


Where innovation starts
 TU/e Agri & Food

High Tech AgriFood Disruptions

Maarten Steinbuch

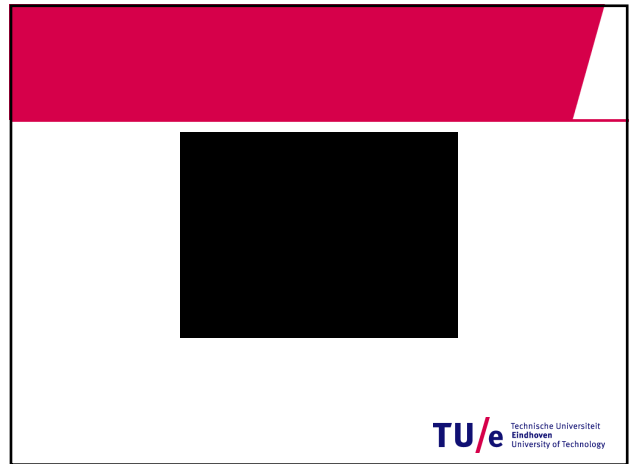
1 juni 2016




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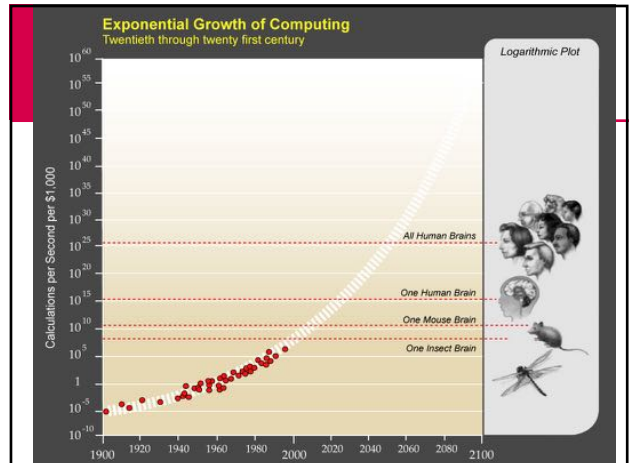
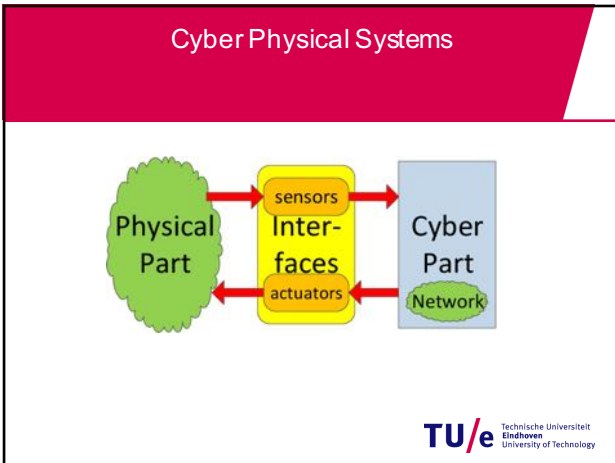
 AgriFoodTop 2016
 From science to business

