



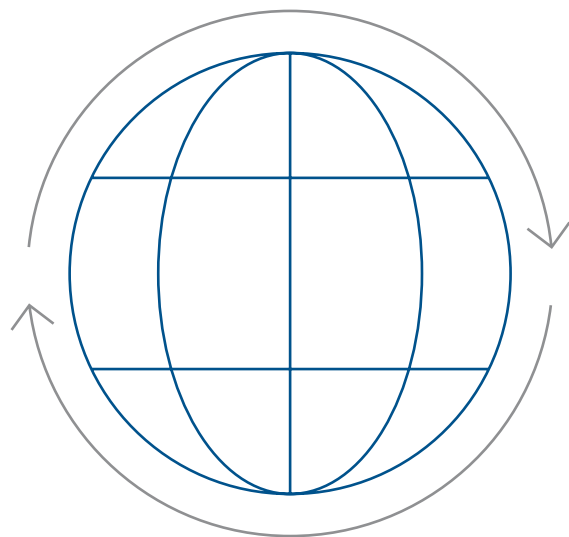
# IGS GeboJagema and Industry 4.0

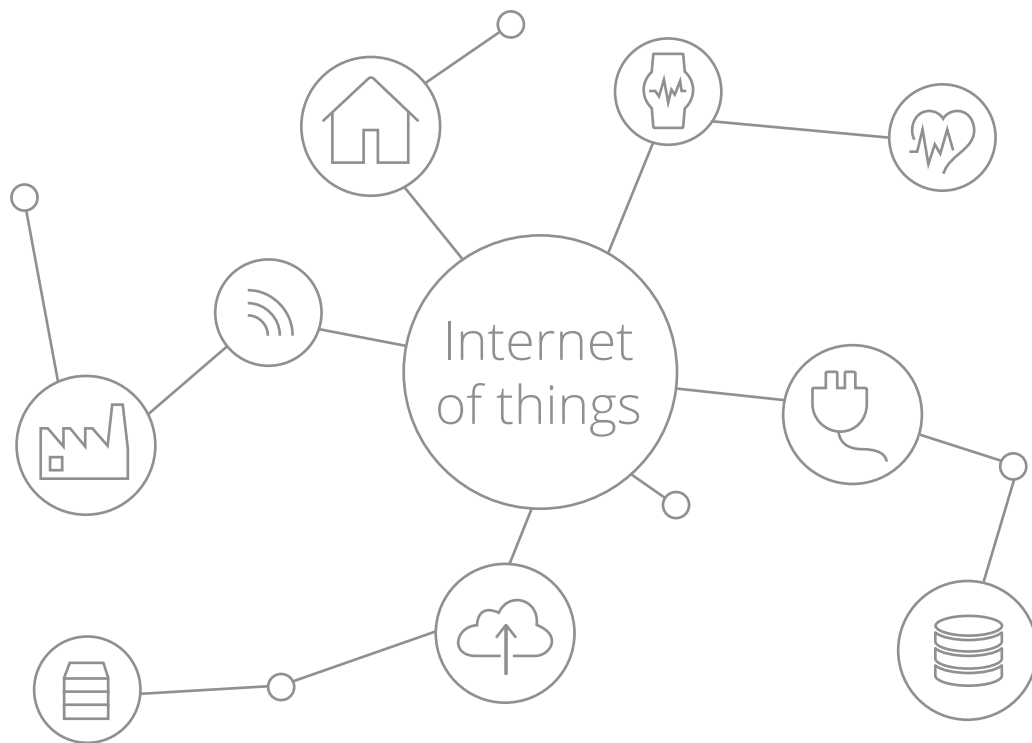
Peter Mertens, Chief Executive Officer, IGS GeboJagema, July, 2017

From Precision to Perfection

# IGS GeboJagemma and Industry 4.0

Industry 4.0. It's a term that pops up more and more often both online and in professional literature, together with concepts like the Internet of Things, Big Data and Smart Industry. But what does it really mean? Is Industry 4.0 just a hip catchphrase or should we expect the near future to bring radical changes to the way we work?






## The Revolution of Industry 4.0

It started with mechanization through steam power. Next, assembly lines enabled mass production. Then in the seventies, a massive change emerged once more with the introduction of computers in the workplace. Three industrial revolutions that forever altered the way we work, taking the world largely by surprise. But contrary to these first three revolutions, the fourth industrial revolution has been announced before actually arriving.

