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Trends in Robotics Related to Food Production

Geoff Pegman
Managing Director
R U Robots Limited

Smart Specialisation in the Food Supply Chain Conference
Budapest
4th April 2018

Why Bother Listening?

- Successful track record of developing new automation and robotics applications for over 30 years
- Have been developing solutions for the food industry for over 15 years
  - Both large companies and SMEs
- Well networked (Know what is going on)

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My First Message to Many Food SMEs

Don’t buy a robot!

(Yet!)

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Robotics in the Food Industry

The Good News

- Most tasks in the Food Industry can be automated
- Many have been
- Automation and robotics can bring real competitive advantage
  - And solve other problems
- Automation can be introduced incrementally

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Robotics in the Food Industry

The Bad News

- Many robot systems are unsuitable for the rigours of the food industry
- Many food industry processes are not suitable for standard robotics solutions
- Robot system integrators often don't understand the food industry
- Food industry system integrators often don't understand robots
- Support requirements can be expensive

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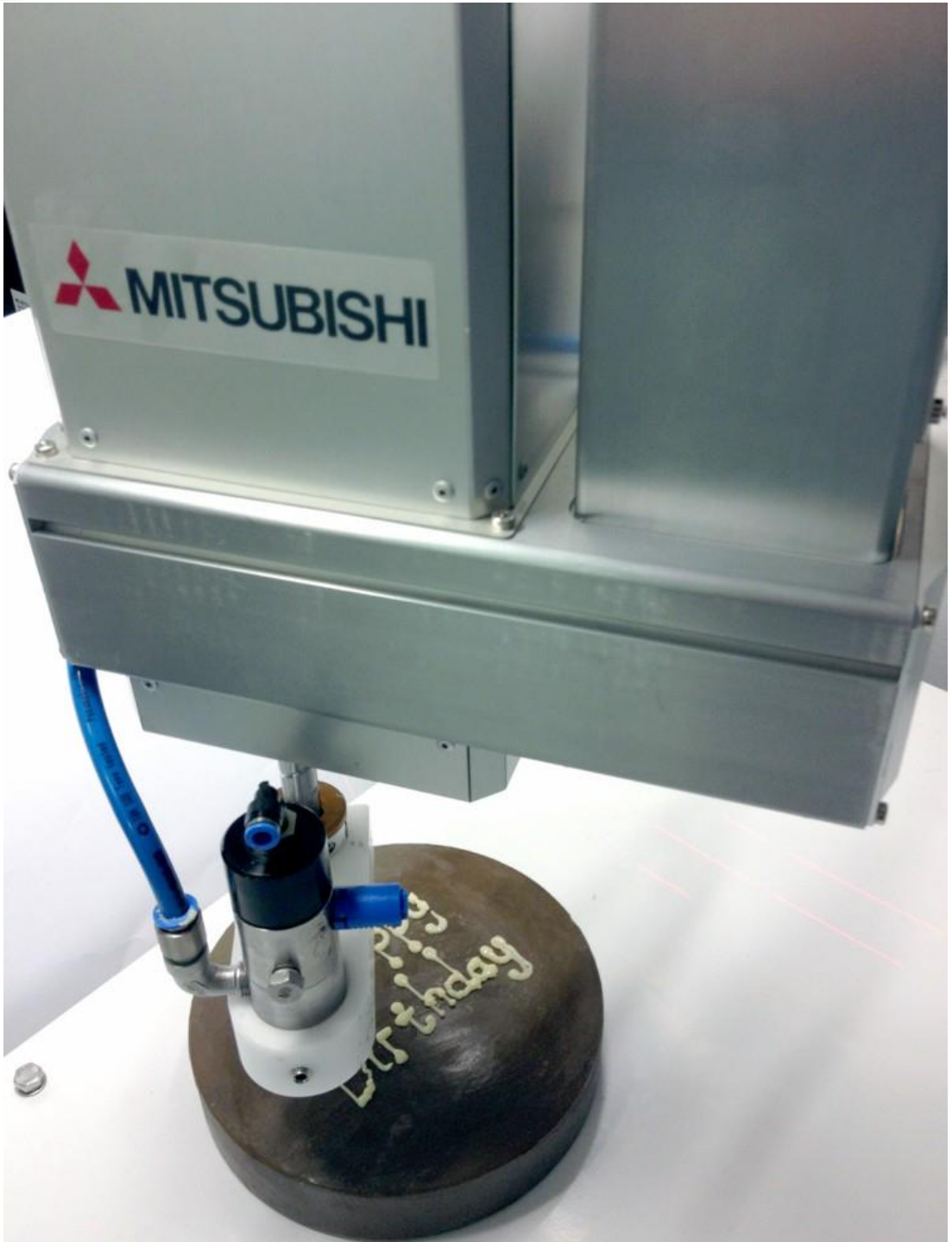
Automation Successes


MOTOMAN
UNIGRIPPER


002
003
004
018
008
006


MITSUBISHI


ABB

The Resistant Area

Low volume, frequent product change
food assembly / transfer

But ….

