THE DIGITAL FACTORY IN 2019 "IMPLEMENTATION - MADE EASY"

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Touching Innovations

"Only 20 minutes to go…"

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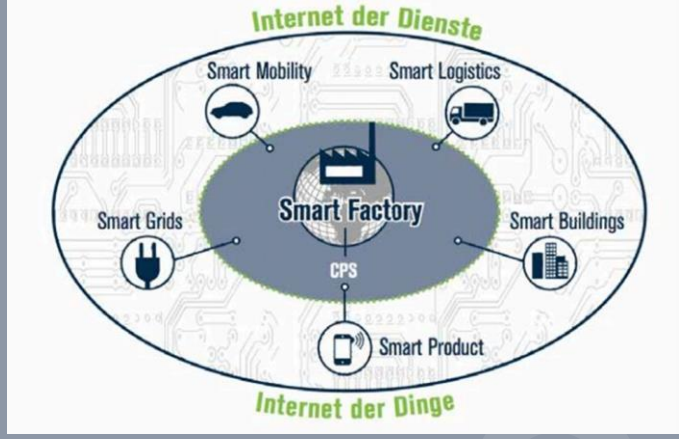
Talking about Digital Factory is “stupid” without addressing **BIG DATA & DATA MINING** first…



A very short intro…

- Big data and data mining are **key technologies** that companies use to develop new business models.
- In the field of production technology, these key technologies, especially in combination with the **Digital Factory**, open up new possibilities in the design and control of product and production systems.
- The **Digital Factory** is the generic term for a comprehensive network of digital models, methods and tools for the **simulation and visualization of production facilities, factory processes and logistics.**
- The **aim** is to enable a **holistic planning, evaluation and continuous improvement** of all essential **structures, processes and resources** of a real factory in connection with products.

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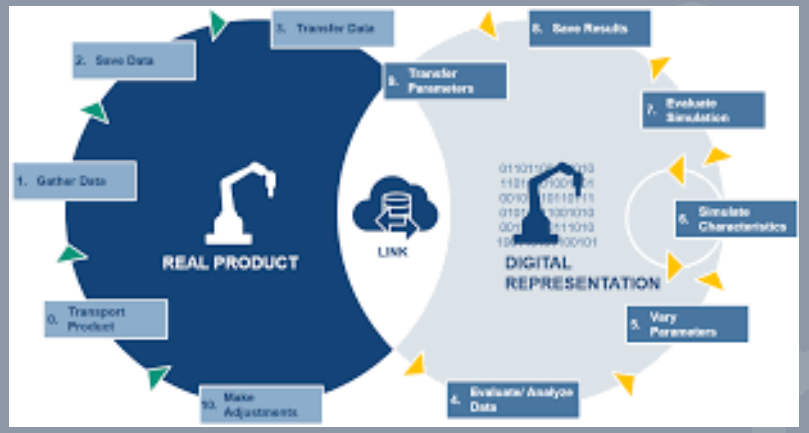
Digital Twin



The Digital Twin - as one of the most important elements for digitalization in a Digital Factory until now…

- Looking at the Digital Twin – A core component of a Digital Factory, the penetration of the new factory with data and thus also its digitization.
- Here we do not look at their concrete technical implementation. Currently, the digital twin (Digital Twin) is being promoted as a central solution.
- Unfortunately, there is often no clear definition regarding its scope of functions. He is rather considered a "panacea“ – or “Allerheilmittel” (in German).

What does it mean?

- All physical objects should be represented in the Smart Factory (at least in 2025) by appropriate digital images. Thus, the granularity of the digital image is determined at the same time.
- In concrete terms, every machine, every tool, every part and every product to be produced has a digital image. As a result, in the digital image of the real factory, a large number of twins also exist in the factory building.