That next revolution is called Industry 4.0. It promises to revolutionise production through a combination of the Internet of Things, cloud computing, data-integration and other technological developments at the core of production systems.

The term Industry 4.0 was first used at the Hannover Messe in 2011. Ever since, production processes in Germany and the rest of the world have shifted up to a higher gear. Experts are divided on the speed with which the fourth industrial revolution will occur, but agree that Industry 4.0 is inevitable.



A man with a beard and glasses is looking down at a tablet computer. He is wearing a grey blazer over a blue and red plaid shirt. The background is a warm, orange-brown gradient. The text is overlaid on the right side of the image.

The two main ingredients of Industry 4.0 are cloud computing and the Internet of Things.



## What is Industry 4.0?

The two main ingredients of Industry 4.0 are cloud computing and the Internet of Things. Cloud computing provides access to apps, services, and data stored on a network (cloud) through an Internet connection. The Internet of Things uses the cloud to save and automate processes in objects. Think of your smartphone unlocking your front door and switching on the lights when you come home. Or your (self-driving) car telling your thermostat to turn on the heating because you'll arrive in twenty minutes.

Industry 4.0 connects the possibilities of cloud computing to the Internet of Things, allowing processes and devices to be operated remotely from any place on earth that has an internet connection. It will change production as we know it and have a big impact on the development of production systems.

Today's factories are expected to turn into 'smart factories' that manage internal processes and solve problems themselves. In these factories, the workflow, maintenance and management of the production process of each separate machine can be controlled remotely. But what turns them from evolution to revolution is the self-regulating capacity of the production line: factory machines and processes communicating independently via the cloud.





## Advantages of Industry 4.0

The most obvious advantage of Industry 4.0 is an increase in productivity and profitability. In late 2014, PWC published a study showing that companies that are already implementing Industry 4.0 solutions expect a productivity increase of 18% over the next five years. Integrating smart self-diagnostic equipment that can repair itself helps streamline processes and make versatile production decisions, which can make a significant impact to the bottom line. The introduction of decentralised systems also contributes to efficiency, flexibility and sustainable production, which is a must considering the increasing pressure on the industrial sector to produce more with fewer resources and less energy.

More productive and profitable companies aside, how will consumers benefit? We know how automation of the production line improves quality, consistency and reliability, but personalization has always been a cost issue. Industry 4.0 makes it easier to produce on order and deliver customised, personalized products at lower cost. Whether it's personalized T-shirts or customized, 3D-printed prosthetic legs. If the process can be adapted to the product produced, it will also be easier to make variations of that product.

## Humans, Robots and Industry 4.0

Humans have a love-hate relationship with the machine. While it offers opportunities in today's global market, we are also often afraid of how technical developments will play out for us. This is particularly the case with robots. Though they are 'just' machines, we still associate them with the 'replacement' of humans. Because of their shape and how we interact with them, we see them less as machines.

