

# The Changing Face of Manufacturing



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**MODEX**<sup>2020</sup>

GEORGIA WORLD CONGRESS CENTER  
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Transformational change...

**CREATES OPPORTUNITIES**  
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# THE TRANSFORMATIONAL CHANGE – AUTOMOTIVE INDUSTRY

The industry is shifting to new materials and technologies. This shift creates new opportunities, eliminating old processes and parts.

Electric vehicles contain **95% LESS** components than their fossil fuel based counterparts.

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# THE TRANSFORMATIONAL CHANGE – AUTOMOTIVE INDUSTRY

New opportunities for automation in emerging electric vehicle industries will spark a transformational change in automation technology

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# THE TRANSFORMATIONAL CHANGE – AUTOMOTIVE INDUSTRY



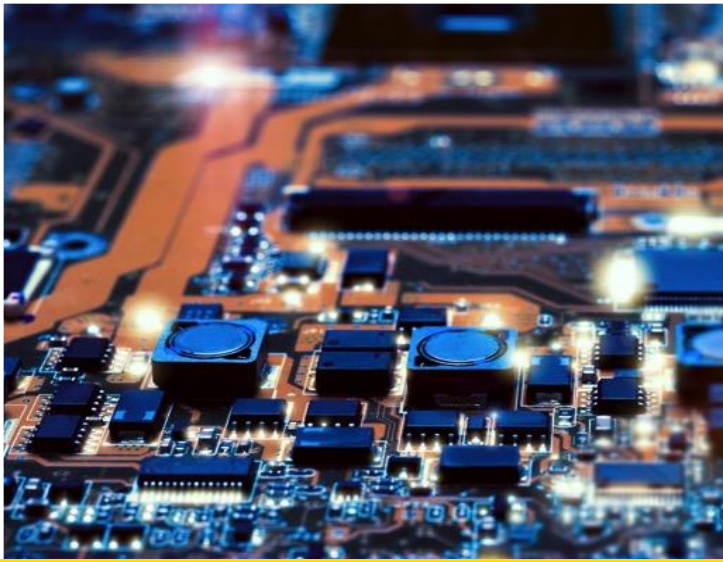
## Autonomous Technology

Automotive OEM's focus on Autonomous Technology & The Driver Experience

- Interior Redesign
- Sensor Manufacturing
- Connector and Wire Harness

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# THE TRANSFORMATIONAL CHANGE – GENERAL INDUSTRIES





From phones to  
snacks....

Robots produce  
the things we  
use in our daily  
lives



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# READY, SET, GONE!

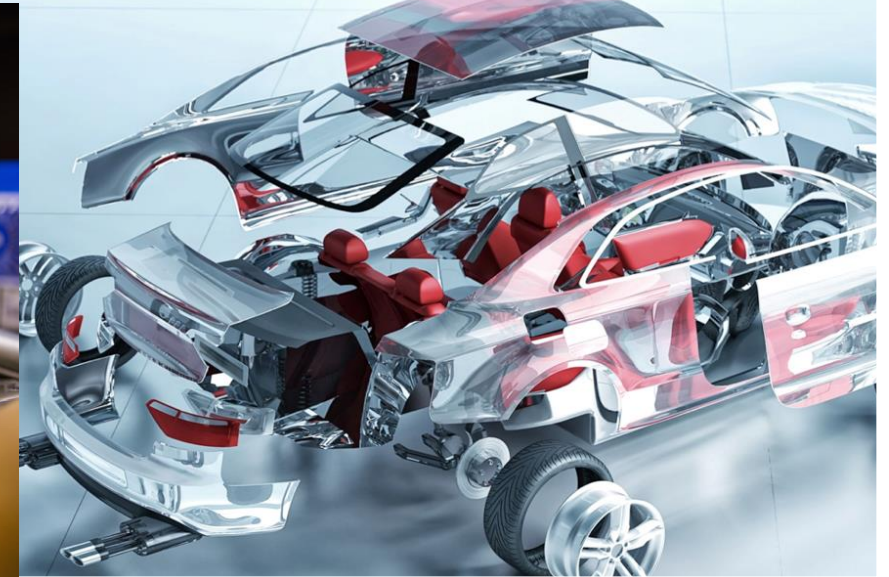
The opportunities are here now. Don't let them race past you.

