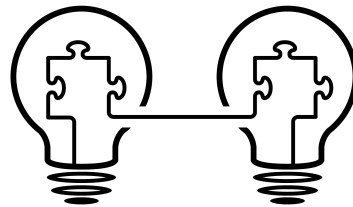




INNOVATION
THROUGH
COLLABORATION

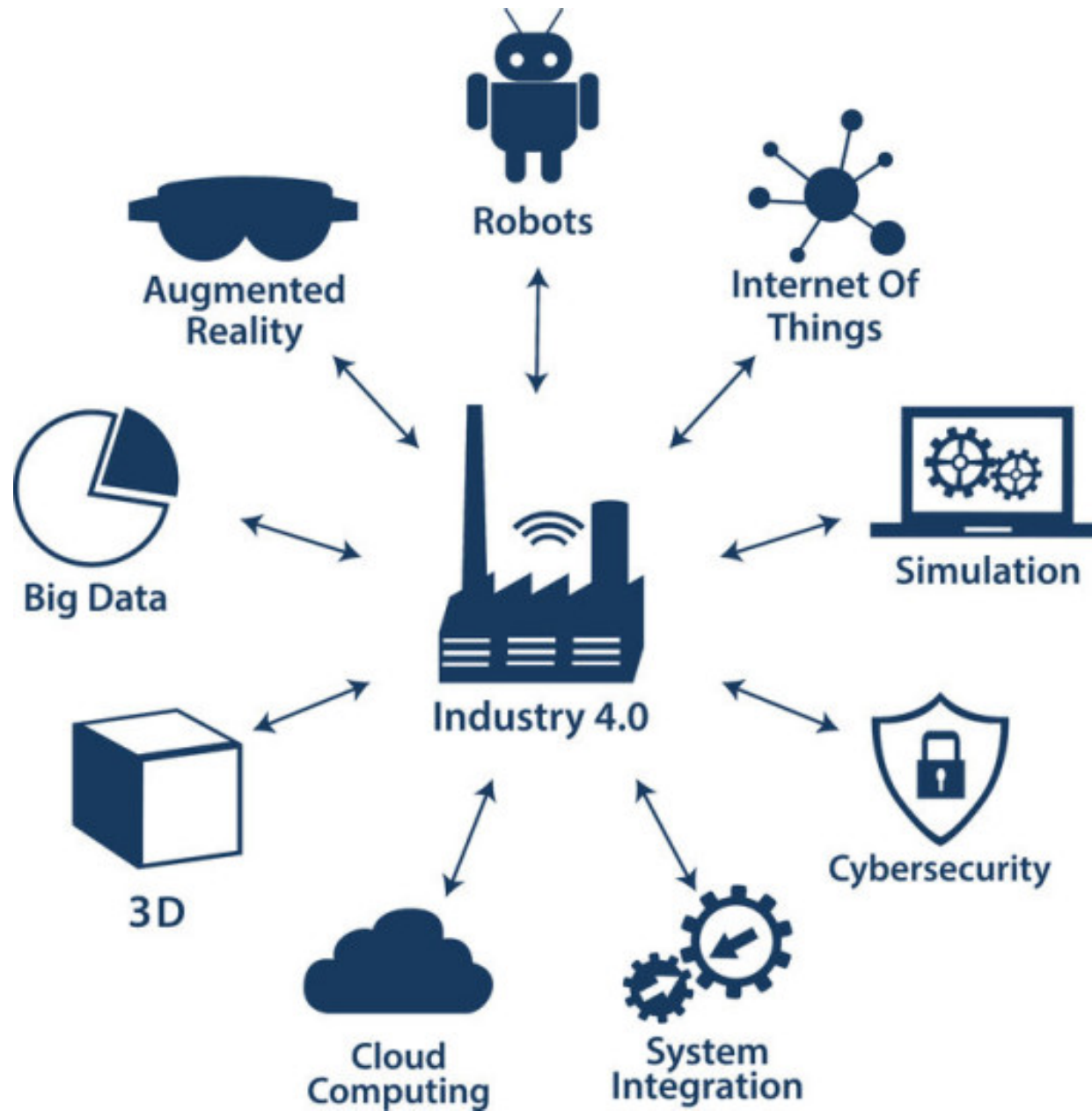
SMART PRODUCTION /
WORKFORCE OF THE FUTURE

Processen verbeteren cross-industry inspiratie



Processen verbeteren (Slob)

Hoe kunnen we het productieproces – op de werf – radicaal beter maken
door inzet van Smart Production-technieken?