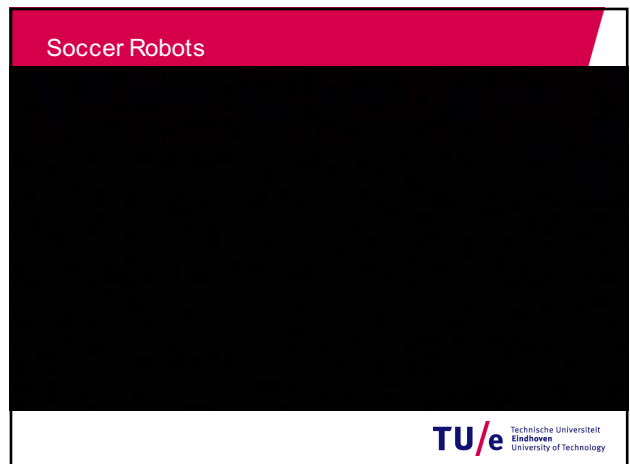
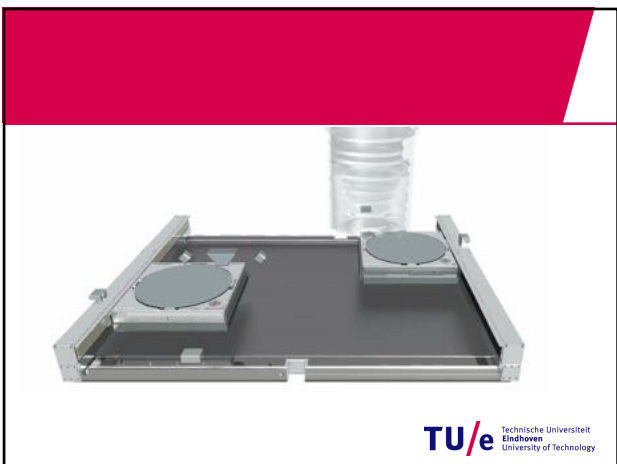
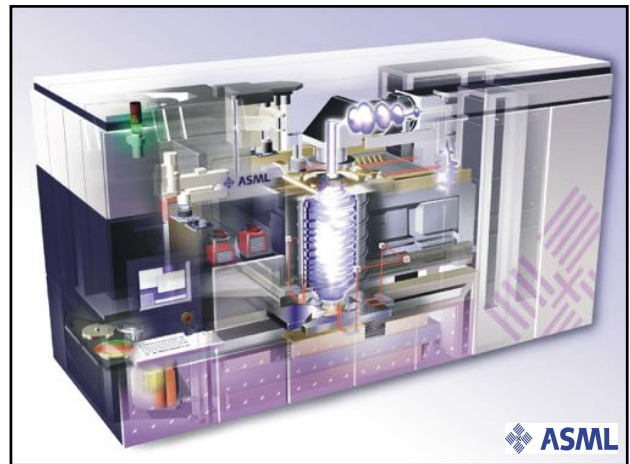
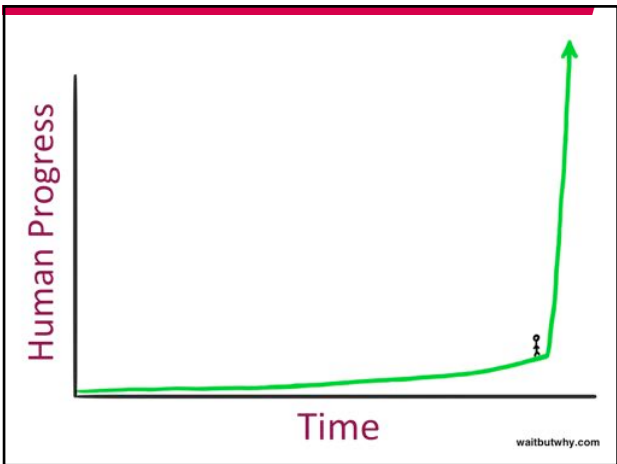
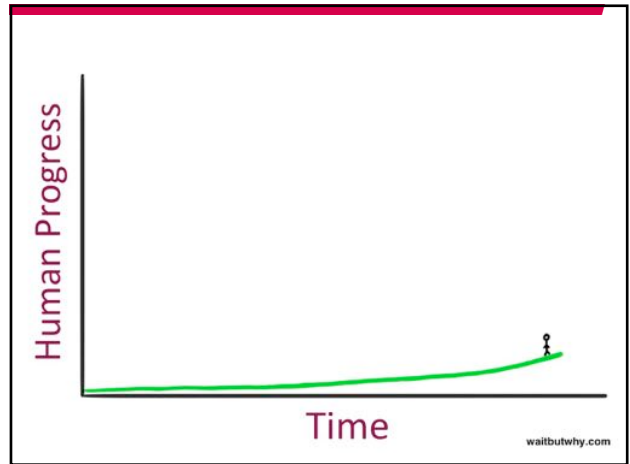
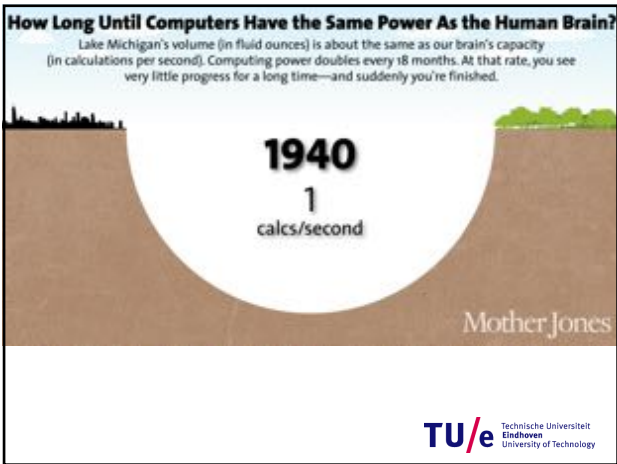


The Human in 2045?