- Flexible automation is what robots are designed to do
- Food assembly is the simplest manufacturing assembly process

Food Assembly

Very high volume, long life, branded, single product lines: Hard automation

High volume, single product lines

Regular product, good localisation:	Hard automation
Regular product, poor localisation:	Robotics
Irregular product, good localisation:	Hard automation / Robotics
Irregular product, poor localisation:	Robotics

Medium to high volume, mixed product lines: Robotics / Manual

Low volume: Manual / Robotics?

Challenges in the Food Industry

- Dysfunctional supply chain
- Low batch volumes
- Short / unpredictable product life
- Short payback expectations
- Difficult product handling / food hygiene
- Low R&D investment (0.24% turnover)
  - Most on product development not process
- Low IT support capability
- Lack of space
- Lack of automation awareness

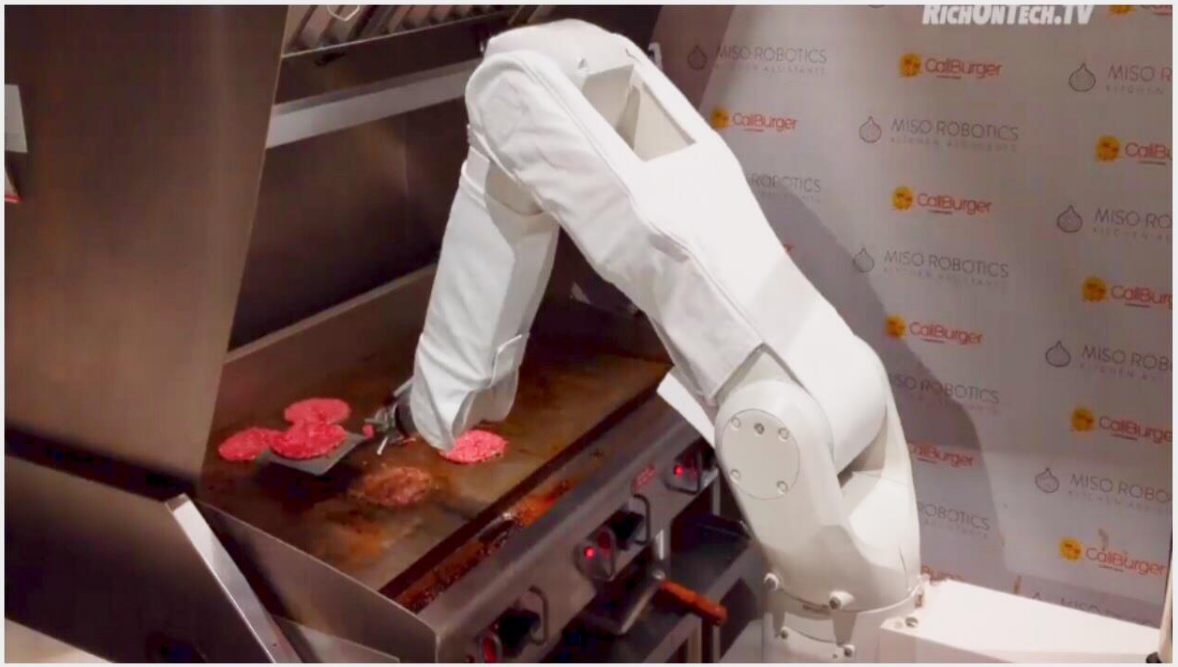
SME Drivers for Automation

- Difficulties with staff recruitment, training and retention
- Competitiveness
- Traceability
- Hygiene

