



***Northeast Supply Chain Conference and Exhibition (NECON)***

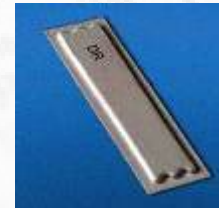
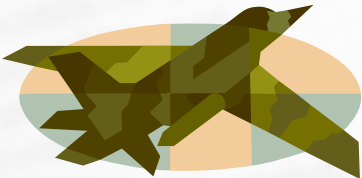
# **Is There ROI in RFID?**

*Boston Logistics Group, Inc.*

10/2/06

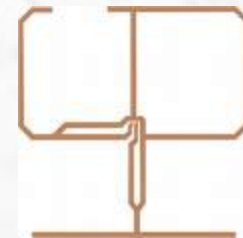
# In Use for 65 Years

- 1940s – Friend or foe
- 1960s – Electronic Article Surveillance (EAS)
- 1970s – Automated toll collection
- 1980s – Automatic Equipment Identification
- 1990s – Keyless entry, 1990s – Speedpass™
- 2000s – EPC, Smart cards, and more



# Important Distinctions

- **Active vs. passive**
  - Sensors: Temperature, Light, Humidity, Pressure, Vibration, Sound, Acceleration, Existence, Draw, Motion, Air exchange, Explosives, Location, Radioactivity
- **Read vs. read-write**
- **Finite vs. rechargeable battery**
- **Continuous vs. intermittent transmission**
- **Middleware vs. numbering systems**



# The Wal-Mart Mandate

## LOGMARS and EPC Mandates

- **2003 EPC standard**
  - Albertson's
  - Best Buy
  - Coca-Cola
  - Department of Defense
  - Gillette
  - Target
  - Wal-Mart



## Wal-Mart Current Status

- **Top 300+ suppliers → 600**
- **23,753+ tagged pallets**
- **663,912+ tagged cases**
- **5 million+ tag reads**
  - > 90% for cases on carts
  - 95% on conveyors in DCs
  - 66% on cases in pallets
- **RFID data available to suppliers within 30 minutes via extranet**

# Other Implementations

## Sample Deployments

- Chevrolet
- Good Shepherd Hospital
- Marks & Spencer
- MasterCard
- Pakistan passports
- Port of Long Beach
- Purdue Pharmaceutical
- Shanghai Masters Cup
- Tesco
- TNT Logistics
- UPS
- Velje bus terminal
- Virginia drivers license

## Used For:

- Tracking Equipment
- Tracking Inventory
- Deploying Labor
- Tracking Production
- Tracking Devices
- Monitoring Access
- Speeding Interactions
- Inter-Operating

