

The competitive pressures facing manufacturers are unrelenting. Labor shortages, economic uncertainty and political volatility – combined with continued consumer demand for higher quality and real-time availability, at lower costs – make running a profitable production line more challenging than ever.

For large and small-to-mid sized manufacturers alike, more automation, applied intelligently, is the key to unlocking more value in volatile business environments – more business, more profitability, more productivity, more agility – just plain more. Regardless of size, sector and location, manufacturers need a reliable and flexible way to accelerate automation. The visionaries are turning to collaborative robots (cobots) as the solution.

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Cobots have come a long way in a short period of time. Today, advances in hardware, software, and functionality are transforming manufacturing operations large and small, and equipping manufacturers all around the world with the flexibility they need to compete, grow and profit in any economic climate. This paper covers:

- 1. The evolution of cobots and manufacturing automation
- 2. Five areas where cobots help manufacturers drive more value
- 3. Essential questions for finding and deploying the right cobot solution



### A New Breed of Automation That's Built to Do More

Manufacturing is undergoing a transformation, moving toward a demand-driven model that lowers risk and cost. New models for operations aim to:

- Bring production closer to target markets
- Increase consumer personalization by shortening production runs
- Grow output while reducing footprint
- Overcome capacity and labor constraints
- Increase the speed and frequency of new product introduction

While traditional automation has been a boon to high-volume industrial operations for decades, in these new environments, large-scale robots have reached the limit of the value they can add. These systems have not evolved much since Unimate was introduced at General Motors more than 50 years ago. Even today, they cost millions to install, can be used only for specific tasks and require enormous (and expensive) infrastructure to ensure worker safety. Responding to market shifts by scaling up and down with traditional automation is nearly impossible.

In contrast, when introduced around 10 years ago, cobots were designed to overcome the constraints of traditional automation and make automation accessible and quickly effective for all manufacturers, no matter their size.

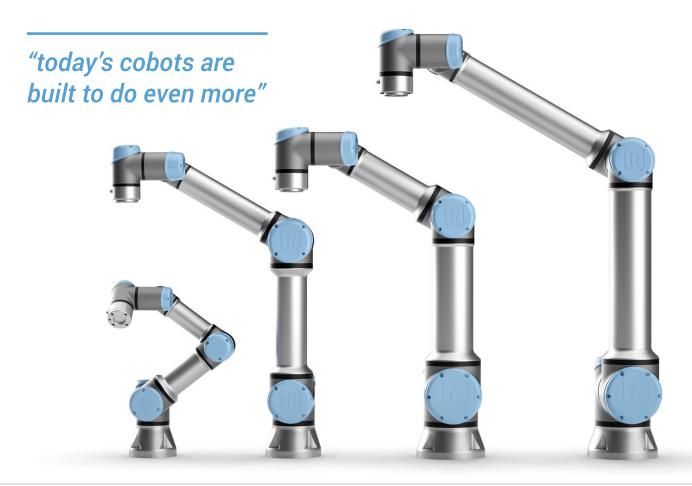
- First, these machines were significantly less expensive. Deployment did not require reconfiguration of workflows or the production area.
- Second, they were designed to be safe enough to work around – and in fact – with people.
- Third, they could be trained by the person doing the job – not a programmer or roboticist with a PhD.
- Fourth, the same cobot would be able to perform a variety of tasks without expensive and lengthy reprogramming. They became a linchpin to operational flexibility.



While cobots have been empowering manufactures to run agile operations and increase performance for nearly a decade now, today's cobots are built to do even more. Recent advancements have made it possible for cobots to:

- Lift as much as 16 kg
- Apply the ideal force sensing required for sensitive applications such as screw- and nut-driving
- Easily handle heavy-duty applications, including machine tending, heavy-part handling and palletizing
- Deliver full return on investment in less than a year for even the most complex tasks like assembly or polishing
- · Be unpacked, mounted and programmed within minutes
- Be on the job in as little as an hour

These advances, backed by a decade's worth of real-world, successful installations across the globe, make cobots an essential component of every manufacturer's strategy.



### The Bottom Line: Cobots Power Manufacturers to Do More

There are plenty of opportunities to accelerate automation across manufacturing environments; Justin Rose, Managing Director at Boston Consulting Group (BCG) recently <u>said</u> that BCG estimates that 60% of the tasks in a factory can be automated.

# The primary advantage of accelerating automation across the factory: More results.



**More profitability:** When cobots are the on the job, manufacturers lower the cost of production at scale and increase profit. A <u>2019 study</u> done by UK-based research firm Smither Pira found that a 1% decrease in production cost delivers a 34% increase in profit.



**More business:** Economic uncertainty and fickle consumer behavior make it hard for manufacturers to know what to produce, how much, when and where. With cobots, manufacturers can scale production up and down as demand requires, switch stock keeping units (SKUs) and expand into new markets more quickly.



**More productivity:** When it comes to repetitive tasks, cobots are immune to boredom and injury. In almost any kind of production environment, cobots can significantly increase productivity levels. In June 2019, the publication NewAtlas profiled a <u>Ford plant in Spain</u> that uses mobile robots to deliver parts around the factory which free up more than 40 hours per day for employees to focus on other tasks.



**More employee satisfaction:** Cobots free people from dull and dangerous jobs and can open opportunities for more rewarding work. In a <u>2019 report</u> on the consumer packaged goods industry, McKinsey found that extensive automation can ease recruitment and retention by creating new technical roles with better pay, opportunities and working conditions.



**More value:** Consumers and businesses want quality goods at lower costs. Cobots play an important role in improving product quality by eliminating human error, ensuring consistency and accuracy, enhancing the ability to create more complex goods, and identifying errors along the way. Examples of increased quality – and efficiency – can be seen across the world: <u>Tribar Manufacturing</u>, an automotive supplier in the U.S., significantly improved quality and reduced cycle times by more than 50% through its investment in cobots.



**More overall equipment effectiveness:** Cobots are proven solutions for increasing productivity and overall equipment effectiveness, including throughput, yield, availability and downtime. McKinsey estimates, based on its scenario modeling, that automation could raise productivity growth globally by 0.8% to 1.4% annually.

## What to Ask When Evaluating a Cobot-Driven Solution

While cobots are essential for competing in today's volatile environment, not all cobot solutions are created equally. Given the stakes – production lines, profitability, growth – here are eight questions manufacturers should ask a vendor to ensure that the cobots they implement will deliver, as promised:

- 1. How many cobots have you successfully deployed across the world?
- 2. How fast can the cobot be trained and programmed for my application?
- 3. What is the maximum payload and reach?
- 4. Can the cobot efficiently manage heavy part handing and machine tending?
- 5. What and how many certified products do you offer?
- 6. What kind of training support is available globally?
- 7. What customers can I talk to about their experience with my task?
- 8. Where can I see how the cobot works in environments like mine?

With every challenge, there comes opportunity. For manufacturers, increased automation can ensure that they are positioned to succeed and unlock more value, regardless of external volatility and uncertainty. Cobots are no longer an intriguing science experiment, afforded only by the largest companies. These machines are doing real work, across all types of manufacturing all over the world, and there's plenty of proof that cobots are ready to help you do more, too.

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## TAKE THE NEXT STEP

Are you ready to explore how collaborative automation can help your business do more? Check out the newest member of the Universal Robots family: <u>UR16e</u>.