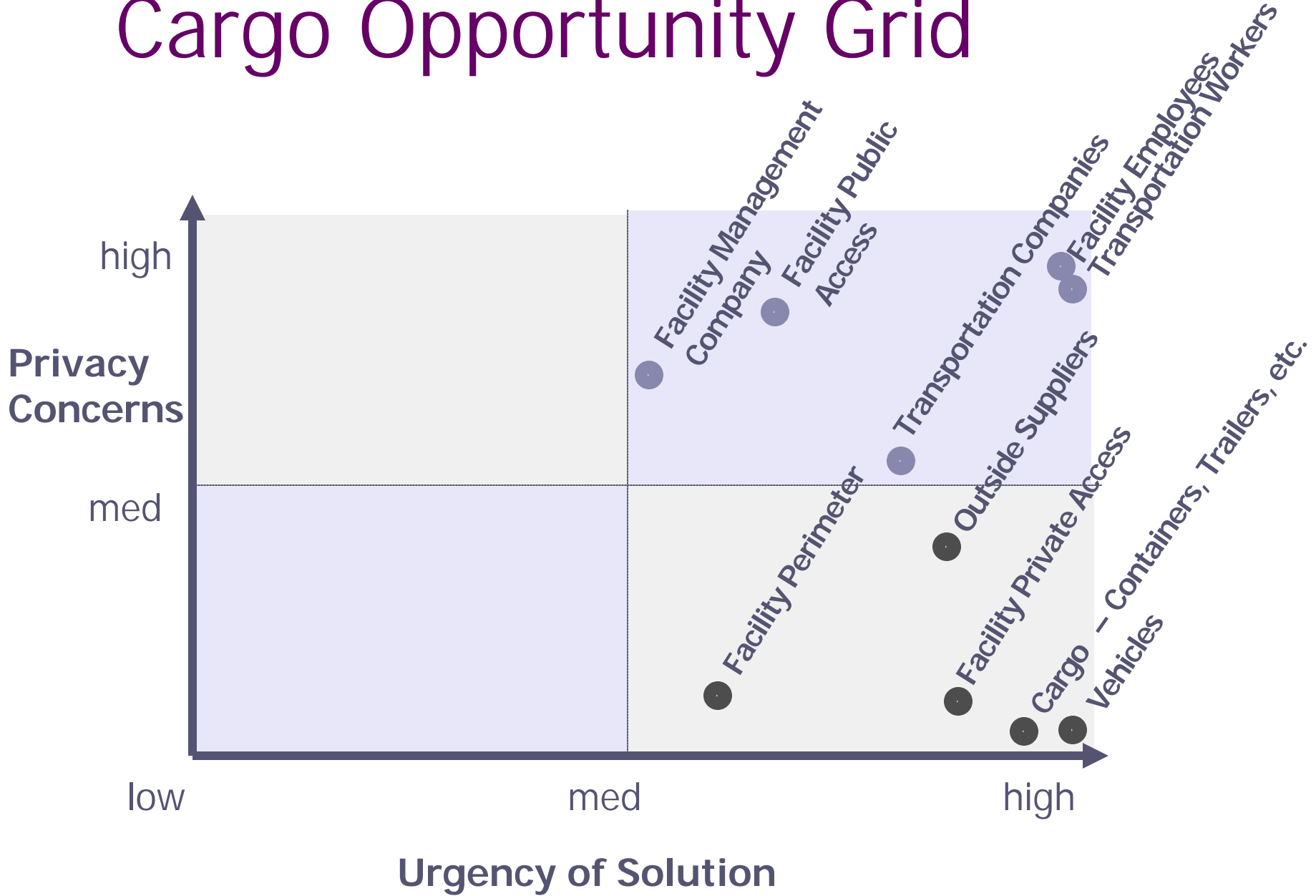
**Identity Confirmation**  
 passport, trusted traveler

**Time & Attendance**

**Surveillance**  
 public, private

	Facility Management Company	Facility Perimeter	Facility Public Access	Facility Private Access	Facility Employees	Transportation Companies	Transportation Workers	Vehicles	Cargo – Containers, Trailers, etc.	Contractors & Outside Suppliers
Physical Access	◆	●	▲	●	●	●	●	●	●	●
Logical Access	■	-	-	-	●	●	●	-	-	■
Secure Data	■	-	-	-	-	■	-	-	-	◆
Financial Transactions	■	-	-	-	●	●	●	-	-	●
Identity Confirmation	▲	-	-	-	◆	◆	◆	-	-	◆
Time & Attendance	■	■	●	●	●	●	●	■	■	●
Surveillance										

# Cargo Opportunity Grid





# Inter-Modal Networks

- Movement of goods via container using two or more transport modes
- One of faster growing sectors of industry
- Increased opportunities for compromising cargo integrity
- Severe gaps in traditional paper-based tracking & manifest systems
- RFID, electronic seals & GPS aid in tracking & monitoring access
- BIOMETRICS only technology to address non-repudiation, true accountability
- Biometrics **REQUIRED** to create Chain of Custody

# Maritime “Registered Provider”

- ☞ “Trusted traveler” allays public fear
- ☞ “Registered provider” addresses more pressing problem
  - Improves global security
  - Expedites cargo flow
- ☞ Maritime particularly vulnerable
  - 90% world’s cargo, 200 million containers
  - 16 million US containers, 6 million in seaports
  - Rotterdam handles 40% of europe's cargo

# Global Maritime Cargo Initiatives

## US Initiatives

- Customs Container Security Initiative (CSI)
- Customs Trade Partnership Against Terrorism (CT-PAT)
- TSA Port Security Assessments
- Port and Maritime Security Act (Amended)
- DOT Intelligent Transportation Systems (ITS)

## International

- World Customs Organization (WCO)
- International Maritime Organization (IMO)
- International Labor Office (ILO)

## Commercial

- Strategic Council on Security Technology's (SCST) "*Smart and Secure Tradelanes*" (SST)

# Market Evolution

- ✦ Biometrics only reliable method for authenticating individuals originating, loading, transporting, screening, clearing cargo
- ✦ Industry urgency provides near-term opportunities while governments & international organizations work standards
- ✦ Aggressive commercial players define de-facto standards
- ✦ Longer term fully-integrated biometrically enabled systems (along with RFID, electronic seals & GPS) for **reliable chains of custody and trust**



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