Integreer disparate en externe data (Siemens)

Jagannath Rao, head of data-driven services at Siemens, says the biggest game-changing aspects of the IIoT (industrial IoT) include the ability to integrate disparate data sources in a manufacturing plant with ease and, using the latest sensor technologies, the ability to measure almost anything in an unobtrusive way.

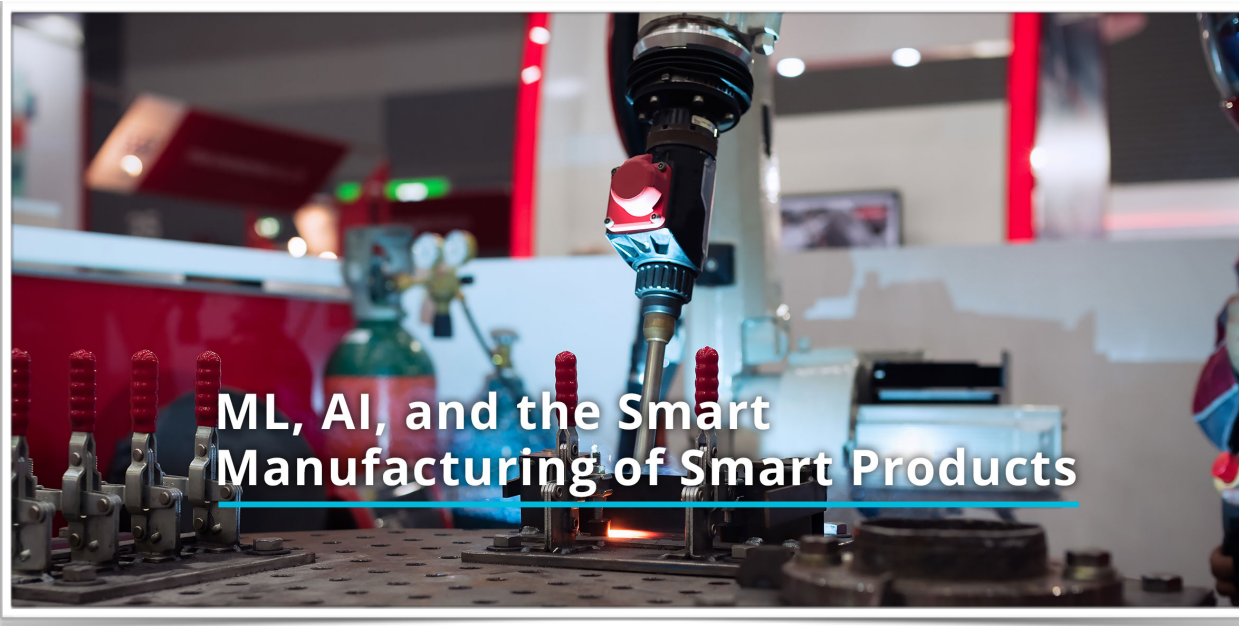
“The combination enables the generation of large datasets with diverse features, and to these we can even add external data sources like weather, logistics, dynamic electricity pricing, etc.,” Rao says. “As a result, we can now apply cutting-edge modern technologies like machine learning, deep learning, AR (augmented reality), visual analytics, etc., on these datasets and build far more real models of any predictive aspect of manufacturing and process optimization.

This not only enables accurate decisionmaking but also reduces the response time to minutes and hours compared to traditional methods.”

What’s more, these technologies create the opportunity to gather insights into the entire manufacturing value chain.

Leren van defensie

Computer is het wapensysteem, data de munitie



ML, AI, and the Smart
Manufacturing of Smart Products

Data Science Cell kraakt hersens op 'big data'-vraagstukken

Door gebruik te maken van 'big data' wil de Koninklijke Luchtmacht haar informatiedominantie vergroten. Want kennis geeft een voorsprong op de tegenstander. Om de mogelijkheden van big data te beproeven, werkt een team dataspecialisten het komende anderhalf jaar samen in de Data Science Cell. Luitenant-kolonel Tonny stuurt dit team van professionele data-pioniers aan. "Mijn 'cell-genoten' zijn zeer intelligente mensen."

