Industry 4.0

“Industry 4.0” is the subset of the fourth industrial revolution that concerns industry. The fourth industrial revolution encompasses areas which are not normally classified as an industry, such as smart cities, for instance. Although the terms "industry 4.0" and "fourth industrial revolution" are often used interchangeably, "industry 4.0" factories have machines which are augmented with wireless connectivity and sensors, connected to a system that can visualize the entire production line and make decisions on its own. In essence, industry 4.0 is the trend towards automation and data exchange in manufacturing technologies and processes which include cyber-physical systems (CPS), the internet of things (IoT), industrial internet of things (IIOT), cloud computing, cognitive computing and artificial intelligence. The concept includes: Smart manufacturing Smart factory Lights out (manufacturing) also known as dark factories Industrial internet of things also called internet of things for manufacturing Industry 4.0 fosters what has been called a "smart factory". Within modular structured smart factories, cyber-physical

systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real-time both internally and across organizational services offered and used by participants of the value chain. The determining factor is the pace of change. The correlation of the speed of technological development and, as a result, socio-economic and infrastructural transformations with human life allow us to state a qualitative leap in the speed of development, which marks a transition to a new time era.

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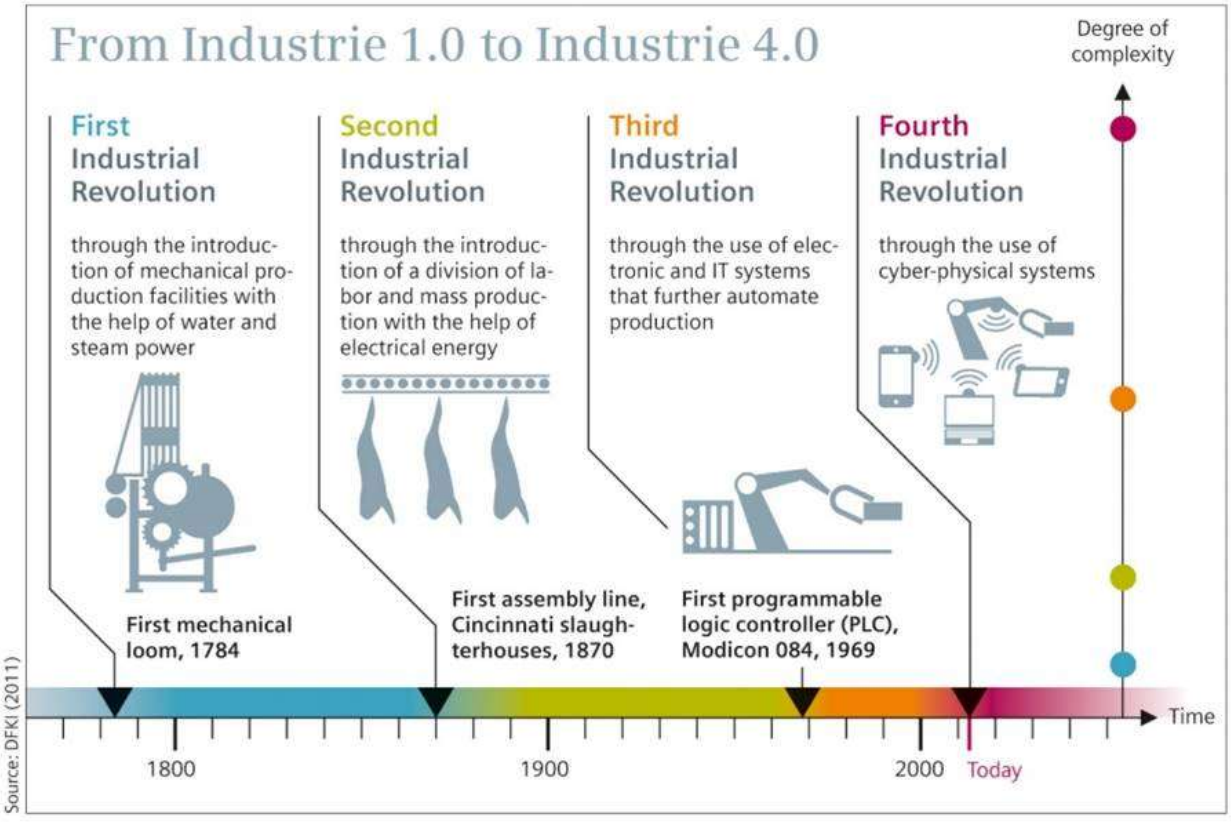
Before Industry 4.0

Industry 1.0 refers to the first industrial revolution. It is marked by a transition from hand production methods to machines through the use of steam power and water power. The implementation of new technologies took a long time, so the period which this refers to it is between 1760 and 1820, or 1840 in Europe and the US. Its effects had consequences on textile manufacturing, which was first to adopt such changes, as well as iron industry, agriculture, and mining although it also had societal effects with an ever-stronger middle class. It also had an effect on British industry at the time.

Industry 2.0; the second industrial revolution or better known as the technological revolution is the period between 1870 and 1914. It was made possible with the extensive railroad networks and the telegraph which allowed for faster transfer of people and ideas. It is also marked by ever more present electricity which allowed for factory electrification and the modern production line. It is also a period of great economic growth, with an increase in productivity. It, however, caused a surge in unemployment since many workers were replaced by machines in factories.

The third industrial revolution or **Industry 3.0** occurred in the late 20th century, after the end of the two big wars, as a result of a slowdown with the industrialization and technological advancement compared to previous periods. It is also called digital revolution. The global crisis in 1929 was one of the negative economic developments which had an appearance in many industrialized countries from the first two revolutions. The production of Z1 (electrically driven mechanical calculator) was the beginning of more advanced digital developments. This continued with the next significant progress in the development of communication technologies with the supercomputer. In this process, where there was extensive use of computer and communication technologies in the production process. Machines started to abrogate the need for human power in life.



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