

Mobile Technology and Machine Learning Tools for Supply Chain, Distribution and Production Management

Presented by:
Debbie Baldwin



POWERED BY **POSSIBILITIES.**





Who Am I?

Debbie Baldwin is a Senior Product Manager at Acumatica.

In this role, she draws upon over 32 years of industry experience to ensure that Acumatica meets the needs of internal and external stakeholders. She has been working in the software industry for 17 years and has both implemented and managed various software packages.

Prior to this, Ms. Baldwin spent 15 years in Manufacturing working as an ERP User and Project Manager. Her other responsibilities varied from Application Support Specialist, Cost Accountant, Industrial Engineer, and Controller.

Agenda



Digital Transformation

- Industry 4.0
 - Industry 5.0
-



Current Industry Dynamics

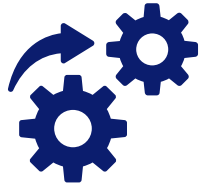


Mobile



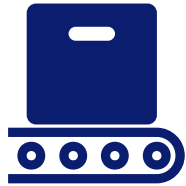
Artificial Intelligence (AI) and Machine Learning

Industry 1.0 to 4.0



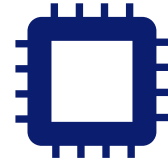
INDUSTRY 1.0

Mechanization, steam power, weaving loom



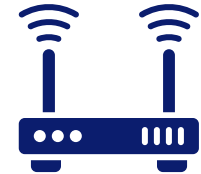
INDUSTRY 2.0

Mass production, assembly line, electrical energy



INDUSTRY 3.0

Automation, computers and electronics



INDUSTRY 4.0

Cyber Physical Systems, internet of things, networks

Industry 5.0

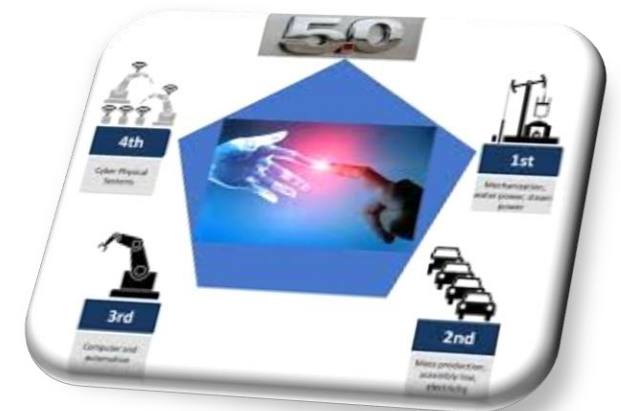
“ Industry 5.0 will focus on the cooperation between man and machine, as human intelligence works in harmony with cognitive computing.

By putting humans back into industrial production with collaborative robots, workers will be upskilled to provide value-added tasks in production, leading to mass customization and personalization for customers.

”

Disruptions:

- Personalized human touch
- Manufacturing competitiveness
- Collaborative robots
- Customized customer satisfaction



Digital Transformation...

... is the change associated with the application of digital technology in all aspects of human society.

Digital Transformation is Key to Competitiveness



85% of enterprise decision makers feel they have a timeframe of two years to make significant inroads on their digital transformation before suffering financially or falling behind their competitors.



“Digital Business Transformation: Trends, Statistics, & Case Studies”
Apiumhub

Current Industry Dynamics

1

Shifts in buyer behavior

- Customer rejection of high capital cost purchases
- Introduction of smart equipment
- Increasing personalization
- New charging models

2

Operating complexity & costs

- Low volume, engineer to order products
- Design for 'circular' economy & re-manufacture
- Visibility of global operations

3

Service innovation

- Products to services model shift
- Profitability of service business
- Employee recruitment, training & productivity

4

Complex supply chain

- Orchestrating production across co-manufacturers
- Supplier visibility & collaboration
- High MRO inventory / stock-write-offs

5

Project & customer profitability

- Unprofitable projects
- Inaccurate job costing and estimating
- Managing regulatory, quality, environmental, and safety concerns

Response to Industry Dynamics



1. Product personalization

Custom products built to specification



2. Differentiate on service

Business model transition from products to services to outcomes



3. Smart equipment

Insight to machine data & usage for enhanced R&D and service optimization



4. Compete through collaboration

Involvement in every step from design to delivery



5. Maximize human potential

Enable employees & service engineers to work productively – AI, XR, mobile

Top Priorities for Manufacturing Executives

73%

Mobile

72%

Cybersecurity

73%

DC and
Analysis

Bridgr Insights

“Mobile Devices in Factories: An Important Competitive Advantage” – 2018

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Mobile Devices Everywhere

“ CEOs prioritizing the strategic importance of mobile technologies are driving a revolution in manufacturing today...