Getting Smarter…

Smart Machines

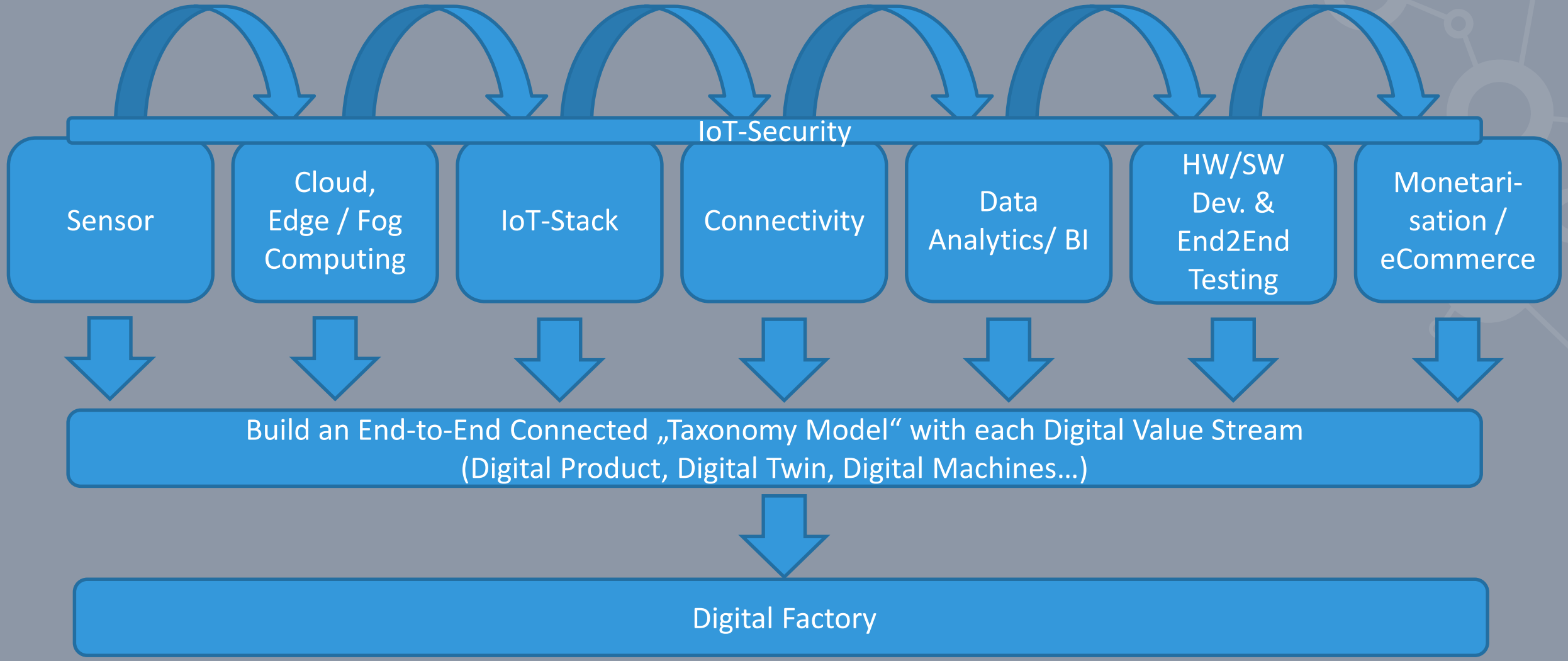
- Unfortunately, what has been said so far does not really help - because the approach is simply too individual. All the twins in their different forms must be able to build up knowledge about themselves. Specifically, this means they have to "know" what functionality they have.
- Machines and systems should also be "intelligent", i.e. self-controlling and thus self-learning & self-optimizing.

Smart Products

- In addition to the machines and tools, of course, the products to be produced are becoming smarter - that is, more intelligent.
- Via the Digital Twin they get "a kind of consciousness".
- They gain knowledge about their condition, how they are to be produced and are capable of self-control. This can be illustrated by the example of cars. About the functionality of autonomous driving the cars would be able to control themselves through the final assembly.

