Manufacturing – Market space, barriers to entry & opportunities

Glenn Sayer
Principal Sales Engineer
Software Specialist MFG NA
Manufacture Industry Segments

- Staff Communications & Management
- Mobile Operator
- Traceability & Quality
- Safety & Environmental
- Asset & Facility Management
- Warehouse & Materials Management
- Field Sales Automation
- Fleet Management & Delivery Operations
- Field Service Automation
- Wireless Communications Infrastructure
- Security and Resiliency
- Device & Infrastructure Management
Key Manufacturing Pain Points

- Workflow Integration
- Data segregation
- Application integration
- Globalization
- Regulations
- Tracking – Monitoring
- Legacy Applications, Devices, OS’s
- Resource Utilization
- Agility
- Supply Chain Complexity
- Visibility
Transforming Manufacturing

SIMPLIFY OPERATIONS - EFFICIENCY

- **Flexible manufacturing enablement** – from static to dynamic replenishment through real-time visibility into upstream demand across end-to-end supply chain
- **Process visibility** – from static production planning to visibility-driven dynamic flow and resource optimization to increase capacity utilization

KNOW MORE ABOUT YOUR BUSINESS AND CUSTOMERS – VISIBILITY

- **Product quality** – from reactive product quality fixes (i.e., repair, recall) to proactively minimizing number of defective products that end up in the hands of consumers
  - automated sensors (e.g., machine vision) to find hard-to-detect errors
  - traceability solutions to quickly identify source of defective components

EMPOWER MOBILE WORKERS - PRODUCTIVITY

- **Multi-modal operators** - from manual / paper-based processes to intelligent picking and replenishment solutions with true multi-modal operation (voice, data, video)
- **Workflow optimization** – from static instructions to dynamic workflow management based on real-time information from connected operators, technicians, and machines
Applications driving Mobile Computing

Q: “Which line-of-business applications are the main drivers for your mobile computing deployments?”

- Delivery (proof of delivery, pick-up or DSD) - 57%
- Inventory / Supply Chain Management - 55%
- Asset Tracking - 43%
- Customer Relationship Management (CRM) - 38%
- Customer / Consumer-Facing Interaction - 37%
- Field Service - 31%
- Mobile Point of Sale (with payment accessory or sled) - 30%
- Field Sales / Salesforce Automation - 29%
- Workforce / Task Management - 25%
- Manufacturing / Production - 25%
- Facility Management - 24%
- Asset Management / EAM / Fleet Management /... - 24%
- Collaboration / Project Management / Manager... - 22%
**Key Issues Addressed By IoT Solutions Vary By Industry**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Manufacturing</th>
<th>Retail</th>
<th>Transportation</th>
<th>Healthcare</th>
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</thead>
<tbody>
<tr>
<td>Tracking a person’s status</td>
<td>56%</td>
<td>57%</td>
<td>44%</td>
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<td>Tracking transactions</td>
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<td>37%</td>
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<td>New asset purchasing</td>
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<td>Fleet management</td>
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<td>Labor utilization</td>
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<td>46%</td>
<td>31%</td>
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<td>Security or surveillance</td>
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<td>54%</td>
<td>41%</td>
<td>37%</td>
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<tr>
<td>Theft of objects or assets</td>
<td>62%</td>
<td>60%</td>
<td>28%</td>
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<td>Supply chain visibility</td>
<td>21%</td>
<td>46%</td>
<td>31%</td>
<td>14%</td>
</tr>
</tbody>
</table>

"Which of the following issues, if any, would your organization address by implementing Internet-of-Things solutions?"
Manufacturing Trends

- Locationing
  - RFID, BLE, NFC, Wireless, Tags, GPS, Mapping

- Data Capture
  - BT, NFC, Scanning (1D/2D), OCR, RFID, Voice

- System Software
  - WHM, ERP, T&A, HMI, …
  - SAP, HighJump, JDA, Oracle, Epicor, Rosemount, Kronos, ADP, …
  - Home grown

- Resource
  - Training, Monitoring, Job Tracking, Time Attendance

- Connectivity
  - LAN, WLAN, WWLAN, BT, Serial, DEX, Voice, always connected

- Output
  - Printing, RFID, parts marking

- Legacy
  - Terminal Emulation, DEX, WM, CE, DOS, key based

- Software Trends
  - HTML, Web services, Voice, Android, faster turn, OS agnostic, Touch
Manufacturing Opportunities of Tomorrow

• Migrating to the next OS/Device
• Locationing
• Improved User Experience/Interface
• Internet of Things (IoT)
• Visibility
Questions
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