UNCATEGORIZED

“Flippy” The Burger-Flipping Robot Taken Offline After First Day

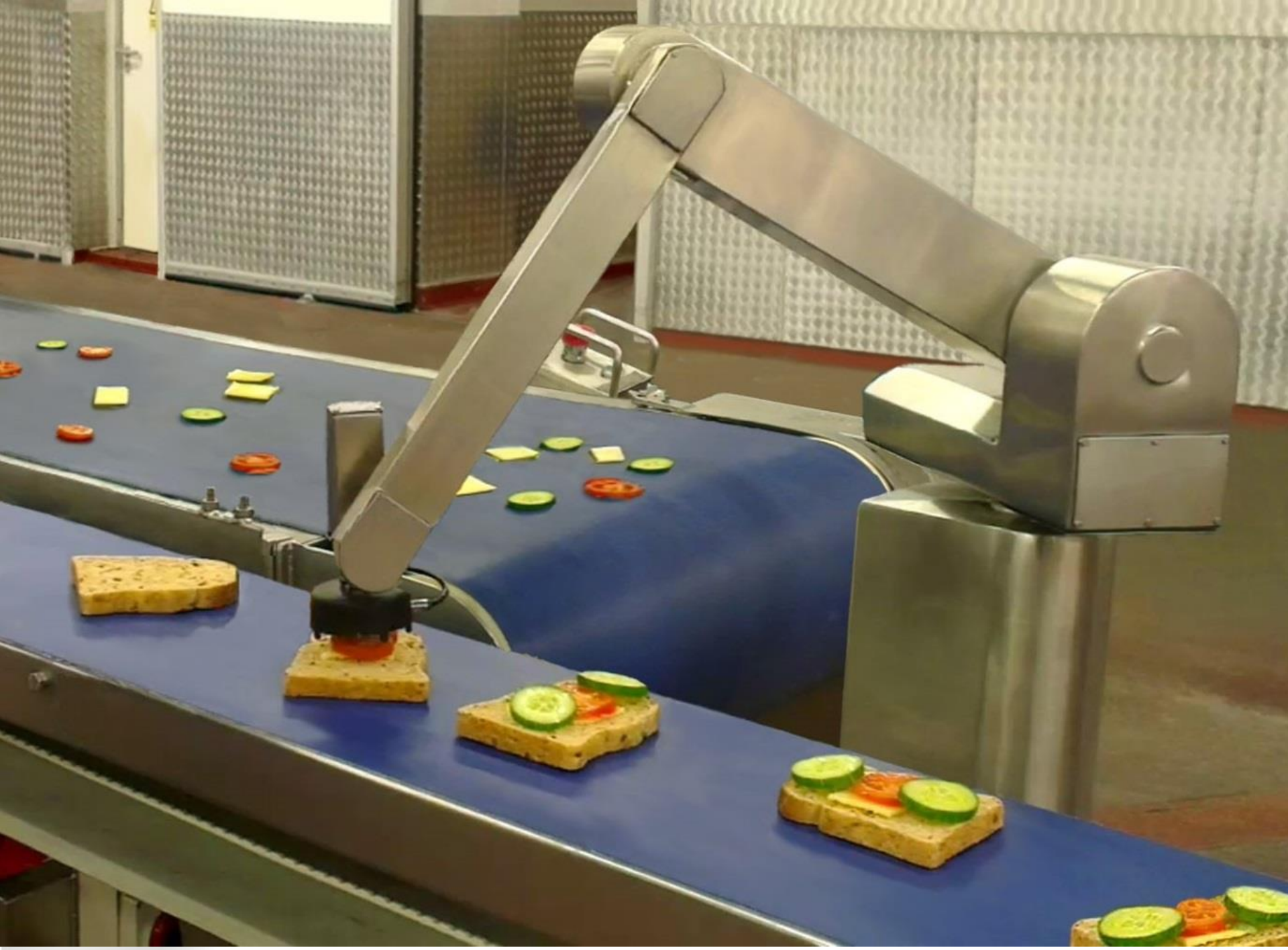
Published 19 hours agoon March 11, 2018
By **Roy Steiner**



A Brief Case Study

GRAIL Robot

- Sandwich making
- Task based “drag & drop” interface
  - No programming
- Fast product change over
- Innovative grippers
- Works alongside workers
  - Works outside the cage
- Works at same speed as workers
- Payback ~ 1 Year



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Engaging SME Food Manufacturers

- Local, proactive contact with SMEs
- Solutions not technology
- Production pilot site(s)
- An holistic approach
  - Many manufacturers not yet ready for automation
- Independent evaluation and guidance
- All the above are needs that a **Digital Innovation Hub** specialising in food production can meet

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THE END