... Mobility is forcing manufacturers to compete in their prospects' and customers' timeframes while delivering greater value in less time than before.

Revolutionizing Manufacturing with Mobility:

- Generate quotes for build-to-order products
- Improving Supplier Traceability and Quality
- Enterprise-wide mobile inventory tracking
- Reduce Field Service call cancellations and delays

- Louis Columbus



3 Main Objectives

Paperless

- Reduce Manual Errors
- Real-Time Information
- Track & Trace

Agility

- Adapt to Changing needs of Customers as well as Market Trends
- Lean Manufacturing
- Purpose Built by Role

Improve Operations

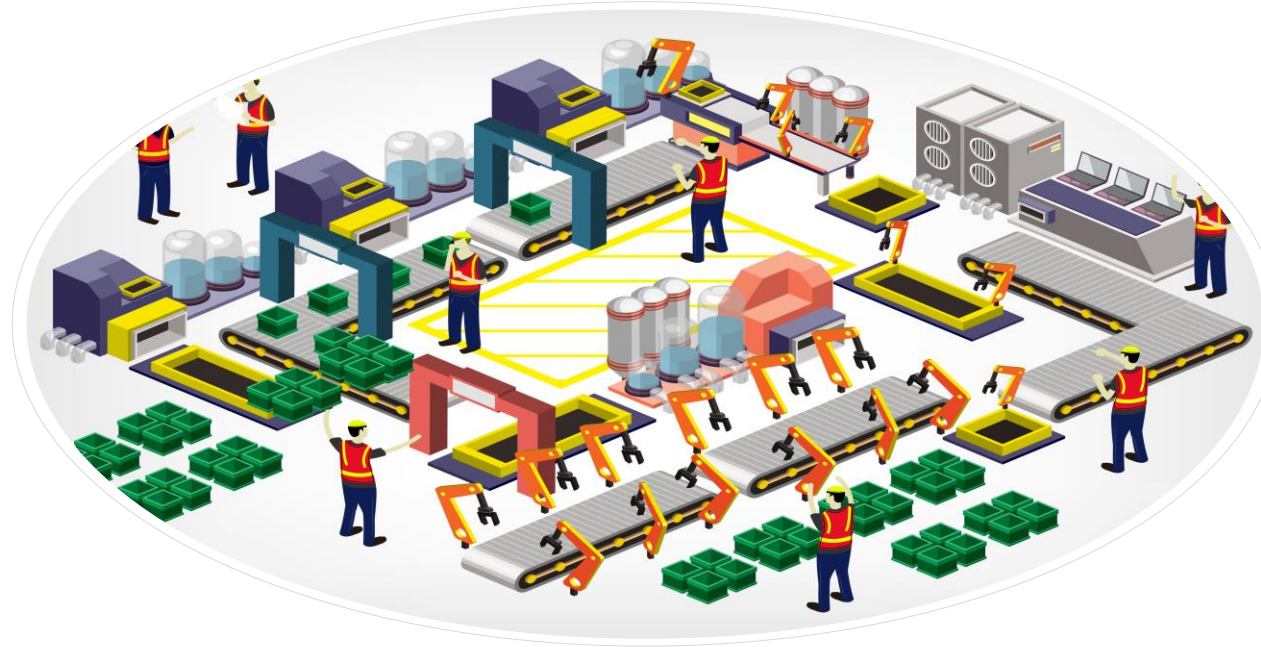
- Reduce Costs
- Improve Quality
- Aftermarket Service

End to End



Inbound

- Receiving
- Putaway
- Location to Location
- Material Issue
- Cycle/Physical Inventory



Outbound

- Pick, Pack, Ship
- Containers
- Transfers



Production

- Labor
- Production Reporting
- Attendance
- Quality Reporting



Expense Reporting

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AI/Machine Learning

What does it mean?



“Machine learning makes it possible to discover patterns in supply chain data by relying on algorithms that quickly pinpoint the most influential factors to a supply networks’ success, while constantly learning in the process.”

Forbes

“10 Ways Machine Learning is Revolutionizing Supply Chain Management” – 2018

Challenges for Adoption



We don't understand it



Human Bias



We don't Trust it



Need a Large Amount of Data

How is Machine Learning the Revolutionizing Supply Chain?