# Many Application Areas

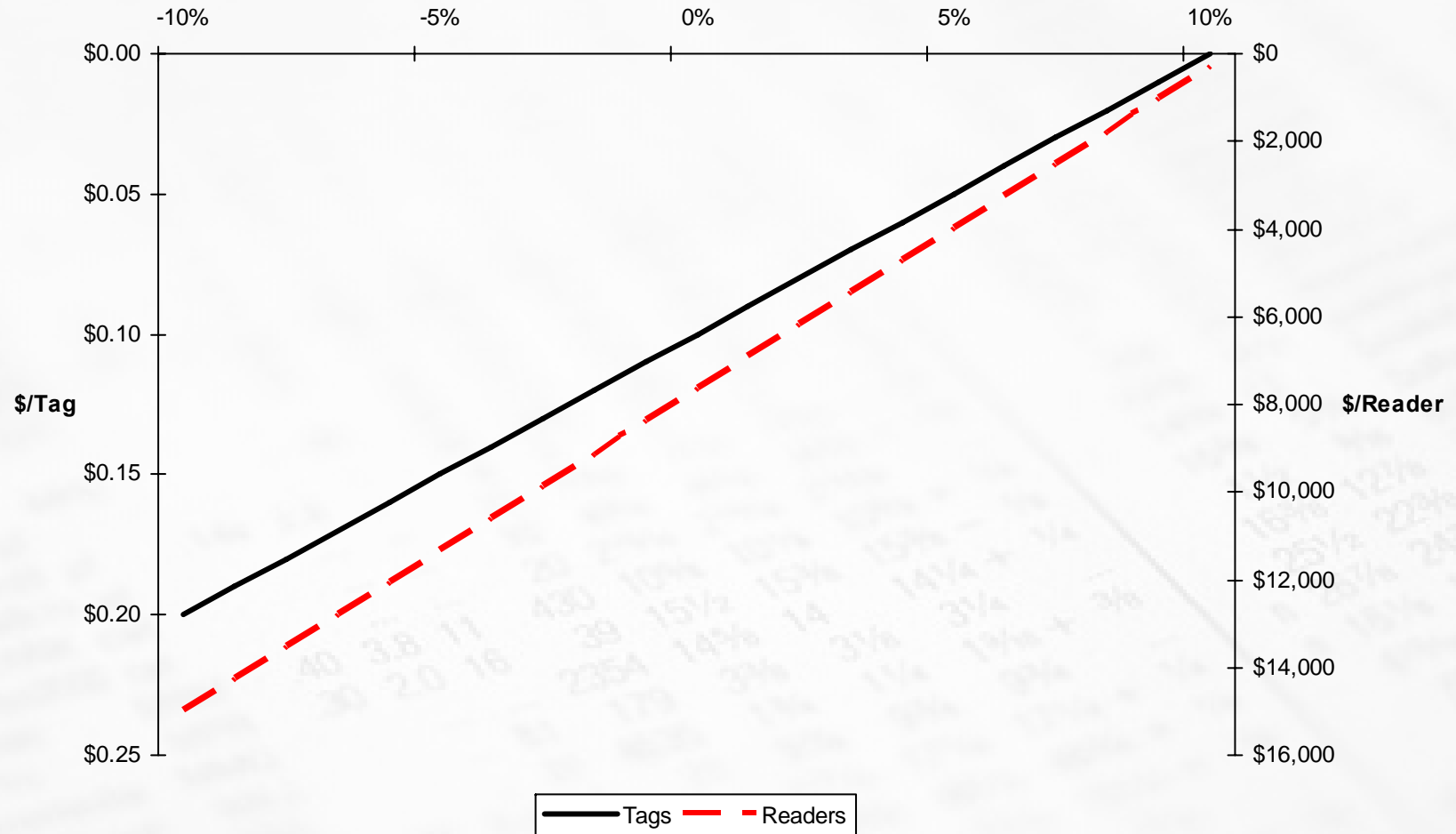
## RFID Applications and Benefits

Application	Benefit	Financial Metric
Track Equipment	Utilization ↑	ROA ↑
Track Inventory	Turns ↑	Working Capital ↑
Deploy Labor	Productivity ↑	Profits ↑
Track Production	Cycle time ↓	Revenues ↑
Track Devices	Availability ↑	Performance ↑
Monitor Access	Violations ↓	Claims/damages ↓
Speed X-Actions	Throughput ↑	Revenues ↑
Inter-Operate	Applications ↑	Revenues ↑

