Modernisation of food processing through digitisation and Industry 4.0
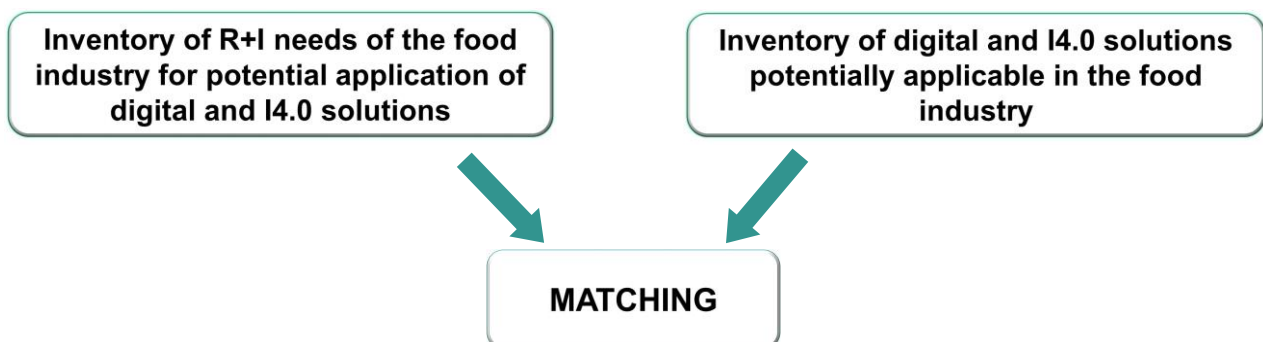
Digitisation, Industry 4.0 and advanced manufacturing offer a number of new enabling functions and applications that can address the needs and problems of food processing, improving their competitiveness.

According to expert estimates, approximately 80% of the food industry needs can be served by adapting digitisation and I4.0 solutions which were developed for other advanced industries.

Main benefits of the digital and Industry 4.0 solutions for the Food Industry:

- **Flexible production of customised products** - with increased involvement of consumers - at costs, similar to mass production.
- **Cost reduction:** proportional use of resources - energy, water, ingredients, packaging material, labour force - and better design of process flow.
- **Reduction of environmental impact.**
- **More reliable control of food safety and quality.**
- Simulation, design and **optimisation of processes** and plant through
    - optimisation of the production process of a new product;
    - reduction of change-over time, increasing the exploitation of line capacities;
    - prediction of maintenance, reduction of down time.
- **Reduction of the shortage of labour force.**
- **Assistance to staff** for carrying out complex tasks.
- E-commerce and novel logistics methods.

Campden BRI Hungary offers:

Campden BRI Hungary's services:

- Defining the operational conditions, constraints of application of digital and I4.0 solutions.
- Food technology based assistance to the application of advanced solutions, modern technologies and methods through an extensive network of transdisciplinary cooperation (ICT, mechanical engineering, automation and other service providers).
- Validation of food safety and quality outcomes.
- Cooperation with food businesses and digitisation & I4.0 solution providers: S3 FOOD Workshop in September 2019 – 'Modernisation of the food industry through Industry 4.0 and digitisation'.
- Building communities of the food industry and digital & I4.0 knowledge solution providers.

Campden BRI Hungary's references:

- Experience in matching food industry needs and digital and I4.0 solutions.

- Practical experience in adapting digital and I4.0 solutions in the food industry.

- Broad range of experience in European transdisciplinary projects:
  Connsensys *(COSME project)* / S3Food *(HORIZON 2020 project)* (connecting smart sensor systems for the food industry),
  FoodManufuture *(EU FP7 project)* (food factory of the future with transdisciplinary – ICT, automation, mechatronics and other – solutions),
  EFFAT *(FoodDrinkEurope & IFAU project)* (digital skills in the food industry),
  SmartAgriFood *(EU FP7 project)* (smart digital solutions for safe and healthy food from farm to fork),
  FINISH *(EU FP7 project)* (future internet in the food industry),
  GLOPACK *(HORIZON 2020 project)* (innovative packaging, including RFID and digital solutions),
  IMS Food *(ERA-NET project)* (cost reduction techniques in the food industry, adjusted to specific conditions, facilities)
  … and more than 20 other international projects.

- A Working Group of the Federation of Hungarian Food Industries has developed the strategy for the modernisation of the Hungarian food industry through the application of digital and I4.0 solutions – under the leadership of Campden BRI Hungary – with representatives of the food industry, digital and I4.0 solution providers.

Further information:

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