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RoboCup@Home






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Smart Robotics & Industry 4.0?



HIGH TECH CAMPUS EINDHOVEN
TURNING TECHNOLOGY INTO BUSINESS

Eye surgery

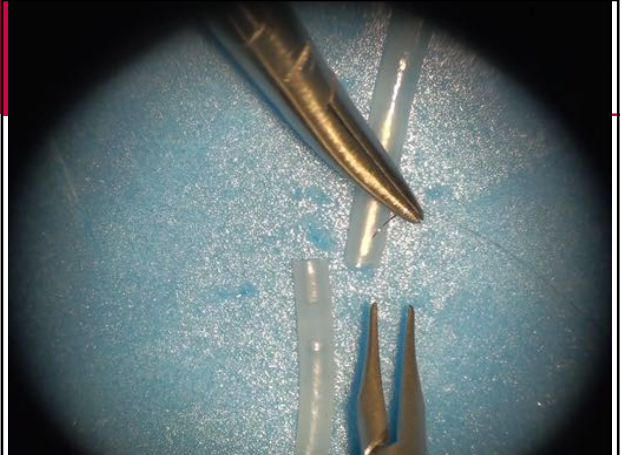



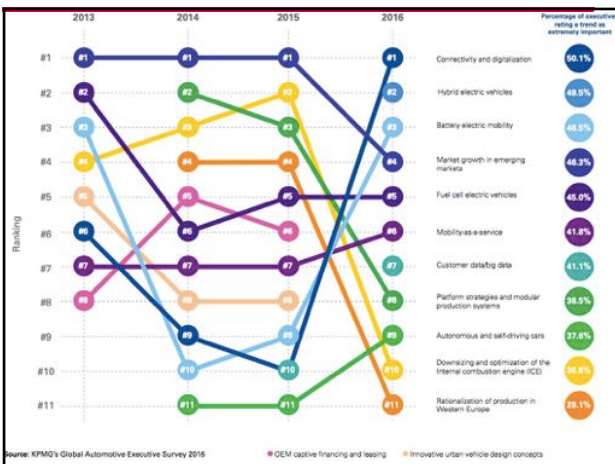
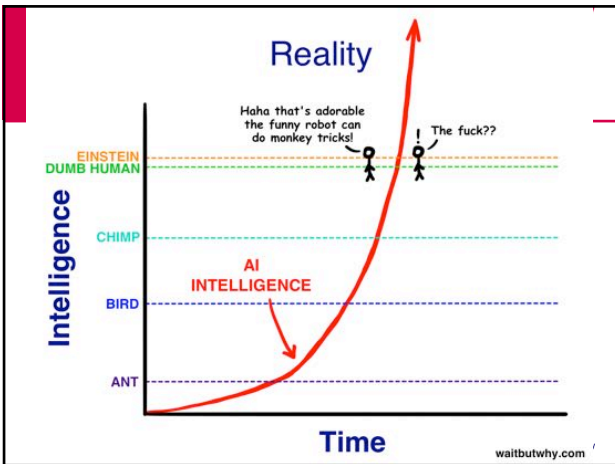
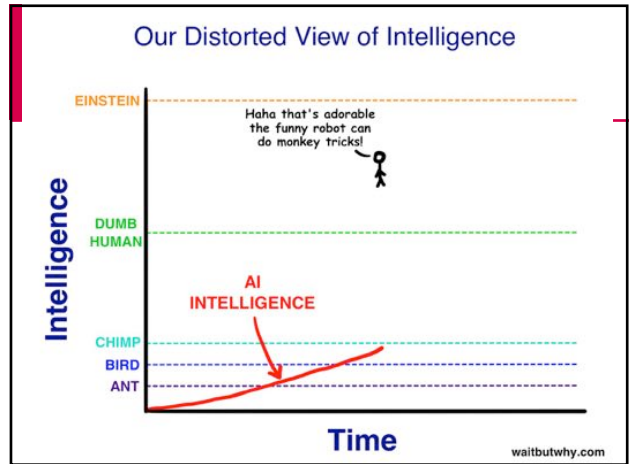
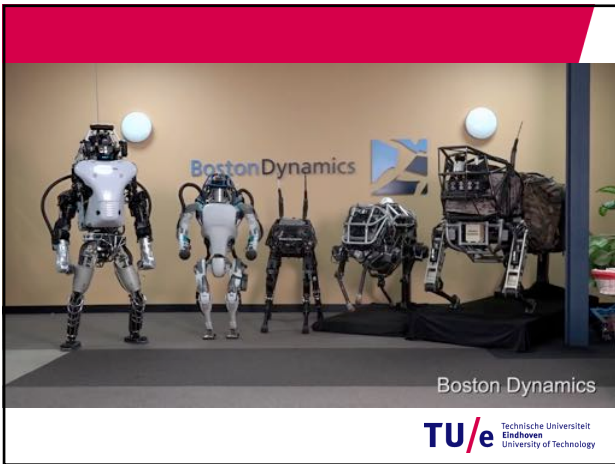
PhD thesis Meenink 2011, TU/e
Euretina Innovations Award 2014

