Optimizing the Edge: Leveraging New Technologies to Improve Productivity and Operational Visibility

Presented by:

Mark Wheeler
Agenda

• e-Commerce Growth
  – Manufacturer’s View
  – Transportation & Logistics View
  – Retail View
• Technical Trends in Mobility
• The Industrial IOT and Manufacturing
• IOT Platforms and Mobility
E-commerce Continues to Grow Driving Changes Throughout the Supply Chain

- Higher % of retail sales
- Faster responses expected
  - Local & regional inventory growing
- Omnichannel is nearly universal
- Logistics evolving
  - Facility location
  - Operating Profiles
  - New fulfillment options
Retail View: Omnichannel Already In place or In progress Across the Board

Zebra Omnichannel Vision Survey
Retail View: Inventory Accuracy Must Improve

Q: “How accurate are your organization’s inventories today, how accurate do they need to be to handle the rise of omnichannel logistics?”

- Current Accuracy: 65%
- Optimal Accuracy: 73%

Zebra Omnichannel Vision Survey
Retailers are Shifting Execution Functions to Manufacturers. This is large and growing.

Q: “What percentage of your orders are drop-shipped from a manufacturer or other retailer on your behalf?”

Zebra Omnichannel Vision Survey

- Drop-shipped from other retailer: 34%
- Drop-shipped orders direct from manufacturer: 46%
Manufacturer’s view: Decrease Sales Through the Retail Channel with Growth in Direct Sales

Q: “What is your organization’s current sales channel mix? How do you expect this to change in the future?”

- Retail stores: Current Sales Channel % 22%, Sales Channel % (In Five Years) 19%
- Distributors: Current Sales Channel % 19%, Sales Channel % (In Five Years) 19%
- Manufacturer owned store or outlet: Current Sales Channel % 12%, Sales Channel % (In Five Years) 15%
- Online manufacturer ecommerce site: Current Sales Channel % 12%, Sales Channel % (In Five Years) 15%
- Online marketplaces/store (e.g., Amazon, Alibaba): Current Sales Channel % 9%, Sales Channel % (In Five Years) 12%
- Multi-channel retailers (e.g., Walmart): Current Sales Channel % 9%, Sales Channel % (In Five Years) 8%
- Multi-brand online retailers (e.g., Zalora): Current Sales Channel % 7%, Sales Channel % (In Five Years) 7%
- Independent online stores: Current Sales Channel % 7%, Sales Channel % (In Five Years) 7%
T&L 3PL View: Planning and Execution Challenges Abound

- Reducing backorders: 73% (1), 15% (2), 12% (3)
- Inventory allocation: 32% (1), 51% (2), 17% (3)
- Replenishment efficiency: 26% (1), 33% (2), 41% (3)
- Packing efficiency: 34% (1), 41% (2), 25% (3)
- Fill rate: 42% (1), 36% (2), 22% (3)
- Order cycle time: 31% (1), 35% (2), 34% (3)
- Freight costs: 36% (1), 29% (2), 34% (3)
- Service levels: 16% (1), 44% (2), 40% (3)
- Customer service: 24% (1), 33% (2), 43% (3)
- Order accuracy: 20% (1), 28% (2), 52% (3)
- Failed first time deliveries: 8% (1), 56% (2), 37% (3)
- Driver and labor recruitment: 11% (1), 24% (2), 65% (3)
- Labor shortage in warehouses/fulfillment centers: 14% (1), 31% (2), 55% (3)
- Flexible operations to meet peak fluctuations: 16% (1), 26% (2), 58% (3)

Zebra Omnichannel Vision Survey
Enterprise Mobility Tech Trends:

• Migration from Windows to Android
  – End of extended support 2020
  – Growth in Android form factors
  – User Experience transition a challenge for many Warehouse & Plant installations

• Growth in passive RFID
• Growth in active location solutions
• Sensor Fusion + Analytics + Mobility = Operational Visibility
LIFEGUARD™ FOR ANDROID™

Extend the lifecycle of Android enterprise mobile computers

Add years of OS security support
Match the enterprise hardware lifecycle
Significantly lower your TCO

More than 51% of businesses* want their mobile devices to last longer than five years.

* Source: Zebra Survey
Security and Support are Key Capabilities for the Transition to Android in the Enterprise.