Improved Forecasting



Reduced Freight Costs, Improved Supplier Delivery, Less Supplier Risk



Lower inventory costs



Quicker response time to customers



Extended life of machines, engines, transportation and warehouse equipment



Improved Production Planning and Scheduling

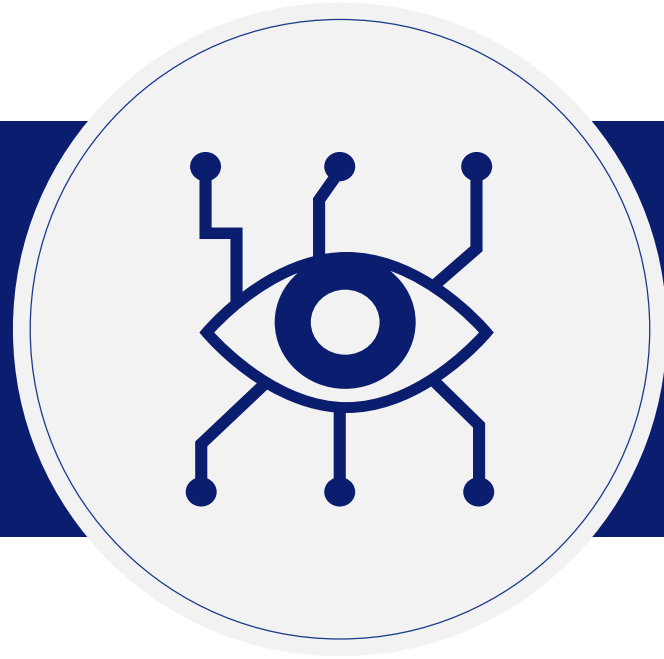
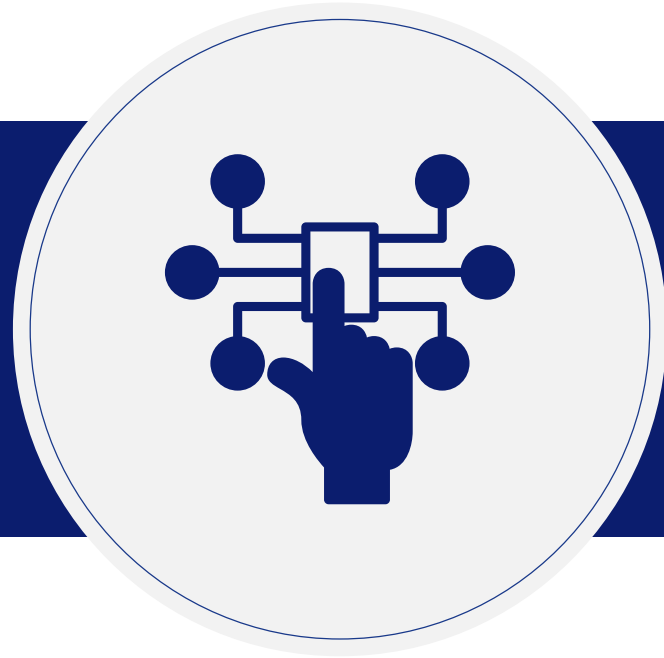


Image Recognition

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Mixed Reality

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What's Next?

**More
Manufacturers
will start to
embrace this
technology!**

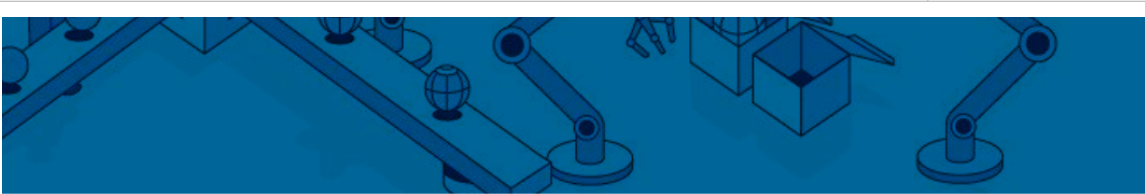
Greater Connectivity

- Real time information
- Inside the Four Walls
- Scheduling and Optimization of Shop Floor
- Outside the Four Walls
- Real time feedback from products out in the field

**Lights Out
Manufacturing?**

Reduced Cost

- No need to heat or cool shop floor
- No need for lights



Future Factory: How Technology Is Transforming Manufacturing

June 27, 2019 [f](#) [t](#) [in](#) [✉](#)

[3D Printing](#) [Artificial Intelligence](#) [Augmented & Virtual Reality](#) [Blockchain](#) [Internet of Things](#) [Supply Chain](#)

WHERE IS THIS DATA COMING FROM?
Start your free trial today

SIGN UP

From advanced robotics in R&D labs to computer vision in warehouses, technology is making an impact on every step of the manufacturing process.

"Lights-out manufacturing" refers to factories that operate autonomously and require no human presence. Because they don't need human supervision, they don't require lighting, and can consist of several machines functioning in the dark.

While this may sound like science fiction, these kinds of factories have been a reality for more than 15 years.



Manufacturers are known to be slow adopters of technology, and many may resist making new investments....

In the words of Henry Ford: “If you always do what you always did, you’ll always get what you always got.”



CB Insights
“Future Factory: How Technology is Transforming Manufacturing” – 2019



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