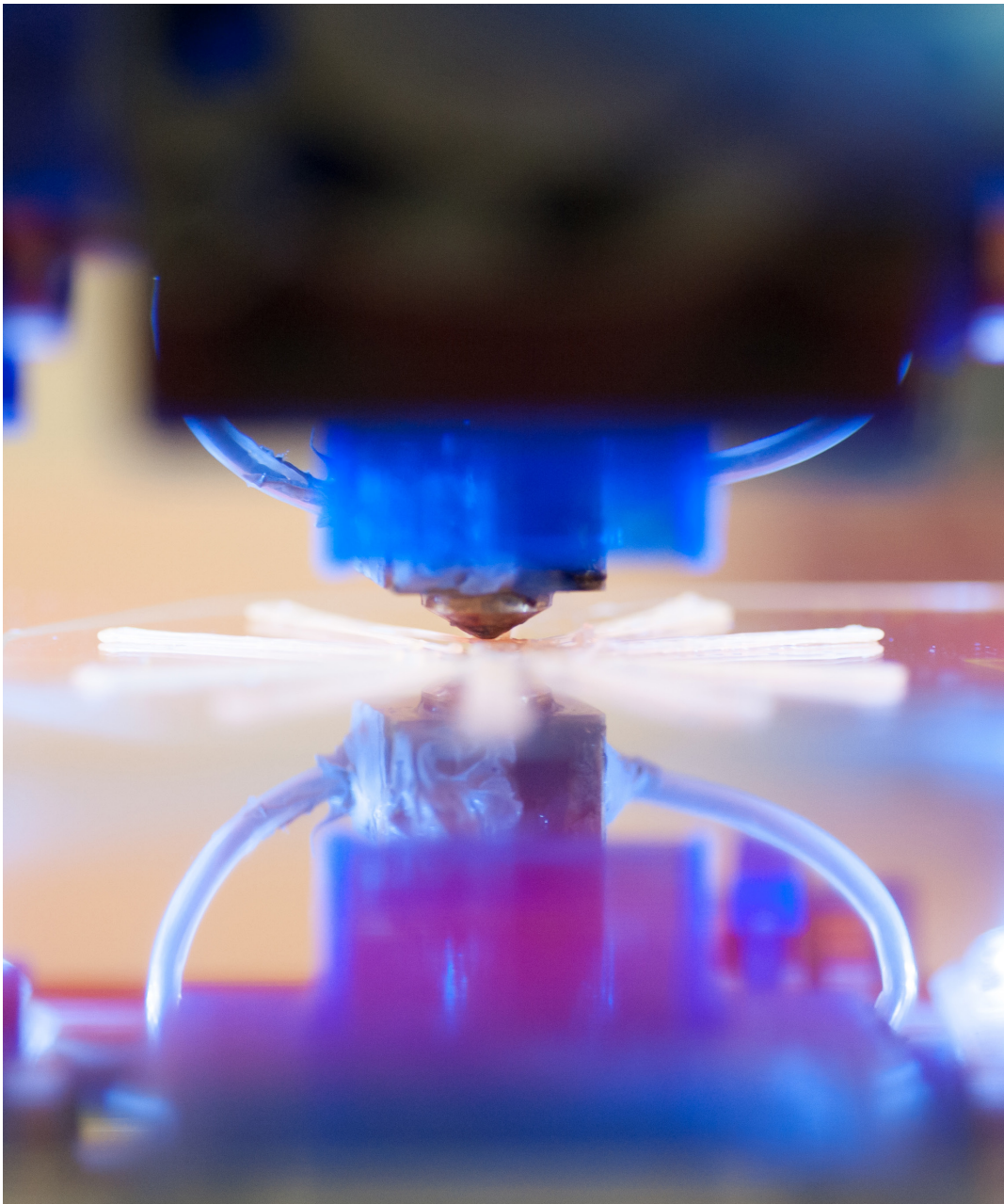
It is impossible to deny that the role that humans play in the production process has changed over the years. And to a large extent this is because of the use of all kinds of machines. However, robots and machines are also the reason that many production facilities have stayed in Europe. It is the reason that the industry in Europe is growing, even though many expected it to leave to China forever. The modernization of the industry has led to large scale reshoring. Companies still compete on price, but quality, flexibility and lead times have become equally important.





## Next Shoring and Industry 4.0

The shift that addresses that demand for flexibility and speed is called 'next-shoring' by McKinsey & Company. More and more, the modern manufacturer deals with products tailored to a customer's requirements. Short delivery times and high quality are basic conditions. The manufacturer has discovered that modern production tools such as 3D printing and robotics provide this flexibility and speed, making the production of unique products part of the 'standard' process.



# The Impact of Industry 4.0: Where Are We Now?

We are currently still on the eve of the fourth industrial revolution. When it arrives, it will not just overhaul the way factories work. The way suppliers, employees, engineers and analysts work will also undergo a revolution.

Of course, the change will not happen overnight. While some companies are considering how and when to transform their manufacturing process, others continue to deny the fourth Industrial Revolution. Some companies can simply not afford to revise their systems, let alone completely revolutionise it, while others have not kept up with the developments of the last industrial revolution. They will have to focus their energy on a practical and complementary approach, such as improving the efficiency of their production line and the quality of the product.

However, those that are already a step ahead, can bridge the gap by integrating the technology they already have with what will come. There are reports showing that by 2020, the European industry will invest at least € 140 billion a year in industry 4.0 applications. An encouraging number. Still, the fourth industrial revolution will not be implemented in our factories and production processes in the blink of an eye. That much is certain. Producers that want to avoid being left behind, would do well to start planning their digital transformation strategy today.







## Sources

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