<table>
<thead>
<tr>
<th>ENHANCES MOBILE COMPUTER SECURITY</th>
<th>EXTENDS THE DURATION OF SECURITY SUPPORT</th>
<th>SIMPLIFIES SECURITY SUPPORT DURING OS TRANSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive and predictable monthly/quarterly security patch updates</td>
<td>Security lifecycle of 5-7 years</td>
<td>Legacy OS security support while transitioning to newer OS</td>
</tr>
<tr>
<td>Updates are deployed at customer’s discretion</td>
<td>Security patches two years beyond mobile computer end-of-sale</td>
<td>Migrate at your own pace</td>
</tr>
<tr>
<td>Easy to install updates locally or remotely via Enterprise Mobility Management (EMM)</td>
<td>Longer-term options are available</td>
<td>You are never forced to accept an OS update</td>
</tr>
</tbody>
</table>

THIS IS HOW TO SECURE AND EXTEND YOUR ENTERPRISE MOBILE COMPUTER INVESTMENT.
User Experience Transition is an ongoing Challenge for Most Warehouse & Plant Installations

• How to take advantage of touch-optimized devices in your operation:
  – Green-screen on touch
  – Ivanti: All-Touch Terminal Emulation
  – Staylinked
  – Browser or App
• Enterprise solution support:
  – Manhattan Touch Warehouse for WMOS
Manufacturers Top Strategies for Growth

Top Business Strategies for Growth

- Increase Total Production
- Adjust to Fluctuating Demand
- Increase # of Product Variants
- Increase Visibility to Enterprise
- Decrease Production Costs

Zebra Manufacturing Vision Survey
Expected Benefits from IIoT?

Benefits of Industrial IOT

- Optimizing Production
- Improved Quality
- Visibility to Operations
- Production Flexibility
- Connecting Production Systems

Zebra Manufacturing Vision Survey
Inhibitors to IIoT Deployments?

Barriers to Industrial IOT

- Complexity of Technology
- IT Resources
- Security Concerns
- Budget
- Wireless Infrastructure

Zebra Manufacturing Vision Survey
Top Plant Operation Technologies - Next 5 Years

Technology Expansion Plans

- Mobile Technology
- Big Data
- Location Tracking
- IIoT
- Wearable Tech
- RFID

Maintain
Grow

Zebra Manufacturing Vision Survey
Plant Operations: OT and IT Convergence

- OT responsible for plant control systems
- IT responsible for enterprise planning and execution systems
- Separate organizations & budget
- Different technology and focus
- Technology forcing convergence:
  - Cloud connected sensors
  - Data Sharing beyond line & plant
  - Plant control vs. enabling visibility
Systems of Record to Systems of Reality

Enterprise Computing 1990 - 2020

WHAT SHOULD BE HAPPENING
- Systems of Record
  - PCs
  - ERP
  - Network

WHAT'S REALLY HAPPENING
- Systems of Engagement
  - Smart Phones
  - SaaS
  - Public Cloud

- Systems of Reality
  - Smart Sensors
  - Analytics
  - Hybrid Cloud
Location Solutions are an Important and Growing Driver of Operational Visibility

The challenges:
1. Identify the compelling process or workflow benefit or need.
2. Choose the right technology(s) supporting the process or workflow.
3. Operators have multiple workflows and use cases may require different technologies.
Enterprise Asset Intelligence Solution Stack

- **MOBILE**
  - APPLICATIONS
- **HYBRID CLOUD**
  - ANALYTICS
  - DATA SHARING, ACCESS & STORAGE
  - DEVICE/ON-PREMISE CONNECTORS
- **EDGE**
  - SOFTWARE DATA CAPTURE (ON DEVICE/ON-PREMISE)
  - PRODUCT HARDWARE

- **EXTERNAL INFORMATION SOURCES**
- **LEGACY SYSTEMS OF RECORD**

- 3rd Party Device/Sensors
Key Takeaway’s:

• Omnichannel growth is driving ongoing evolution of manufacturing, transportation and retail supply chain practices.

• New, innovative and easy to use mobile technology solutions are challenging end users and application providers to transition to new technology platforms.

• The Internet of Things is growing in importance. IOT platforms are emerging that leverage connected intelligent end points and provide both asset management capabilities and sensor-fusion platforms for: connectivity, security, data capture and analytics.
For More Information:
Speaker email: m.wheeler@zebra.com
Website: www.zebra.com

Visit Booth 2115 and Booth C2753 in the IoT/Smart City Pavilion