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# CREATING SOLUTIONS FOR A DIVERSE CUSTOMER BASE







# What's interesting about this image?

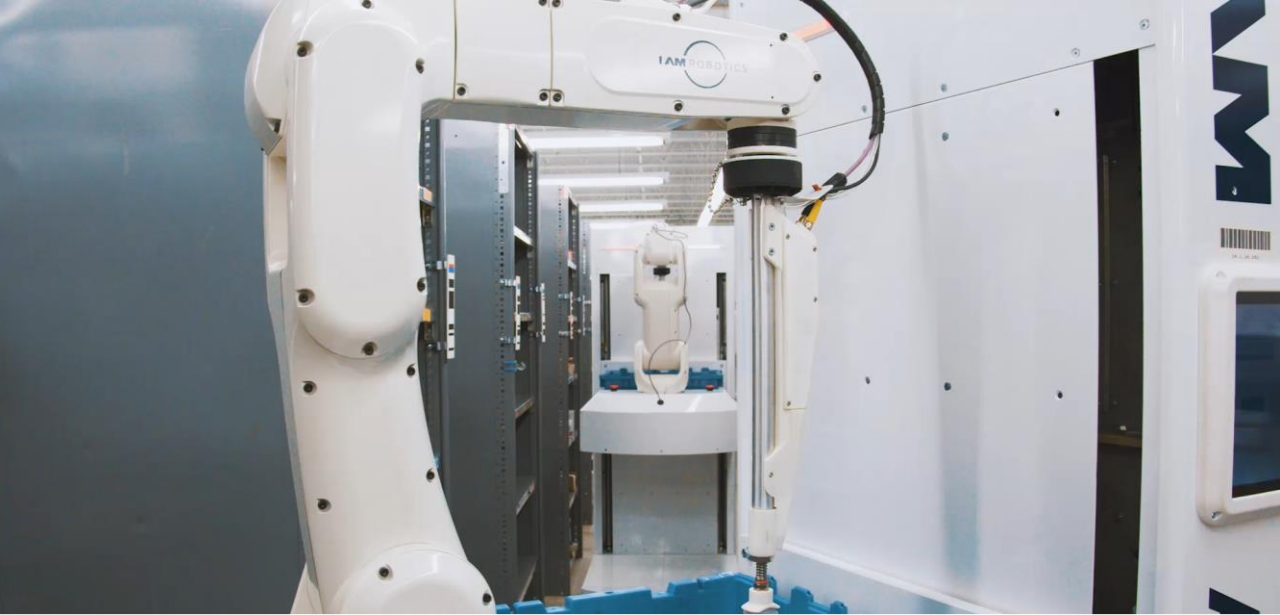
It's not only about the dirty D's!