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The auto industry is poised for more change in the next five to ten years than it's seen in the past 50.

Mary Barra, CEO General Motors

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Blogpost feb, 21:

The automobile is just another travelling computer
which makes it ripe for Apple to disrupt it



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GÜNSTIGE AKKUS

Preisentwicklung von Lithium-Ionen-Batterien (Euro/kWh)



Quelle: Horváth & Partners

© Automobilwoche



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Tesla Energy

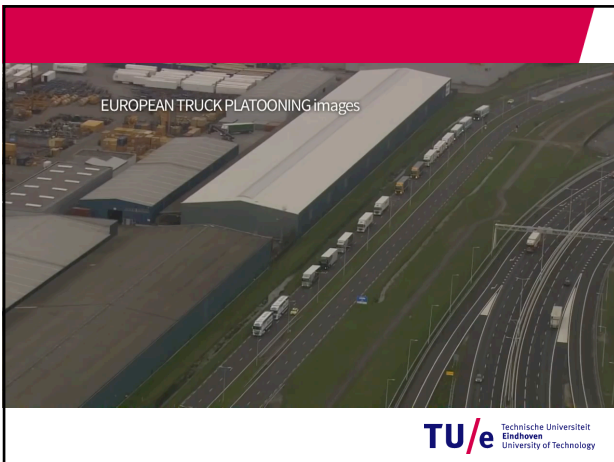




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EUROPEAN TRUCK PLATOONING images

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4TU.Federation

AGRIFOODTECH
PLATFORM

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**Collaboration High Tech Agri Food:
TU/e -WUR**

Education

Joint MSc *Food Manufacturing*

- Additive manufacturing (3D printing)
- Design of assembly processes
- Robotics
- Data science

Professional Degree in Engineering (PDEng)

- Regional cluster management
- System Innovation Management

Research

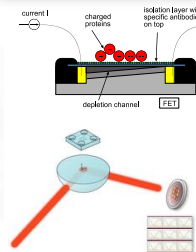
- Robotics (field, product assembly)
- Lab-on-a-Chip; Process-on-a-Chip
- Big Data
- Wearables and Sensors
- 3D printing

Lab-on-a-Chip

Surface modification w/ordered monolayers
Sensors and functional surfaces
Nanoparticle synthesis, use in sensors
MRI-on-a-Chip
Integration with microreactor and labs-on-a-chip



Nanolitre MRI-on-a-Chip



Big Data

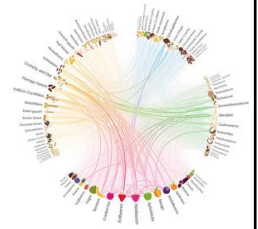
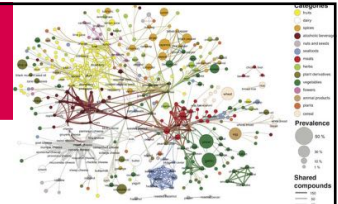
Any complex issue