# Costs Will Decrease Substantially

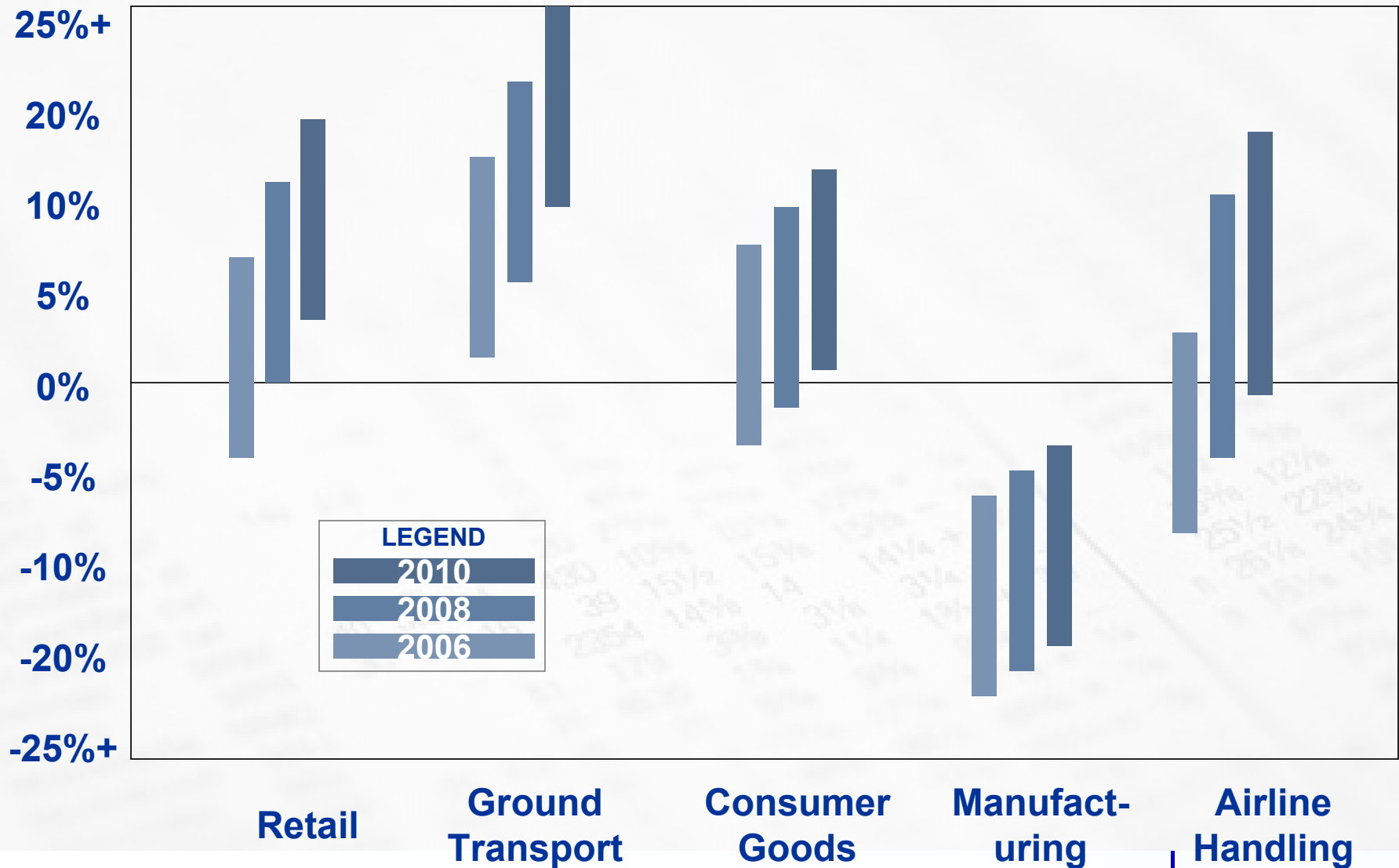
- **Tag costs decreasing**
  - Scale economies from a worldwide EPC standard
  - Fewer variations (Gen2)
- **Reader costs decreasing**
  - New suppliers, capacity
  - Learning curve
- **Systems integration costs increasing**
  - Tight labor markets
  - Visa restrictions