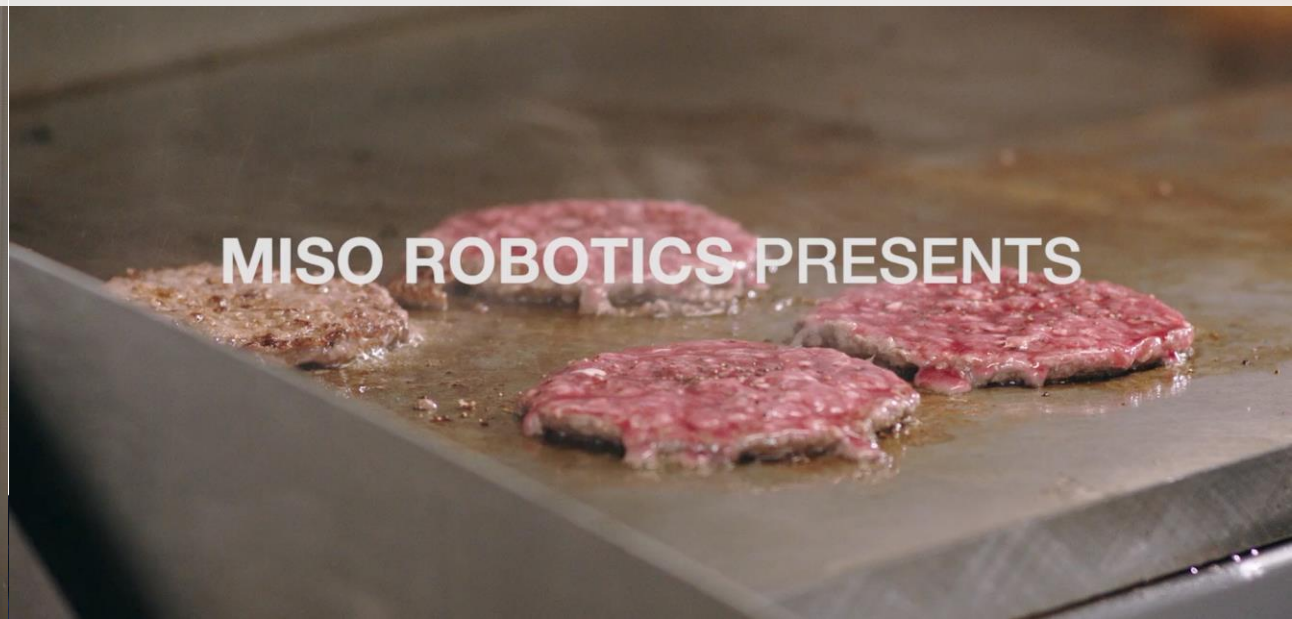
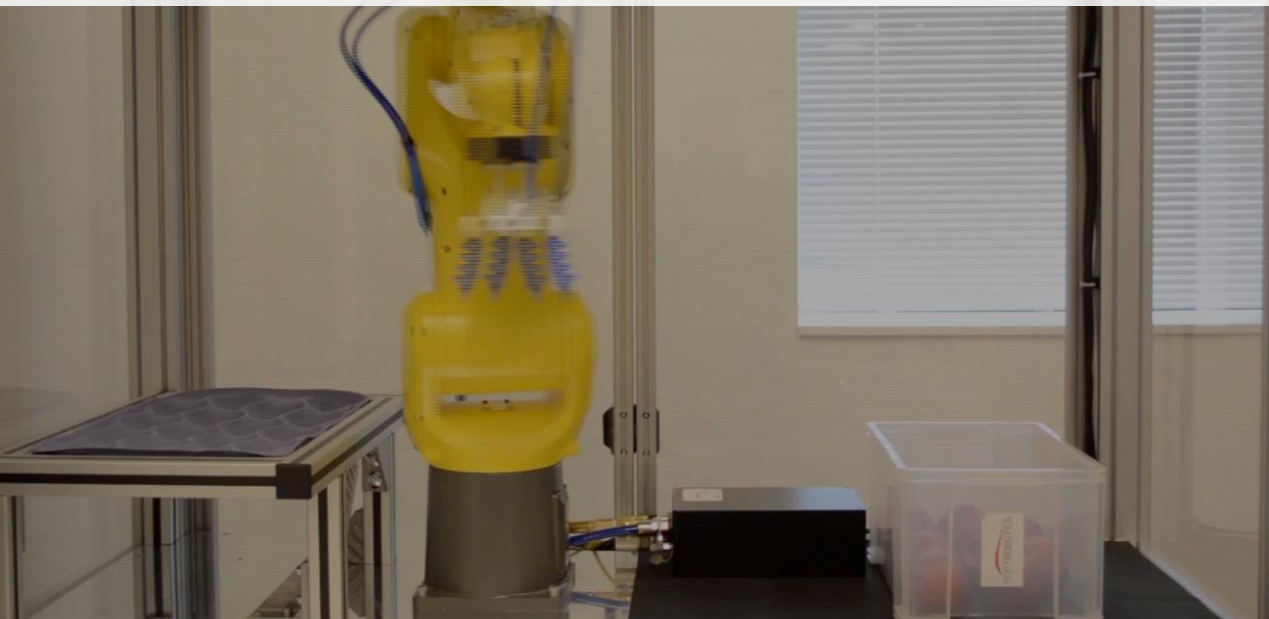
# A New Business Reality







