BRIDGING THE LABOR GAP IN YOUR DC

Presented by:
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Industry Challenges — Labor Availability

- Mega-DCs in remote locations struggle to attract enough low-skilled workers, who largely live in urban areas.
- Smaller urban DCs face fierce competition for labor.
- Unskilled workers don’t need or want warehouse jobs. Their unemployment rate was an unprecedented 3.2% as of September 2019.
- Current government policies have sharply reduced the number of new immigrants, choking off a key pipeline for new warehouse labor.

6:1
Industry growth outpaces the labor pool by a ratio

36%
Annual turnover rate for warehouse workers

80% of DCs
Manual operation is today’s norm
Industry Challenges — Labor Challenges

- Cost to rehire ranges from 25–150% of an employee’s annual salary.
- Five injuries per 100 full-time warehouse workers — over 50% higher than overall average.
- Repetitive motion injuries cost employers $80 million annually.
- Wages for DC laborers are increasing by 6.8% per year — triple the rise in other industries — with an average wage of $13.30 an hour.
Industry Challenges — Consumer Demand

- Increased pressure to deliver in a short amount of time with cutoff times being stretched later
- Proliferation of delivery and pickup locations
- Increased volume of small packages and irregulars

**Industry Driver Highlights**

E-commerce Fulfillment  
Ship to Consumer  
**YoY % '18 Holiday**  
18%

**Click-to-Door Speed (days)**
- All merchants (excluding Amazon)

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2.4M OPEN JOBS BETWEEN 2018-2028

The skills gap may leave an estimated 2.4 million positions unfilled between 2018 and 2028.

2.69M jobs open from retirements

1.69M new jobs due to natural growth

4.6M manufacturing jobs to fill from 2018 to 2082

Only 2.2M jobs are likely to be filled

2.4M (53 out of 100) open positions lie vacant due to skills shortage in the U.S. manufacturing industry.

Sources: Bureau of Labor Statistics, Manufacturing Institute, Deloitte
Infographic courtesy of Universal Robots
Robots’ Impact on Human Jobs

“Firms’ inability to stay competitive, not robots, is the biggest threat to American jobs.”

With more jobs available than job seekers and increased difficulty in finding qualified employees, it is no wonder why robots are being utilized more in the manufacturing industry as a solution to the job gap.
Robotic Solutions to Augment Available Labor
Robotic Sorter Induction

• Automates the manual sorter induction process
• Handles a variety of package sizes, including polybags, jiffy packs and boxes
• Frees limited labor from monotonous positions
  – Autonomous solution that can replace and/or supplement manual induction
• Ensures proper function of mission-critical sortation systems
  – Robot vision scans item and instructs flipper unit to ensure label faces up
• Maximizes throughput and sorter utilization
  – Loads as many sorter trays as possible
Robotic Truck Unloader

Designed for physically demanding and undesirable jobs in trailer unloading workflows

- Remove operator from hot, dirty, dangerous/injury-prone operation
- Operations remain outside of the harsh/dangerous environment, letting the robot do the hard work
- Operator lines up robotic unloader and places it in autonomous mode
- Operators can provide additional high-value activity while monitoring the machine
- Machine operates autonomously
  - Trailer and load characteristics analyzed
  - Robotic arm reaches for stacked cases while ‘nose’ conveyor sweeps off the floor of the trailer
  - Integrated unscrambling case conveyor delivers stream of product for induction to other processes
- Once unloading process is complete, the robotic unloader indexes back out onto the receiving dock
Robotic Order Fulfillment

• Robotic technology used to pick items for order fulfillment
  – Improved order accuracy
  – No need for breaks
  – Picks a wide variety of items
  – No pre-training of SKUs required
  – Grasp detection optimizes picking
  – Easy integration with WMS and auxiliary systems

• Can perform many perception and grasping tasks with minimal human assistance
Solutions to Bridge Skill and Technology Gaps
Virtual Reality Training

- Addresses operational skills gap
- Virtual hands-on experience
  - Frees up machine for live production
  - Safe offline experience
  - Accommodates staff changeover
  - Saves travel costs
  - Training on-demand
- Training
  - Virtual hands-on experience
  - Step-by-step instructions for all operations
  - Equipment operation information
  - Perform equipment operation
  - Reference videos for equipment operation
Augmented Reality — Helping Maintenance

Hands-free augmented reality
“See what I see” troubleshooting
Quickly diagnose critical issues
Control system integration

Decrease unplanned downtime
Reduce required maintenance skills
Subject matter expert access from anywhere
Reduce costly travel for on-site experts

SHOW ME
DON’T TELL ME
TechSight User View

Touch Navigation
Navigate cards and select items with the device’s touch controls.

Voice Navigation
Speak to navigate cards and select items.

Hands-Free
Follow voice direction while keeping two hands available for a safe work environment.

Offline Support
Applications and data are cached offline so work can be done without network connection.
TechSight Expert Side

**Document Sharing**
Clip and share snippets from PDF documents directly to smart glasses.

**Telestration**
Annotate on snapshots and document snippets and synchronize to smart glasses in real time.

**Messaging**
Send messages from Skylight Web to smart glasses.

**HD Audio and Video**
Bi-directionally stream up to 720p HD video and audio.

**Remote Zoom**
Remotely zoom smart glasses.

**Remote Snapshots**
Remotely take snapshots from smart glasses.
Voice Solutions — Maintenance and Guided Workflows

Greater efficiency from enhanced picking compliance, streamlined data collection and removing manual data entry

Improved accuracy by eliminating transposition errors and recording information at the time of observation

Provides near-real-time visibility into operations information, plus the ability to quickly adapt to workflow changes

Increases employee satisfaction and retention while reducing training time for new employees
Preventative Maintenance Inspection

Challenges

Documenting inspection and maintenance processes is time-consuming and error-prone.

Workers are continually interrupted with multi-step paperwork and data entry procedures.

Hardware is not well-suited for dirty, hands-busy environments.

Sensors and smart solutions are expensive to adopt and complex to implement.
Robotic Solutions to Collaborate With Available Labor
Mobile Robotic Solutions — Human-Robot Collaboration

- Each/Case/Pallet Picking
- Receiving and Put-away
- Cross-docking
- ASRS/VLM Induction
- Staging and Consolidation
- JIT and Line Replenishment
- Raw Material and WIP Movements
- Returns Disposition
- Material Recycling
- Cycle Counting and Physical Inventory
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Key Takeaways

• Robots are becoming essential partners that free up labor for higher-value work due to the growing labor gap.
• Automation is now essential to staying competitive.
• Robotic solutions and other technologies are being used to support the workforce transition.
• They’re improving operations today in three key ways:
  – Augmenting available labor
  – Collaborating with your workforce
  – Bridging skill and technology gaps
Questions?
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