

1. Food Industry Status

The UK's food industry is facing increased challenges to keep up with stakeholder's continuously changing demands. Existing fixed and rigid equipment are deemed insufficient in handling these challenges. For organisations to fully tackle these challenges there is a need for immediate operations changes.

Industrial robots are ideal in aiding food manufacturers tackle majority of these challenges. They can allow technological developments in food processing, facilitating the smooth transition into Industry 4.0.

2. Food Processing Applications

A. Material Handling

Pick and Place, Loading and unloading



B. Material Processing

Slaughtering, Separation, Size Reduction



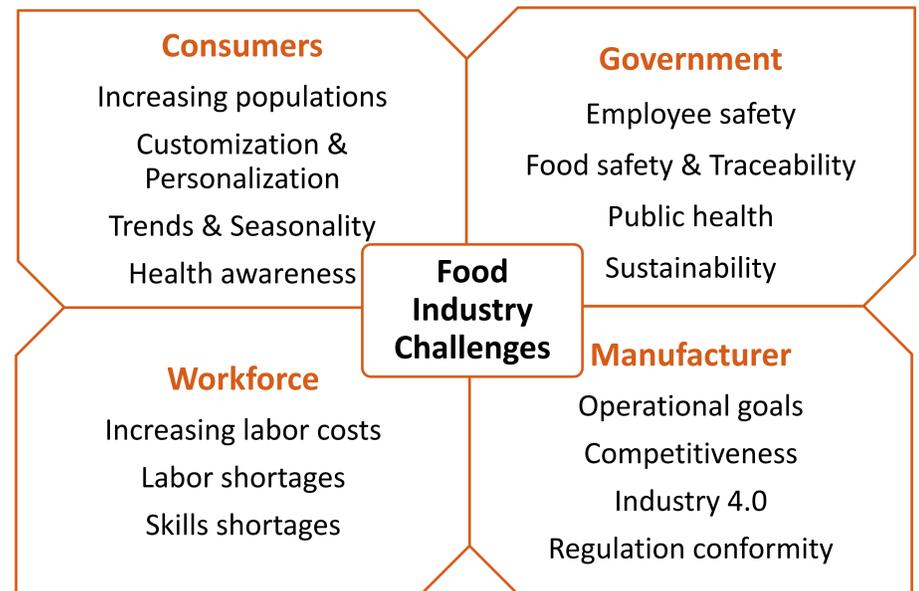
C. Assembly

Mixing, Assembling and Decorating Pre-Prepared ingredients

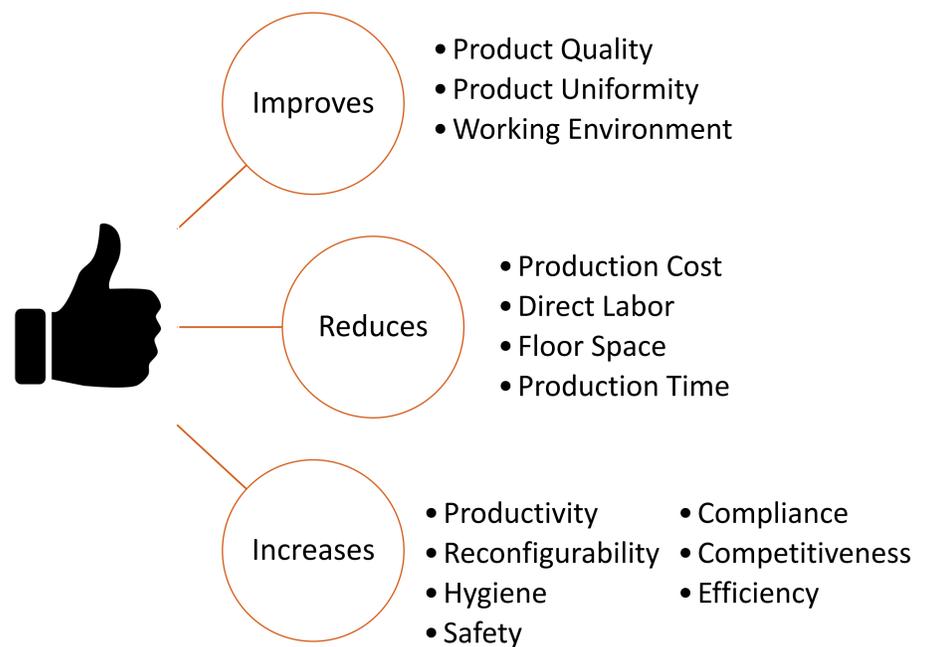


D. Packaging & Palletising

Primary, Secondary and Tertiary packaging of finished goods



3. Industrial Robot Benefits



4. Challenges of Adoption

- Foodstuffs are delicate, non-rigid material that are easily deformable
- Food manufacturing requires high hygiene levels
- Industrial robots perceived as expensive, difficult to operate devices
- Limited access to professional engineering and IT skills within food organisations
- Current selection and implementation tools are either difficult to use or non-applicable to food processing



5. Future Work

To advance the development of robotics for the food industry and their utilisation by SMEs this research will:

1. Providing a framework for the planning and selection of industrial robots for food processing applications
2. Tools for physical and operational robotic recommendations for a specific food processing application
3. Economic and environment assessments for robotic recommendations for a given specific application