**THE NEXT FRONTIER IS HERE**

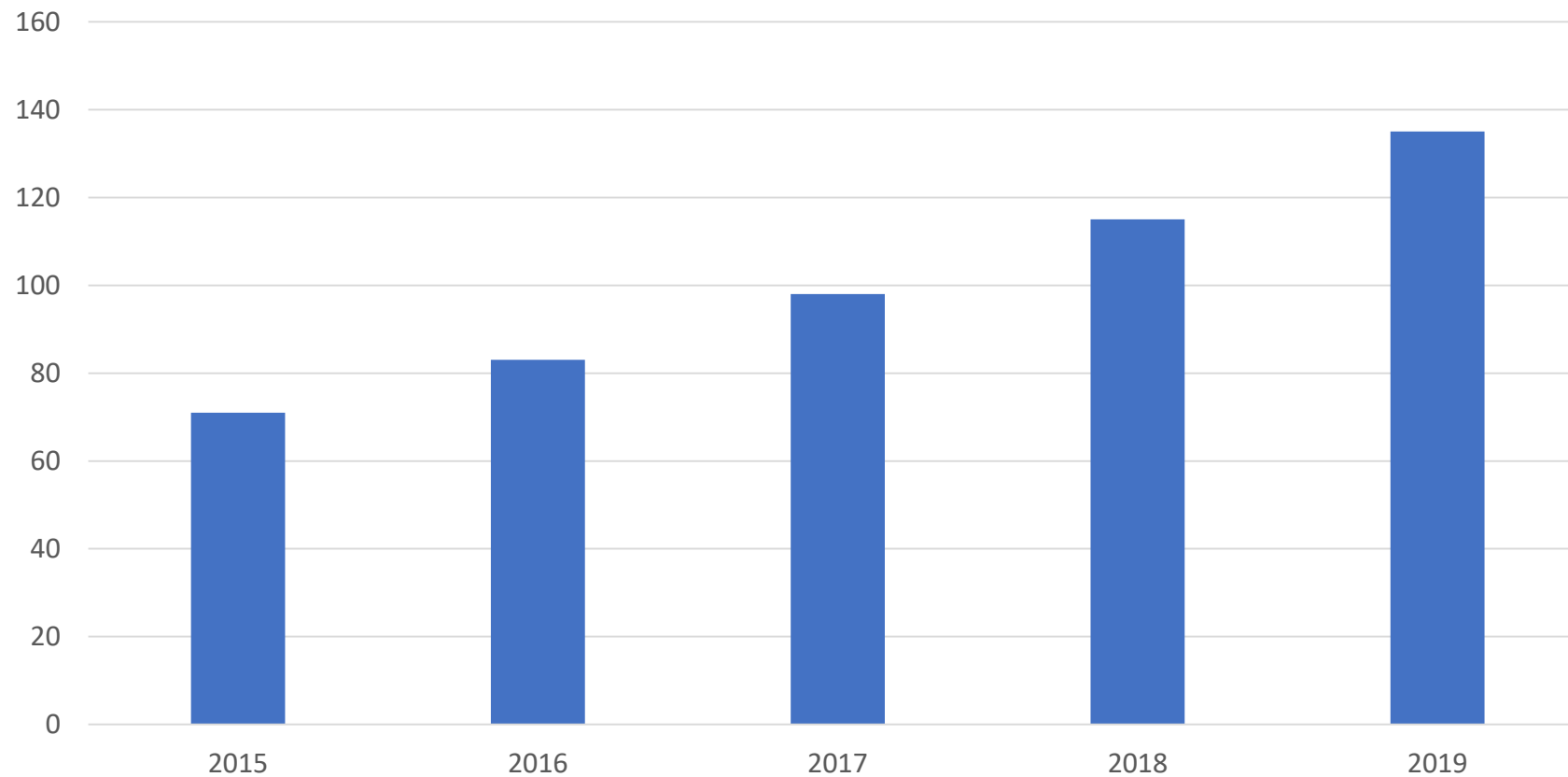


**MISO ROBOTICS PRESENTS**



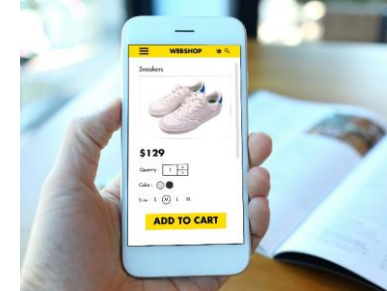
# Global Annual Investment in Robotics \$135B by 2019

Global annual investment in robotics from 2015 to 2019 (in billion U.S. dollars)