De luchtmacht is in transitie. Onder de noemer '5e generatie luchtmacht' investeert het Commando Luchtmacht de komende jaren in wendbaarheid van de wapensystemen, versterking van het operationeel niveau en het verkrijgen van informatiedominantie. "Want dat maakt je sneller, sterker en beter", geeft Tonny aan. "Met de juiste kennis kunnen we sneller besluiten nemen en acteren. Daarvoor moeten we dus ook sneller informatie vergaren, analyseren, verrijken en delen."

<https://magazines.defensie.nl/vliegendehollander/2017/11/5e-generatie>

Leren van landbouw

Artificial Intelligence in the Agricultural Industry – Insights Up Front

Based on our research, the most popular applications of AI in agriculture appear to fall into three major categories:

- **Agricultural Robots** – Companies are developing and programming autonomous robots to handle essential agricultural tasks such as harvesting crops at a higher volume and faster pace than human laborers.
- **Crop and Soil Monitoring** – Companies are leveraging computer vision and deep-learning algorithms to process data captured by drones and/or software-based technology to monitor crop and soil health.
- **Predictive Analytics** – Machine learning models are being developed to track and predict various environmental impacts on crop yield such as weather changes.



De eerste zelfrijdende voertuigen waren tractoren!

<https://www.techemergence.com/ai-agriculture-present-applications-impact/>

It's Not Smart Tech If It's Foolish

As American mountaineer Ed Viesturs famously said of climbing Mount Everest: "It's a round trip. Getting to the summit is optional, getting down is mandatory."

And we can't help but think of Sir Mallory as we watch the proliferation of **smart devices** that have taken shelf space by storm over the last 18-24 months, as a lot of the inspiration for creating them seems to be not because it's there, but because they can.

Don't get us wrong: There are many, many smart connected devices – speakers, cars, appliances, watches – that are all very useful because they make buying something easier, houses more secure, financial management less tedious or commuting to work more productive.

And then there is the other stuff that might be technically smart, but not all that useful.

The Notorious Smart Hairbrush

With the first introduction to L'Oréal's "smart hairbrush" technology, the Kérastase Hair Coach, at the **Consumer Electronics Show** in 2017, the world certainly took notice. Granted, most of that attention was dedicated to asking why anyone would ever need such a thing, but it certainly captured a lot of buzz.

And L'Oréal had an answer as to why. Sure, the average consumer hairbrush was doing the job of removing the tangle – but they believed that with a little upgrading, it could do so much more.

The brush is designed to be its owner's partner in haircare. Powered by **Nokia technology**, the hairbrush comes with a microphone (which listens to the sound of brushing so it can identify patterns); an accelerometer and a gyroscope (to analyze brushing patterns and count brush strokes); and sensors (to determine if the brush is being used on dry or wet hair). The brush can then take all the data it has gathered and provide users with reports on how well they are brushing their hair – and to offer tips on not brushing too hard and when they are at risk of overbrushing.

And it would have been available for the bargain price of "under \$200," according to L'Oréal.

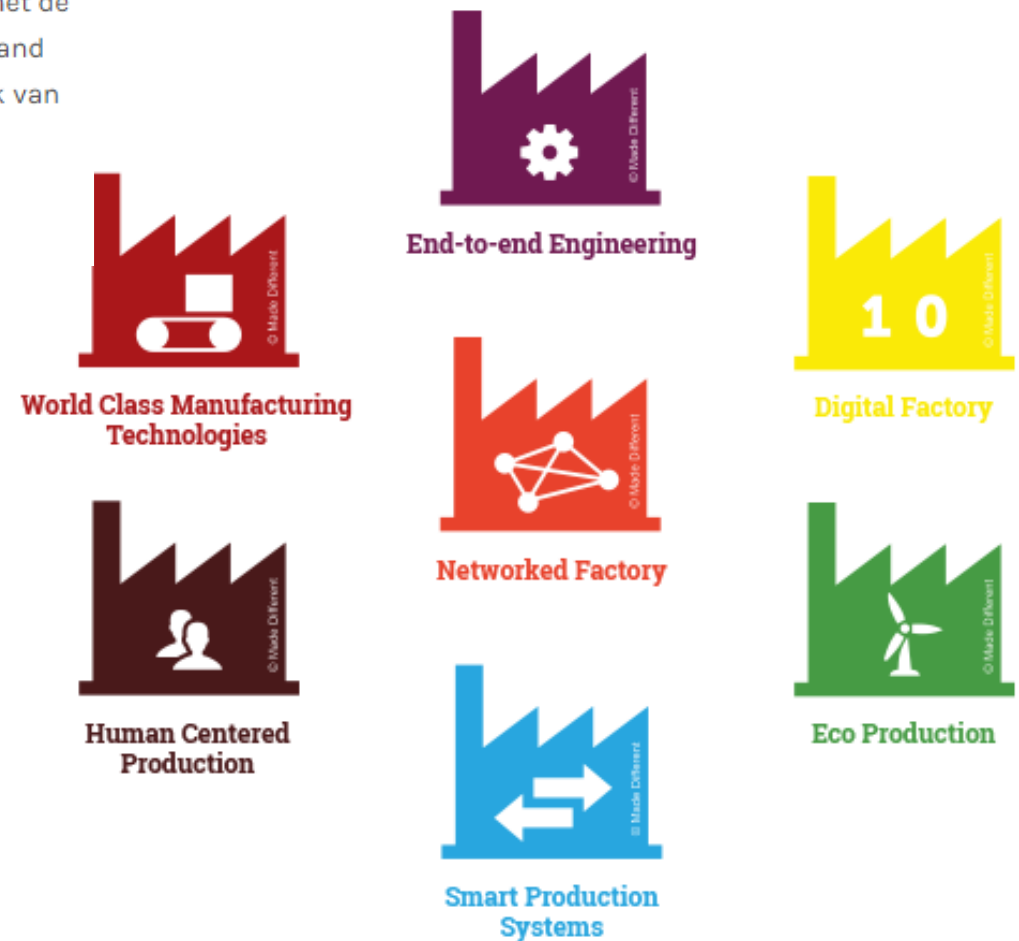
The smart hairbrush didn't do anything that a good mirror in the bathroom couldn't.

