More Than The Robot
How new fulfillment solutions empower employees and drive efficiency at Lockheed Martin

Presented by:
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Agenda

- What drove Lockheed Martin to invest in the most recent advancements in fulfillment technologies
- Lockheed Martin’s unique requirements and challenges
- Collaborative robotics in the defense supply chain of the 21st century
- The faster fulfillment story
- Future vision
BUT FIRST…..

A LITTLE FUN
NEW TRAILER
Lockheed Martin maintains the U.S. Air Force’s Industrial Product-Support Vendor (IPV) contract which manages all supply chain items for production depot maintenance activities at the 3 primary USAF Air Logistics providing worldwide engineering, maintenance and logistics management for all USAF fighters, transports, missiles and munitions.

So Why Top Gun???
Jet Fighters = Parts! A lot of parts!
616,350,000 parts
Lockheed Martin Supply Chain Challenges

- Complex dynamic work environments
- Significant security requirements
- Workforce personnel issues
- Non-standardized processes
- Inventory validity issues
- Inconsistent productivity
- Poor metrics definition capability
Leading The Way To Faster Fulfillment

2015
founded by ex-Kiva executives

30+
customers globally

50+
sites under contract in US, Canada, and Europe

170+
employees

+1M
units fulfilled every week

part of leading global commerce company Shopify
Design Fundamentals

*It’s about your associates and your operations*

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<th>Empower the operator</th>
<th>We believe people play the central role in successful operations</th>
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<td>Enhance every scan</td>
<td>Improve operations with intuitive products built on an intelligent platform</td>
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<td>Flexibility then productivity</td>
<td>Our products provide continuous value while adapting to change</td>
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<td>Data informed decisions</td>
<td>We use data as the foundation, then apply common sense</td>
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1 **INDUCT**
Smart allocation groups similar work to reduce associate travel. Autonomous loader places the totes for the assignment onto Chuck.

2 **MEET**
Chuck eliminates the long walk by bringing the work directly to the associates in the active area.

3 **PICK**
Chuck leads the associates through their assigned tasks.

4 **PACK**
Inspect and pack orders for shipment. Chuck can sort exceptions and deliver completed assignments to different points across the warehouse.

**How Chuck makes the task faster**
- Directed
- Lights
- Images
- Scanner
- Hands-free

**ACTIVE PICK AREA**

**MODEX 2009**

**POWERED BY POSSIBILITIES.**
Outcomes

- Ease of installation
- Defined & standardized the supply chain process
- Rapid training and worker acceptance
- Increase from 16 to 77 LPH in 6 weeks (481%)
- Inventory validity from 66 to 99.98%.
- ROI in 9 months with estimated savings of $1.5M
- Developed a “Warehouse of the Future” for collaborative robotic supply chain R&D.
Future Vision - Flightline of the Future

Aircraft Availability
- GROUND REFUEL
- ORDNANCE LOAD
- AUTONOMOUS LIFT/TRANSPORT

Sortie Generation
- MAINTENANCE OPERATIONS
- FIELD MAINTENANCE

Flightline Management/C2
- Ubiquitous COMMs
- Common Data and Modeling Infrastructure

Ground Operations
- MAINTENANCE DATA
- ROBOTIC LAYERED ANALYTICS
- SCM SUPPORT/AIT

A/C Repair

Ownership Costs
- SUSTAINMENT MGMT
- MAINTENANCE MANAGEMENT

Diagnostics/Prognostics

Future Vision - Flightline of the Future
Autonomous Systems Roadmap

- 2020
  - SMSS
  - ExoSkeleton
  - AMAS/Aplique'
  - P-791
  - Stalker
  - Indago
  - Manta UUV
  - FURY
  - Marlin
  - KMAX
  - UAV

- 2025
  - Mars
  - UCLASS
  - ROVER
  - VTOL UAV

- 2035
  - FALCON

POWERED BY POSSIBILITIES
“Talk To Me Chuck!”

Thank You.
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