- Nutrition & disease
- Sensory
- Food composition & prep

Towards customised nutrition

Following people in longer time frames (e.g. LifeLines programme)

Combination of genetic, proteomic, metabolomic data and conventional epidemiological data (e.g., LifeLines programme)



Wearables and internal sensors

Following people or animals in their eating / food choice / exercises / daily habits

- Dedicated trials and studies
- Massive, open studies using consumer electronics (phones, watches)
- Connection with our research
- Nutrition
- Sensory science
- Digestion dynamics



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Additive Manufacturing for our Future Foods

Ambition requires

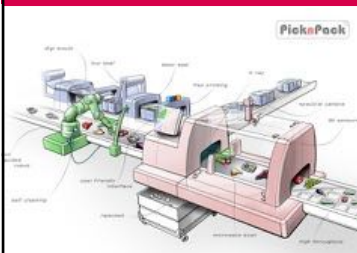
- TUE
- Software, mechatronics, printing technology
- WUR
- Food ingredients / pre-processing / structuring / solidifying mechanisms
- Nutrition
- TNO Eindhoven / Zeist-Wageningen
- Experience with food printing
- Nutritional Aspects



WAGENINGEN UR For quality of life

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Robotics Agro & in food processing



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Flexible software integration of modules and devices in a food processing line

Herman Bruyninckx
KU Leuven / TU Eindhoven

Community Meeting Tuinbouw Digitaal, Wageningen




PicknPack

Flexible software integration of modules and devices in a food processing line
H. Bruyninckx — Wageningen, May 31, 2015 page 1

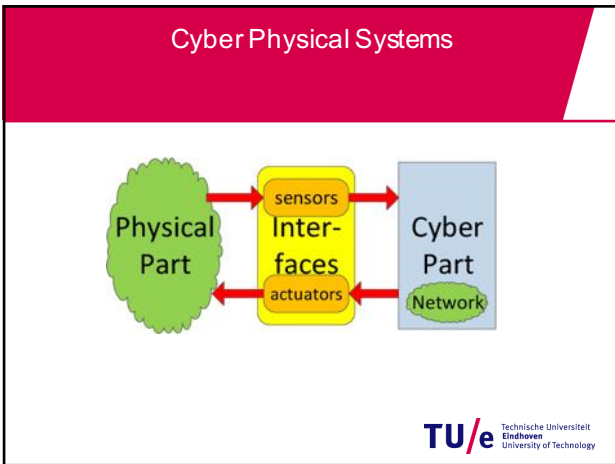
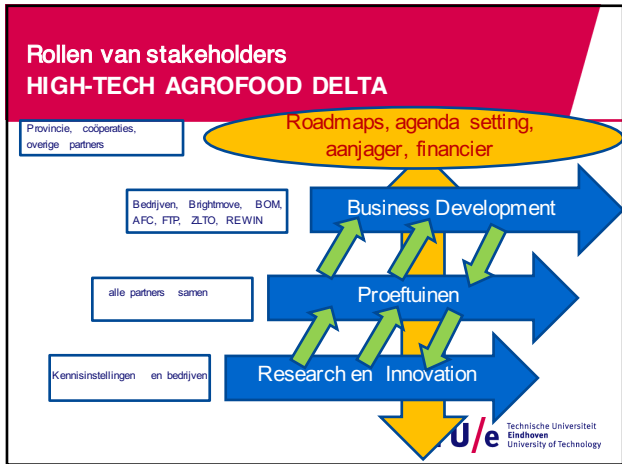


PicknPack line: overview



- **Modules:** Thermo former, Marel robot, Quality assessment, Label printer, Laser cutter, Package sorter, Cleaning robot
- **Multiple "vendors"**
- **Product change overs**
- **Tracing for, both, customers & manufacturers**

PicknPack Flexible software integration of modules and devices in a food processing line
14. Bruyninckx — Wageningen, May 31, 2016 page 2



Zie voor aan aantal videos:

<https://steinbuch.wordpress.com/2014/11/14/professionele-ongehoorzaamheid/>

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