# Which Will Bring Positive ROIs





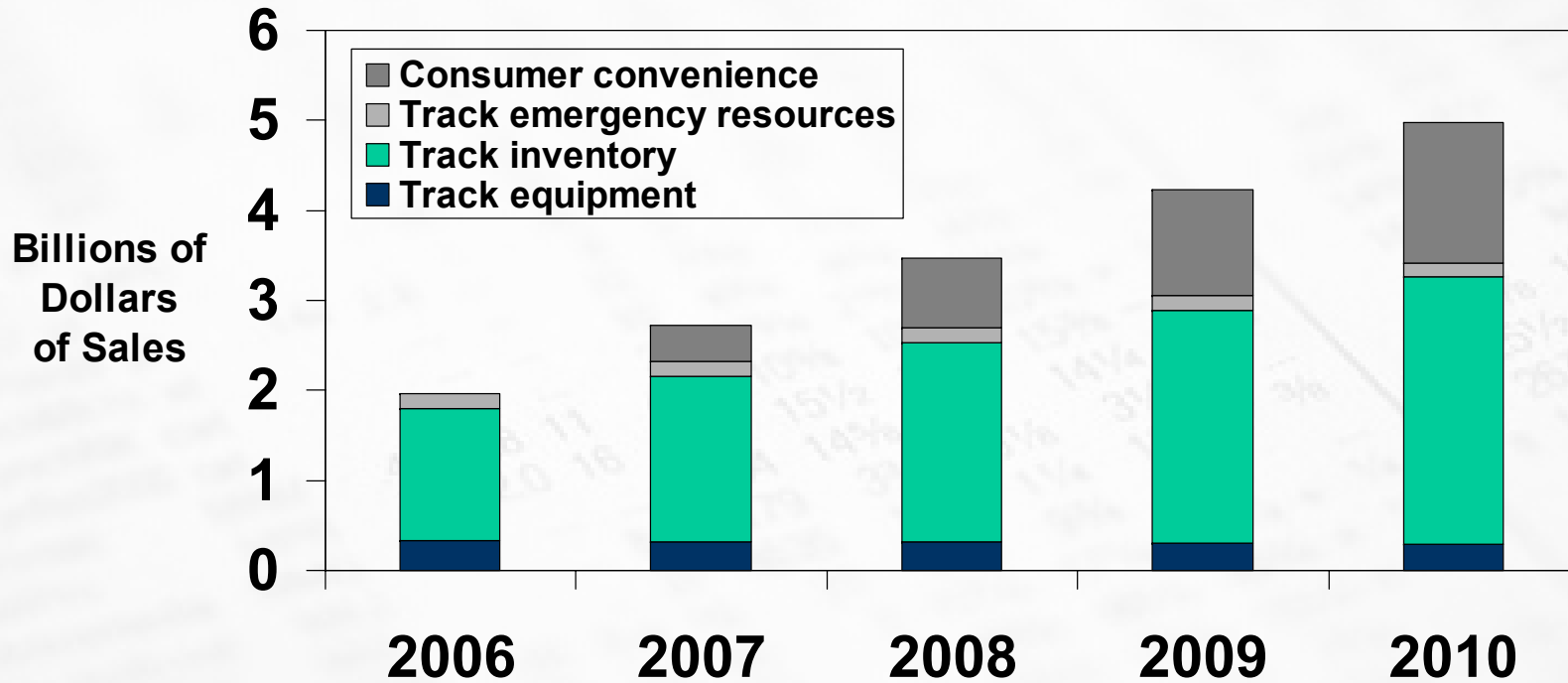
# ROI Will Vary by Industry, Application



# Past the Tipping Point

- Security imperative
- Lower costs

RFID Market Size



Source: Boston Logistics Group, Inc.

# Challenges

- **Competition with barcodes**
- **Unequal distribution of benefits**
- **Imperfect read rates**
- **Privacy concerns**
- **Systems integration cost**
- **Concerns over sharing data**
- **Difficulty of quantifying “soft” benefits**
- **Interference**

# Action Plan

- 1. Conduct a preliminary ROI assessment to verify that volume and scale warrant a pilot**
- 2. Launch a pilot to establish accurate cost and operational baselines**
- 3. Independently validate pilot success and expansion potential**
- 4. Deploy based on established standards**
- 5. Target and measure improvements in customer satisfaction and loyalty**

# About Boston Logistics Group

Boston Logistics Group helps supply chain executives make critical supply chain decisions that involve investment and risk by forecasting the evolution of supply markets and technologies. Our mission is to help our clients develop globally competitive supply networks that maximize Supply Chain Value.™ Our products and services include:

- **Market Forecasts** that help operations executives decide how, where, and when to buy critical externally-purchased materials and services
- **Technology Investment Evaluations** that help investors and policy makers quantify the benefit of emerging technologies and decide whether or not to invest in them
- **Custom Research and Planning** that supports high-stakes decisions such as acquisitions, outsourcing, off-shoring, and make-or-buy

## Industries Served:

- **Transportation:** Railroads, Ocean Shipping Lines, Airlines, Trucking Companies, Package Delivery, Intermodal
- **Logistics:** Dedicated and Third Party Logistics, Ports, Stevedoring, Storage, Material Handling, Distribution, Maintenance, Retail
- **Discrete Manufacturing:** Machinery, Equipment, Vehicles, Parts, Mechanical and Electrical Devices
- **Process Manufacturing and Conversion:** Paper, Pulp, Energy, Packaging, Processed Minerals/Aggregates, Plastics, Metals, Chemicals