Billions of dollars invested

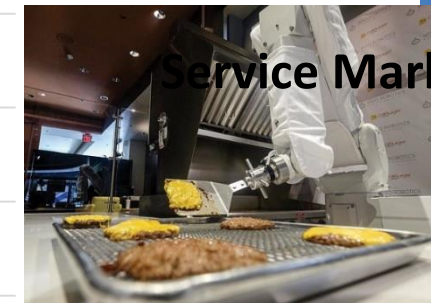
## E-Commerce



## Mobility Trends



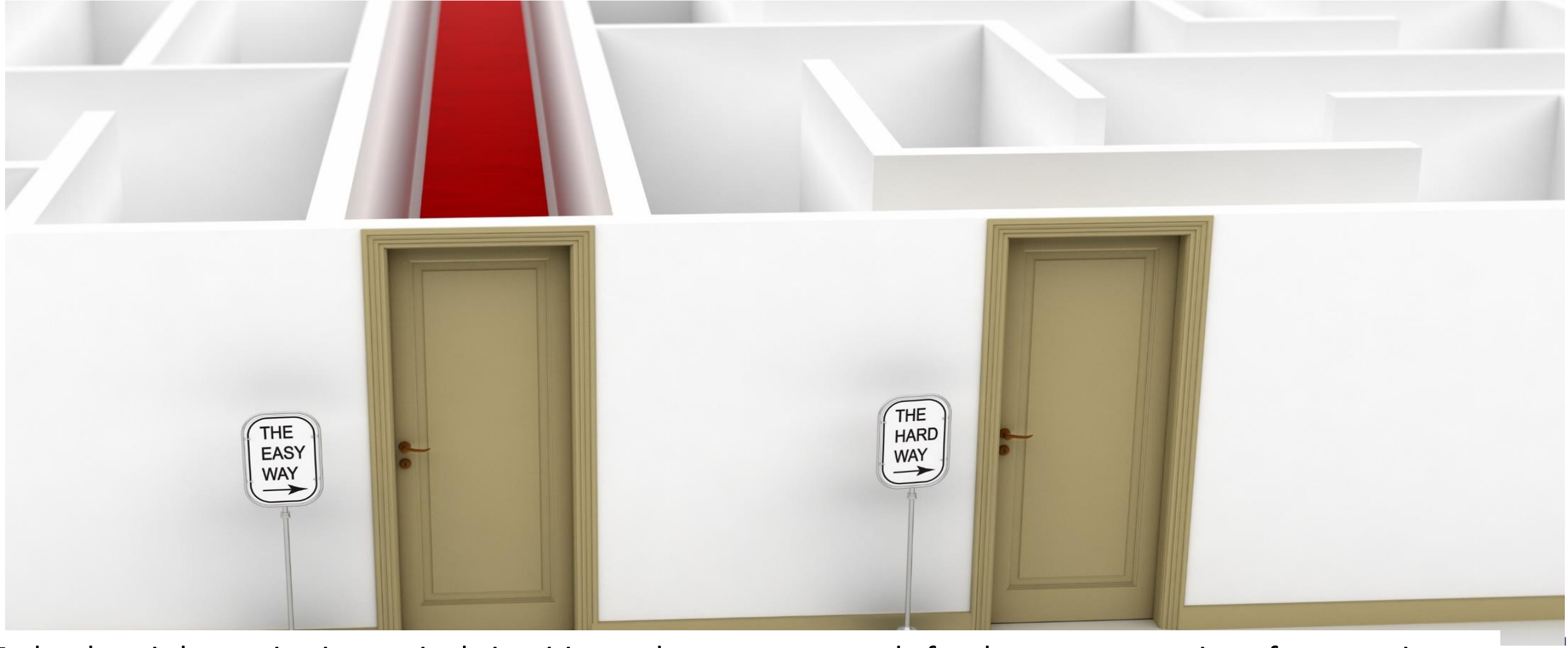
## Service Markets