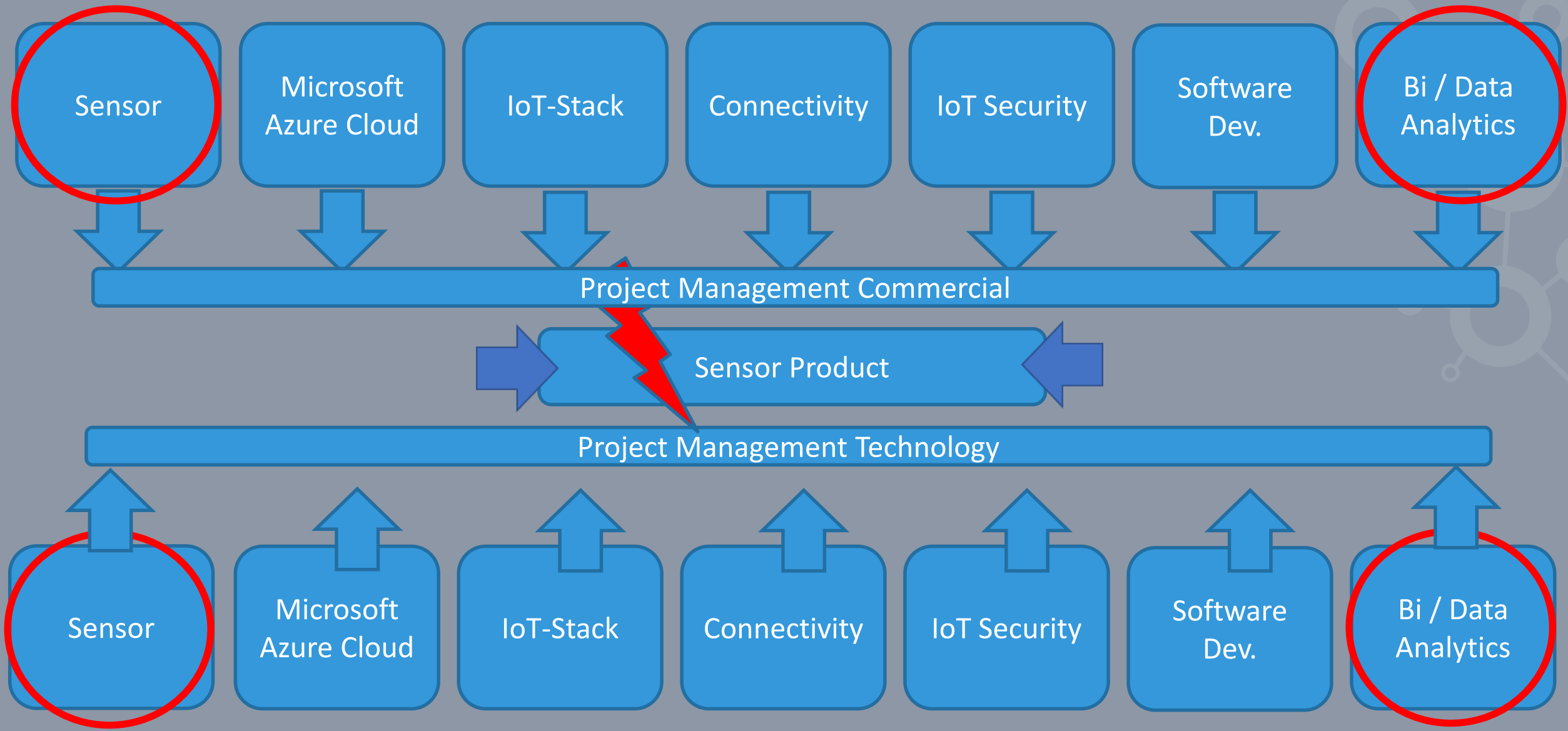
Digital Factory – The easiest way

Create a kind of „Digital-Taxonomy Model“ for your company for each stake of your Digital business!



PLEASE - Don‘t do it like this…!!

„Condition Monitoring & Predictive Maintenance “ in a Digital Factory…



Re-Think about it… Only one minute left! ;-)

Finally …

- It‘s not easy to build a fully „Smart Factory“ – beside the fact that enabling Technologies are existing.
- Scalable solutions for diverse business requirements are already existing as well, don‘t focus on „platform only“ topics.
- Data-Ownership has to be discussed more deeper than expected in the future of a Digital / Smart Factory – „who is the owner of the produced / collected data“?
- End-2-End Security is a „Neverending topic“ in smart factory eco-systems.
- A concept / digital roadmap is needed for a change of an existing fabrics or a new build estate / building. An End-2-End „Strategy“ with technology & business scope is needed
- Start with simple digitalization tasks, but never forget the „Big Thing“!
- Not only the Factory gets „more Digital“ – even the products inside are changing - from analog to digital - regardless of whether they are actually physically produced in the classical sense.

FINAL QUESTIONS?

Thank you for your patience!

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