

Robotics

As workforce issues persist, and competition increases, robotics can play a role as businesses consider how to free up existing employees for more productive roles, as well as seek to increase their output speeds to meet growing customer expectations.

Webinars/Videos to Watch

Webinars:

- **Iowa Manufacturing 4.0 Consortium** webinar recording: [The Role of Automation and Robotics in Iowa Manufacturing](#)
- [CIRAS Industry 4.0 Webinars on Demand](#)

Videos:

- [Flywheel Supply](#) - LeMars, IA

Public sector service providers for your businesses:

- [CIRAS](http://ciras.iastate.edu/ciras_services/automation/) (ciras.iastate.edu/ciras_services/automation/) offers assessments, assistance with cost benefit analysis and integration planning, among other services.
- Download the Quad Cities Manufacturing Innovation Hub [Robotics & Automation](#) playbook to get started.

Iowa Vendors & others:

- [Acieta](#) is an Iowa-based robot systems integrator.
- [Thompson](#) is an Iowa-based technology systems integrator.
- [Universal Robots](#) specializes in cobot solutions in manufacturing.
- [Omron](#) specializes in robotic solutions in manufacturing.
- [FANUC](#) specializes in robotic solutions in manufacturing.
- [ABB](#) specializes in robotic solutions in manufacturing.
- [Epson](#) specializes in robotic solutions in manufacturing.



Disclaimer: This is not meant to be a comprehensive list of service providers

Additional Resources for You or Your Businesses

- ✓ [International Federation of Robotics](#) – offers research and white papers to promote robotics.
- ✓ National Institute of Standards and Technology (NIST) – Check out the articles and research in [Robotics in Manufacturing](#), or this blog: [A Simple Guide for Manufacturers on When to Choose a Robot](#).
- ✓ [Robotics Tomorrow](#) – an online robotics trade magazine. Offers numerous white papers and other resources for businesses.
- ✓ [Association for Advancing Automation \(A3\)](#) – an automation trade association. Website offers many free informational resources for businesses including an ROI calculator (automate.org)
- ✓ [Robotics Business Review](#) – informative website with articles, “The Robot Report” podcast, blogs and more.
- ✓ [Advanced Robotics for Manufacturing \(ARM\)](#) – supports projects in robotics solutions, operates [RoboticsCareer.org](#), an online resource for finding workforce training and education programs.

Notes about Robotic Applications

If tasks are...	These Robotic Application might help:
Dull or repetitive	Palletizing, Packing/Packaging, Inspection, Machine Tending
Dirty or in unfavorable conditions	Welding, Material Handling, Machine Tending
Dangerous	Material Handling, Machine Tending, Bin Picking
Dependent on accuracy and are repeatable	Assembly, Material Handling, Machine Tending, Palletizing, Packing/Packaging, Welding

Conferences/Trade Shows:

[Automate 2023](#), May 22-25, Detroit, MI

[FABTECH 2022](#), November 8-10, Atlanta, GA



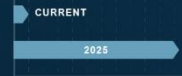
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What Cobots Can Do for Your Business

A COBOT IS A COLLABORATIVE ROBOT — ONE THAT WORKS ALONGSIDE HUMANS TO COMPLEMENT AND AUGMENT HUMAN CAPABILITIES.

HOW MANY INDUSTRIAL ROBOTS AND COBOTS ARE SOLD?

The number of industrial robots sold will grow from 381K in 2017 to 630K in 2021, which represents over 13% annual growth.¹



Cobot share of industrial robot sales now: 3%
In 2025: 34%²



Cobot global market 2018-2025:
>50% compound annual growth rate³



In 2017, 5 countries represented 73% of total global industrial robot supply.

China has the leading market share, supplying 36% of the market with growth of 58% in 2017.⁴

Cobot TASKS & DRILLS

TASKS COBOTS DO:

- Repetitive
- Monotonous
- Dangerous
- Error-prone

COBOTS CAN:

- Amplify human strengths
- Be a free-standing/moving machine
- Be an exoskeleton
- Customize

VS

Human THOUGHTS & SKILLS

SKILLS HUMANS BRING:

- Dexterity
- Creativity
- Reasoning
- Critical Thinking

HUMANS CAN:

- Ensure cobot condition
- Ensure worker safety
- Train (including reprogramming)

COBOTS AND WORKERS TEAM UP FOR:

- Accuracy
- Flexibility
- Speed
- Strength

WHERE ARE COBOTS USED IN A MANUFACTURING FACILITY?

- Assembly
- Loading/unloading
- Monotonous, repetitive, and/or dangerous tasks
- Packaging finished goods
- Palletizing
- Picking/placing
- Tool application (screwing, bolting, drilling, gluing, welding)

WHAT INDUSTRIES USE INDUSTRIAL ROBOTS NOW?

(2017 annual supply, thousands of units)

- Automotive (126)
- Electrical/electronics (121)
- Metal (45)
- Plastic and chemical products (21)
- Food and beverages (10)
- Other and Unspecified (58)

WHY INVEST IN COBOTS?

- ✓ Achieve consistency in quality and quantity
- ✓ Boost production output
- ✓ Fill employment gaps during upswings (seasonal requirements)
- ✓ Grow manufacturing capability
- ✓ Increase response time to consumer needs
- ✓ Meet market demand for customization
- ✓ Meet shortage of skilled manufacturing workers
- ✓ Realize productivity gains
- ✓ Reduce operating costs

Cobots IN ACTION



At Kay Manufacturing in Illinois, a cobot visually inspects automotive parts; its rotating arm allows an attached camera to spot any defects. Cobots allowed the company to grow, and it has hired more employees.⁵



Hyundai's cobots are exoskeletons that, worn by industrial workers, give them much-enhanced endurance and strength.⁶



At Ford, cobots lift and position heavy parts of cars, protecting the health of employees and helping them get more jobs done, more quickly.⁷

Visit: <https://www.nist.gov/mep/mep-national-network>

Call: 1-800-MEP-4MFG



(1) International Federation of Robotics, World Robotics 2018 (2) Robotics Industries Association, using Leap Ventures report (3) Markets and Markets, Collaborative Robot Market by Product Capacity, Industry, Application, and Geography — Global Forecast to 2027 (4) International Federation of Robotics, World Robotics 2018 (5) <http://www.illinois.gov> (6) <http://www.hyundai.com> (7) <http://www.ford.com>