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# Ease of Use



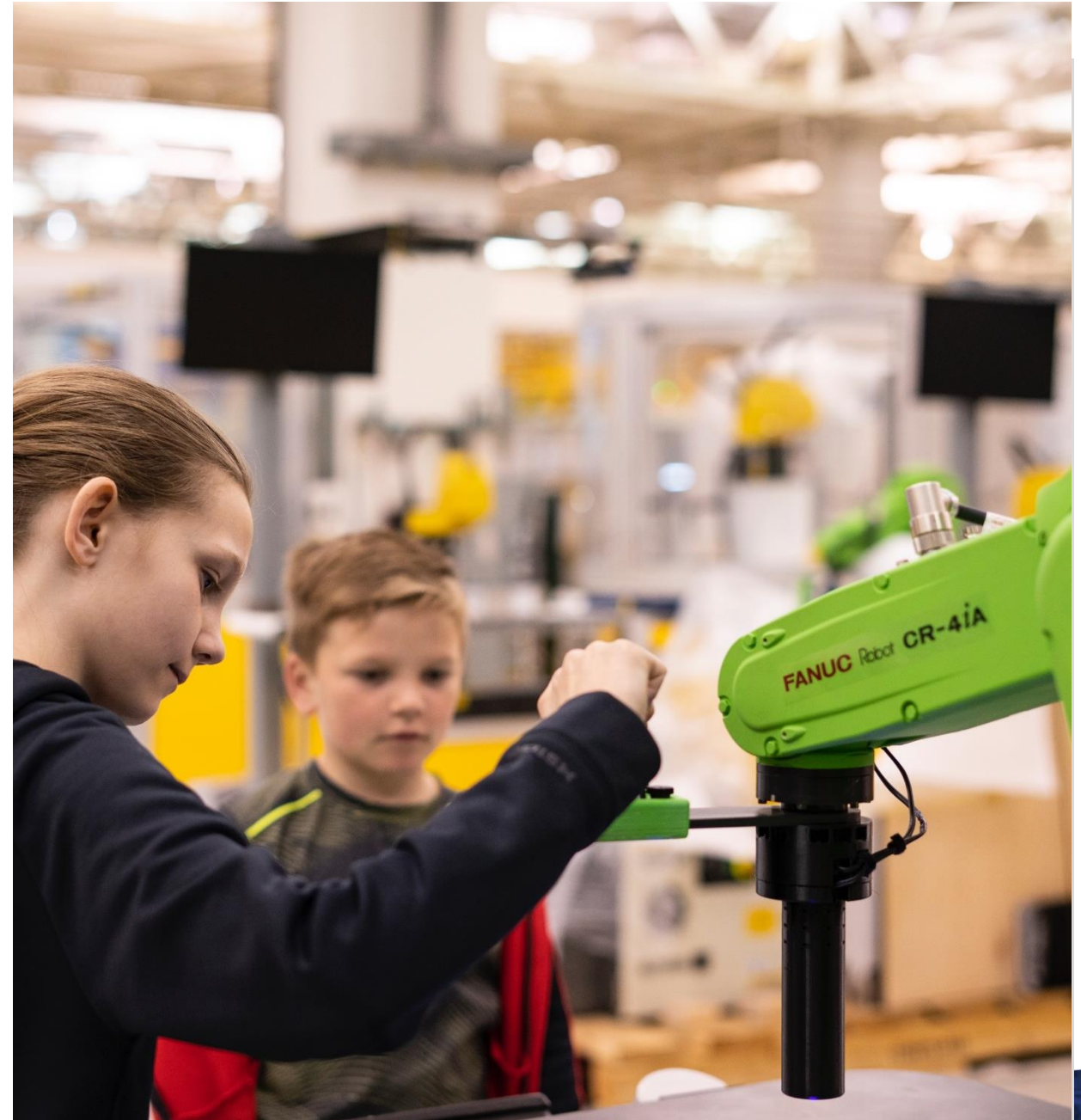
Technology is becoming increasingly intuitive and easy to use; ready for the next generation of automation.





