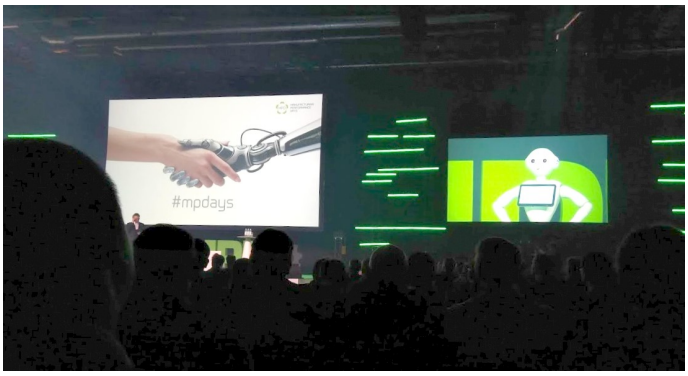
Notes from Manufacturing Performance Days 2019

Digital Twins and Artificial Intelligence May 4-6th 2019 in Tampere

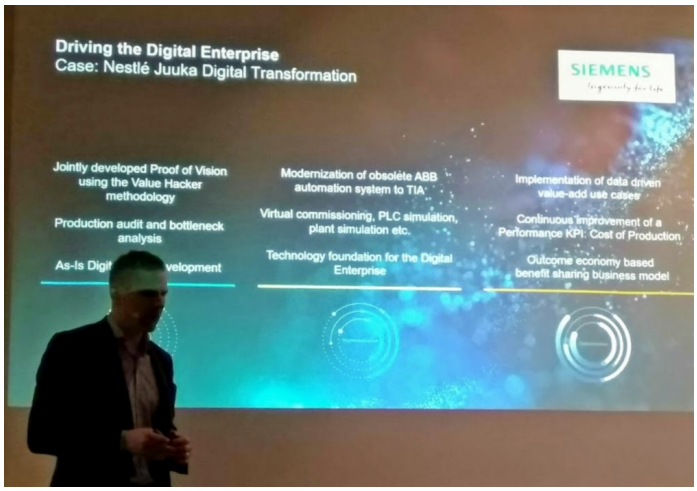
Jyrki Savolainen post-doc researcher at LUT University

I participated in #MPD2019 #mpdays in Tampere (Finland) on the 5th June. The event is an *"executive and visionary seminar for manufacturing industries, researchers and technology and service providers worldwide"* organized by Dimecc Ltd, which is a "co-creation ecosystem" for the Finnish technology companies.

According to presenters, **Ilmari Veijola** and **Tuomas Humalajoki** in the Siemens-organized session, simulation models are reaching an unprecedented level of detail and realism, which has been dubbed as *"digital twin"*-technology, and simply refers to the fact that the simulation models are digital images of the technical real-world reality that they depict.



Opening plenary session co-hosted by a robot



Tuomas Humalajoki presenting an industry case-example from Nestlé Juuka, where simulation (digital twin) -approach has been adopted as the key tool to search and verify future process improvements

These high-fidelity models are now used in expanding the industrial application areas of simulation:

when models are extremely life-like the simulation results become very credible. This means that prototype-building and testing are needed less, as many problems and outcomes can be figured out by way of simulation.

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Company ***Also Finland*** presented a demo application of artificial intelligence calculating the number of bananas and oranges in a basket

Ville Hulkko talked about how "*Artificial Intelligence*" (AI) can be used in designing autonomous cars and other unmanned vehicles.

He stressed out that current AI-applications controlling the unmanned vehicles are not yet autonomous, but require a regular human intervention.

I see the topics as an area of research that are of high relevance when designing new automated factories.

These topics are addressed in the strategic research funded project "*Manufacturing 4.0*" .

As concluded by **Prof. Hermann Simon** in his plenary session speech, one of the strengths of Finnish industrial sector is the open communication between companies, universities and research institutes. Based on this year's MPD, I couldn't agree more.

Laser show before the plenary session

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