

Dear Minister Mládek,
Excellencies,
Ladies and gentlemen,

let me start by expressing my gratitude for inviting me to this important conference. I very much appreciate the possibility to share with you some views on *Industry 4.0*.

Allow me to convey warm greetings by the Federal Minister for Economic Affairs and Energy, Sigmar Gabriel. He very much regrets that he is unable to join us today due to other commitments

I am honoured to speak to you today as a representative of the Czech Republic's most important trading partner. There are many good reasons why the Czech Republic and Germany should cooperate closely about the future of manufacturing:

In both countries, the contribution of industry to the GDP is significantly above the international and EU average. We both have very open economies with a high export share. We rely heavily on a knowledge- and innovation-based economy. Small and medium enterprises play a predominant role in our economies.

Against this background, it is fair to say that we are facing very similar challenges, risks and opportunities for the future.

One of the major challenges in the years ahead is without any doubt digitilization. In Germany we refer to it as the fourth industrial revolution and therefore call it *Industry 4.0*.

***Industry 4.0* means the merging of production technology and information technology. It means that people, machines, plants, logistics and products will communicate and cooperate directly with each other.**

Production and logistics processes between companies in the same value chain will be smartly connected in order to make production processes between companies more efficient and flexible.

Mind you: the smart new value chains will include not just the production process, but all phases of the product's life cycle – from concept to development, manufacturing, use and maintenance, on to recycling.

According to a study published by the Fraunhofer Institute and BITKOM, the total gross value generated in Germany as a result of *Industry 4.0* may increase by more than 250 billion Euros in the next ten years.

Customised manufacturing and remote maintenance of products will become the new standard. At the same time, we will experience an enhanced quality – due to customization of products – and a reduction in costs – due to a shortened time-to-market, and due to savings in raw materials, energy and transport costs.

This is because production processes can be managed between companies in a way that raises efficiency and productivity. A company will be able to react swiftly to changes in the availability of specific raw materials or to servicing needs of a certain machine.

In a digitalised value chain, individual parts ‘know’ what they are, how they need to be processed, where they belong, and how to communicate with the production systems.

Hence, productivity is expected to increase by up to 30% [*Estimate by Akademie der Technikwissenschaften*]. Costs could fall by 2.6% per year [*PricewaterhouseCoopers*].

New production processes will play a predominant role in this evolution. Take 3D printing, for example: By using 3D printing, up to 90% fewer resources are needed. In addition, transport costs can be significantly lowered – only raw materials and software have to be transported, not the final product.

Digitilisation of industrial manufacturing processes will do more than change value chains. It will also create new business models, for example in order to manage, process and safeguard big data.

And certainly, digitilisation will also have a massive impact on employment. No one can give you a definite answer on this issue today. There are indications, however, that we may not see a huge loss of jobs at all, and maybe even the opposite: according to a study of Boston Consulting Group, 400.000 new jobs could be

generated in Germany in the next 10 years. One thing seems clear: Jobs in industry will become more complex and demanding. Every digitisation project has to be designed, implemented, supervised and updated. The need for well-qualified technicians will grow. Therefore education will become even more crucial than it is today.

Ladies and Gentlemen,

the successful implementation of *Industry 4.0* will depend on five major factors:

First, we need a well-developed digital infrastructure. Over the next few years, the amount of data and the number of connected devices will increase exponentially: There are currently around 3 billion connected devices around the world. Only seven years from now, this figure will reach 25 billion.

Second, we need to achieve a high degree of openness to digital solutions in company management, in the workforce, and in the general public. New business models and work patterns can only be successfully introduced if there is a consensus between companies and their employees.

Third, we must raise awareness within small and medium-sized companies. *Industry 4.0* must reach the companies in the regions and become an integral element of their business models.

Fourth, the level of training among employees will play a major role. The German dual system of vocational training will have to keep

pace with the new challenges faced. And we also need to make sure that people whose experience becomes outdated are given the extra training they need.

Last but not least, we must intensify international cooperation. Coordinated solutions with leading industrial regions in Europe and the world, especially regarding standards, are crucial for successful implementation of *Industry 4.0*.

For a project of this complexity to be successful, we need to cover a multitude of questions at the same time – technical progress, standards, an appropriate legal framework, data security, education.

Germany has launched an *Industry 4.0* platform to ensure that all the players involved – in government, commerce, academia and trade unions - cooperate efficiently and pull in the same direction. The platform aims to develop a common understanding of *Industry 4.0*, to draft recommendations for the various fields of action, and to present 100 successful examples of *Industry 4.0* in action at our IT Summit on 19 November 2015.

One of its main intentions is to motivate small and medium-sized companies to implement digital technology in industrial production more quickly.

To this end, the *Industry 4.0* platform has set up various working groups dealing with specific issues.

The working group responsible for data security for example will develop a short set of guidelines for SMEs that will help them implement IT-security across individual companies. It will also develop specifications for the skills needed by members of the workforce who will apply IT security at their companies.

Another example: standards will be of utmost importance in *Industry 4.0*: Standards decide who can speak when with whom, and who is understood.

We need to address the issue of standards at European level. The digital internal market needs to be completed as swiftly as possible.

Ladies and gentlemen,
the times, when industry was regarded by some as something old-fashioned, are over. Today, the whole world speaks about re-industrialization. We want Germany to stay at the cutting edge of industrial progress. That's why we do industry 4.0 And that's why we are seeking "brothers in arms" – and giving the many things our economies have in common, I am convinced that the Czech Republic will be a very valuable partner for us. It would therefore be good to include Industry 4.0 in the new Czech-German Strategic dialogue.

There is an enormous potential in digitilisation: products and services can be made cheaper, better customized and of a better quality. But if we fail to seize the opportunities of digitilisation,

others will do so. A great part of the Czech and German industry success stories would be in danger, probably in existential danger.

Therefore I am very grateful to the Czech-German Chamber of Industry and Trade for having chosen "*Průmysl 4.0 - rEvoluce probíhá*" as its annual topic 2015. And I am very glad that this topic is under the auspices of the Office of the Government and the Ministry of Industry and Trade. The Czech-German Chamber will host a conference on this issue here in Brno tomorrow, which will bring together top representatives of companies and research organizations like Fraunhofer – I am sure that there are still seats available!

I thank you very much for your attention.