

Industry 4.0 – Where does this leave the Human Factor?

Holger Kinzel
Germany

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“Industry 4.0” is the new buzzword in many parts of the producing industry. It involves the entire value chain process in manufacturing and producing goods and providing services. The idea behind this “4th industrial revolution”, as it is also called, is to connect not only all elements of the value chain process itself into one single system but to include many parts of our day-to-day life being connected through “smart” information technology systems”. The so called “Internet of Things” is part of the system, in which our fridge already orders foodstuff before we even have thought about what to be put on our shopping list.

Every system based on information technology (= computers) includes human-machine-interfaces. An analysis of accidents and mishaps shows that in many cases the complexity of the human side of this interface is underestimated. Often it is not one single person communicating with a system but a group of people is involved, with all the group dynamics and conflicts that a group of humans comprises of. The “smart” systems will not expect any illogical behavior on the “outside”, leading to the old term that is true for any automated system: “garbage in – garbage out”.

Secondly, and this is even more challenging: the new systems are not just there but they are being designed – by humans. Here is another source of errors in this system. How does the group of people designing the system know what the users on the other side of the human-machine interface expect? How do they make sure that the system is designed for those who shall possibly benefit from it? How are the needs of those people met? How can we make the typical computer nerd part of a design team that includes the human factor?

If we don’t succeed, the result might end as other industrial revolutions have ended: people are being left entirely out of this process or at least they feel they are not really belonging to it. It might lead to frustration, the feeling of being excluded from society, which further leads to instabilities in our societies worldwide.

The presentation does not contain any universal answers but gives a few suggestions for discussion. We need a mediating process that makes sure that all sides may include their suggestions, their needs and interests so that the human factor is included in the design process of “Industry 4.0”.

Holger Kinzel, born in 1957 in Cologne/Germany, is married and father of two grown-up daughters. During his youth and later during his business life Holger spend several years abroad, living a total of five years in Egypt. He studied at the Technical Universities of Aachen and

Clausthal and graduated as a Diplom-Ingenieur (= German engineering degree, equivalent to a M.Sc.) in 1983. The majority of his career he spend in internationally operating service companies, mainly involved in the exploration and production of oil and gas. In 2013, Holger decided to take a Sabbatical Year and, after that, to pick up some new challenges. In 2014 Holger founded a small, one-man engineering and consulting company. In 2015 he started to study mediation at the University of Hagen and he received his Master of Mediation degree in February 2016. Additionally, in 2015 Holger was invited by the Technical University of Freiberg to do further research and to write a PhD thesis on the use of mediation and mediative elements to integrate the human factor in risk assessments in order to improve work safety at the.