# INDUSTRY

# 1, 2, 3, ... 4.0

*Digital technology is increasingly used in different production processes. This digital industrial revolution is also known as 'Industry 4.0'.*

*In this brAInfood you can read more about what* ***Industry 4.0*** *is all about, how* ***Belgium*** *is implementing it and what* ***obstacles*** *still obstruct the transition towards Industry 4.0.*

*Knowledge Centre Data & Society (2022). Industry 1, 2, 3, ... 4.0. brAInfood of the Knowledge Centre Data & Society. Brussels: Knowledge Centre Data & Society.*

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## What is industry 4.0?

Industry 4.0 refers to the **digital revolution** that is currently happening within the industry. In this brAInfood we focus especially on manufacturing. The increasing **digitalization** and **connectivity** between products, systems, chains and business models creates a 'smart factory'. Within a smart factory, production processes are able to adjust themselves, recognize signals and stop and restart themselves if errors occur.

Industry 4.0 consists of many different technologies, from AI to the Internet-of-Things and blockchain. You can think of technologies such as co-bots, robots that work together with humans, or logistic robots that can follow their own routes. This creates more flexibility in production and makes it possible to better respond to customer requirements.

## Industry 4.0 in Belgium

In Belgium, the transformation to Industry 4.0 is in full progress. On the Readiness for the Future of Productivity ranking of the World Economic Forum, Belgium currently ranks 17th.

Technology federation Agoria and innovation centre Sirris annually hand out Factories of the Future awards. Factories of the Future are companies that invest in digitisation, skills, smart processes and in world-class production. Currently, 48 Belgian companies can already call themselves Factory of the Future.

The Flemish government developed Vision 2050, a long-term strategy for Industry 4.0. Within that vision, a number of **projects** have already been introduced:

- Flemish companies can learn in test labs how they can optimise their processes with the help of technology such as cobots or Internet of Things sensors. A new project will start soon in Flanders, aimed at sustainable work.
- In 2014, the Flemish government established **Flanders Make**, a research centre that supports SMEs and large manufacturing companies with industry-driven research for products (vehicles and machines) and production (assembly).

## Obstacles

The transformation to Industry 4.0 may come with many challenges.

- In order to be able to interact with new technologies, the workforce must acquire **additional skills** and take **training**. This can also trigger the recruitment of new talent, although in times of labour shortages, this can be a difficult task.
- When introducing new technology, the employer must also ensure that the employees **accept the innovation** by, among other things, clarifying their concerns (less autonomy, loss of jobs, etc.).
- The **investment cost** of Industry 4.0 technology is high. For large companies, this investment is manageable, but for SMEs it is often a big and risky step. Moreover, the return on investment is usually not immediately tangible and additional investments might be necessary, such as in cybersecurity.
- Industry 4.0 needs a **good basic infrastructure** such as 5G technology, a mobile network that provides connectivity. In many countries, 5G technology is only available to a limited extent. The implementation of Industry 4.0 will largely depend on the expansion of the 5G network.

## What will the future bring?

Although Industry 4.0 is still in full roll-out, a **vision for Industry 5.0** is already being drawn up. This vision complements the existing Industry 4.0 approach by specifically putting technology, research and innovation at the service of the transition to a sustainable, circular and people-oriented industry. An industry that puts worker well-being at the heart of the production process and harnesses new technologies to provide prosperity beyond just economic and monetary growth, while respecting sustainability.

## Conclusion

Industry 4.0 developments have many benefits in supporting employees and to better respond to customers' desires. However, we need to make sure that the transition towards Industry 4.0 happens in a good way and that everyone on the workfloor will be involved in the process. In this way, we can ensure that everyone can (continue to) work in a comfortable way and that Industry 4.0 is worth the investment!

## The industrial revolutions