# Ease of Use

- The drive to make technology more intuitive and adaptive to a new manufacturing workforce.
- Time saving technologies can increase productivity and address skilled labor shortages.



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# *i*HMI Interface

- Common *i*HMI Interface across **all** FANUC products
- Designed for new or infrequent users
- Simplifies setup, programming, and operation





# Collaborative



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# Cobots Are Cool!!!!



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# THE INDUSTRIAL INTERNET OF THINGS

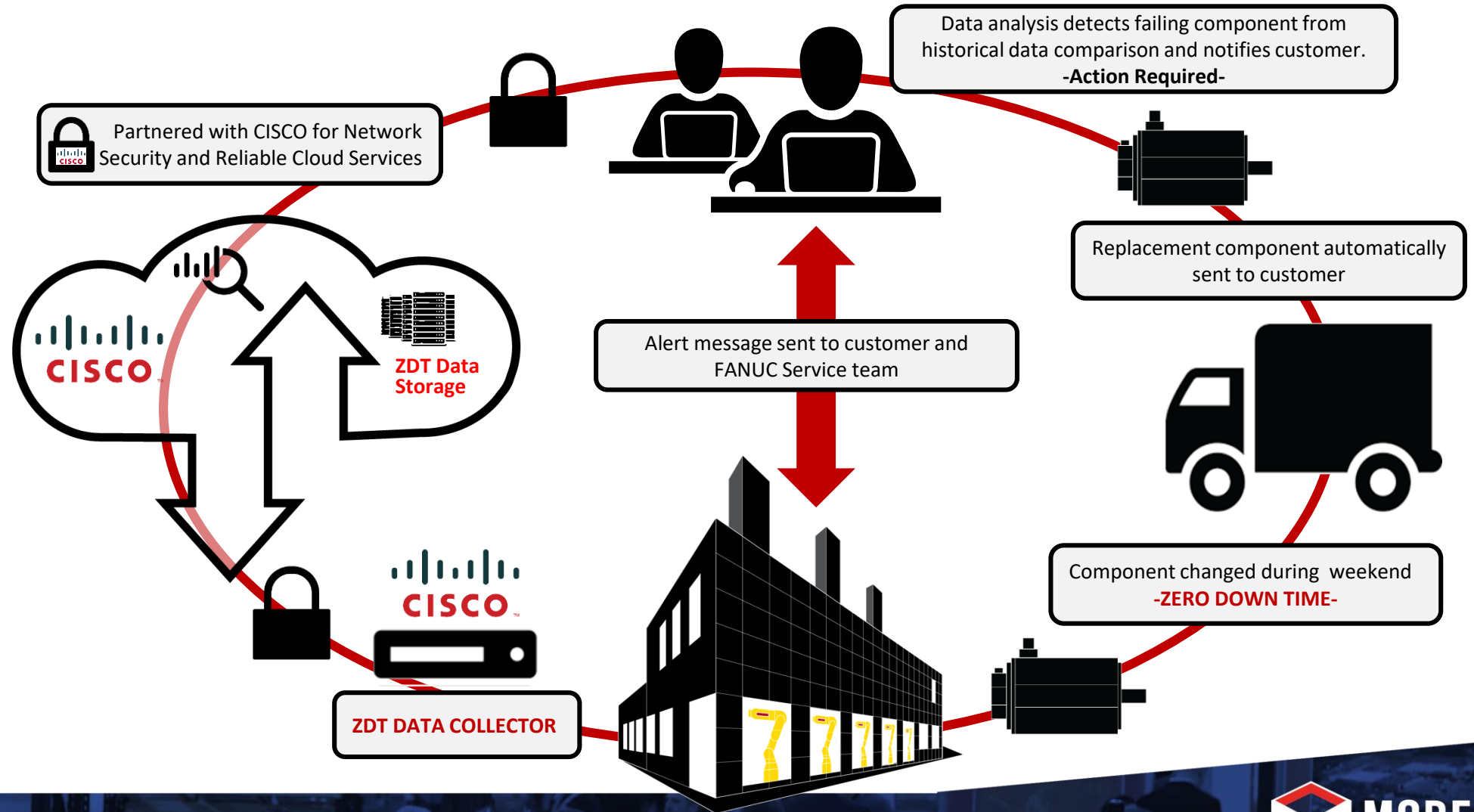
## GET CONNECTED!

**Analytics, AI and  
Machine Learning are  
the future battlefield**

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# The Importance of Analytics



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**CLOUD**



**FIELD System Manager**  
License information,  
Device management,  
information, etc.



**FIELD System Store**  
Purchase and download  
Apps and Converters.



3<sup>rd</sup> party  
Applications

Artificial  
Intelligence

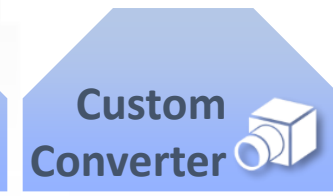
**EDGE HEAVY**

**OPEN PLATFORM**

**FOG**



FANUC products



Machine Tools, Industrial Machines, PLCs, Sensors, 3<sup>rd</sup> party machines, etc.

**EDGE**  
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A SKILLED WORKFORCE IS THE COMPETITIVE  
DIFFERENTIATOR IN A GLOBAL ECONOMY

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# The Manufacturing Workforce Message

- The inability to compete is the biggest threat to jobs, not automation.
- Technology advances have always changed the nature of jobs.
- The skills gap is real & requires our attention.



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# BRIDGING THE SKILLS GAP WITH CERTIFICATIONS

- Apprenticeship programs **declined 40%** in the U.S. from 2003-2013 <sup>1</sup>
- STEM jobs outnumbered the unemployed **2:1**, In fact job openings have been **growing at double-digit rates** since mid-2017
- STEM employment will **grow 19%** through 2020 <sup>1</sup>
- Traditional—and expensive—collegiate career route is giving way to parallel work-study tracks
- Employers more than ever recognize the value of **Industry Certifications** and incentivize high demand occupations







# The next generation Of innovation is here

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