<https://www.pymnts.com/news/artificial-intelligence/2018/voice-assistants-smart-products-internet-of-things/>

Bekijk het geheel: 7 sleuteltransformaties

Het actieplan **Made Different** maakt van deze uitdagingen net opportuniteiten met de steun van **Agentschap Innoveren en Ondernemen**. Hoe doen we dat? Aan de hand van **7 sleuteltransformaties**, die uw bedrijf transformeren tot een heuse Fabriek van de Toekomst.

[Discover the 7 transformations](#)



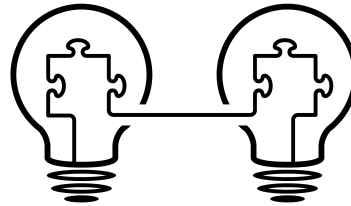
3 oplossingen voor de toekomst

Een recent gepubliceerd onderzoek van een Duitse universiteit (kost: 250 miljoen euro) over interne fabriekslogistiek geeft drie sleuteltrends prijs voor toekomstige productiesuccessen:

1. ***Volledig flexibele en modulaire fabrieken*** die nog complexere vraagprognoses kunnen behandelen dankzij verhoogd maatwerk. De modulariteit vereist een consequente decentralisatie van (meestal ERP-gelinkte) systemen om de onafhankelijkheid van de infrastructuur van het gebouw te behouden.
2. ***Digitale simulatie van fabrieken en productieprocessen***, om op ieder moment te weten wat we krijgen voor welk budget. Als een wijziging vereist is in een productiesysteem wordt een digitale simulatie op poten gezet om de gevolgen ervan in kaart te brengen.
3. ***Paradigmawisseling in interne logistiek*** om te voorkomen dat dure productiesystemen overbodig worden bij technologische veranderingen. Bij automatiseringssystemen gebaseerd op transportbanden is de terughoudendheid vaak hoog om zelfs enkele lijnen van de PLC-code te wijzigen. Modulair, decentraal en systemen onafhankelijk van infrastructuur nemen dit obstakel weg.

Principe: combineer met nieuwe tech trends

A.I.
Blockchain
Cloud
Drones
Experiences (immersive, ...)
Facial recognition
Grids and energy storage
Hacking
Internet of things
Jet-pack
Killer app
Li-Fi
Mixed reality (augmented, virtual ...)
Voice assistance



Neural networks
Open source
Predictive Cybersecurity Systems
Quantum computing
Robots
Smart data (big, ...)
Teleportation
User ...
Virtualization of processes or services
Wearables
X-combinations
Y3K ;-)
Zettaflop
3D printing

Use standards

Ryanair

Standard Fleet: Ryanair uses a single type of jet (Boeing 737) for its entire fleet. This enables Ryanair to reduce its Maintenance, Repair and Overhaul costs, reduce its staff training, and increase flexibility in staff allocation.



IKEA

