

Industry 4.0

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- CEO of HOLOS
- President of the General Assembly R&D Nova.Id
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European Project Leaders' Network Society (EPL)

- European Project Leaders' Network Society (EPL) is a network of European entities who lead European RTD Projects.
- EPL's objective is to extend the target of collaboration beyond Europe and to strengthen international excellence.

Specially in the Middle East and Africa

www.eplnet.org



Founding partners

European Project Leaders' Institutional Founding Partners



CTS - Centre of Technology and Systems

APPLY NOW !

4th industrial revolution

This is the vision for the 4th industrial revolution

Real-time philosophy



SMART FACTORY



DATA CENTER



ASSEMBLY LINE



**ANALYTICS
&
BIG DATA**

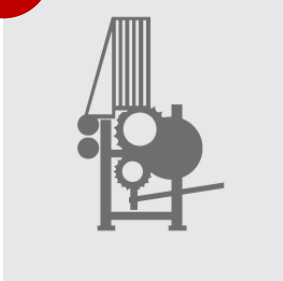


**“CONNECTED
EVERYTHING”**



**SENSORS
&
ACTUATOR
NETWORKS**

1.0



1784

Mechanical
power

2.0



1870

Electrical
power.

3.0



1969

IT power

4.0



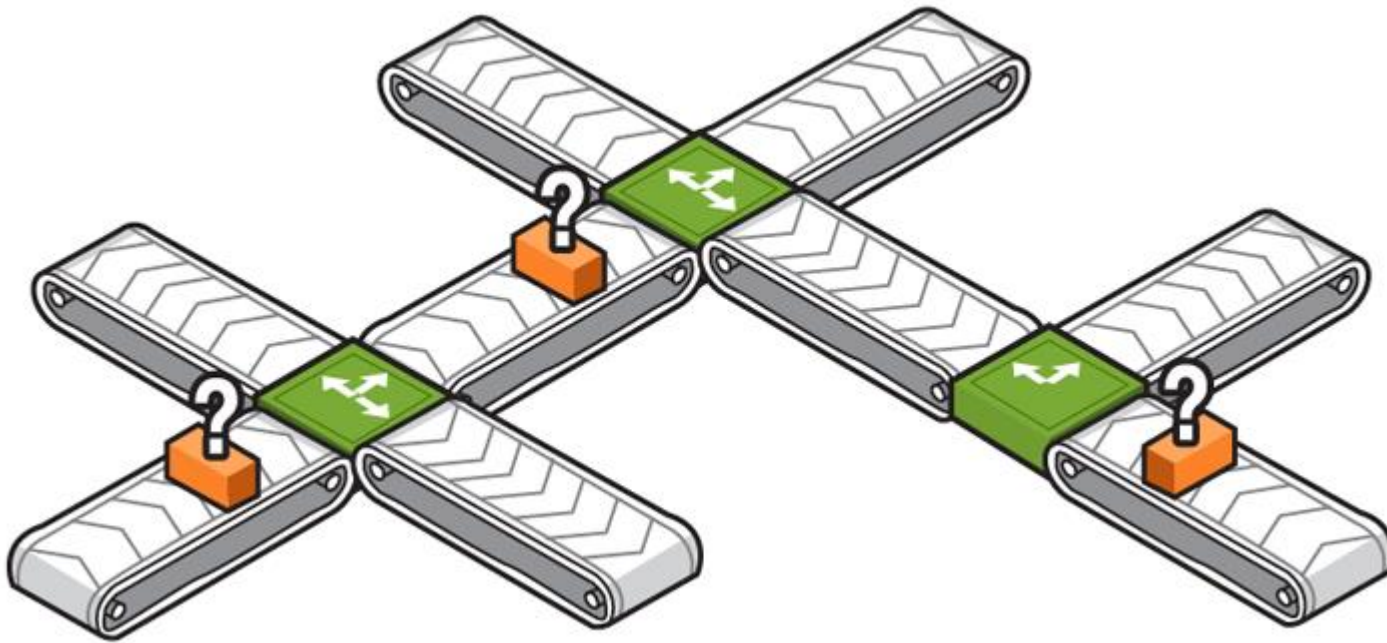
The “Industry 4.0” program in Germany is extending the paradigms of “Internet economy” to the production of goods.

Up to 2025, this **fourth industrial revolution** will disrupt, recombine or replace many of the achievements of the previous one.

Services & manufacturing | Internationalization | Integration |
Knowledge | Design | Processes

A vision for tomorrow's manufacturing

Products finding their way, independently, through the production process.



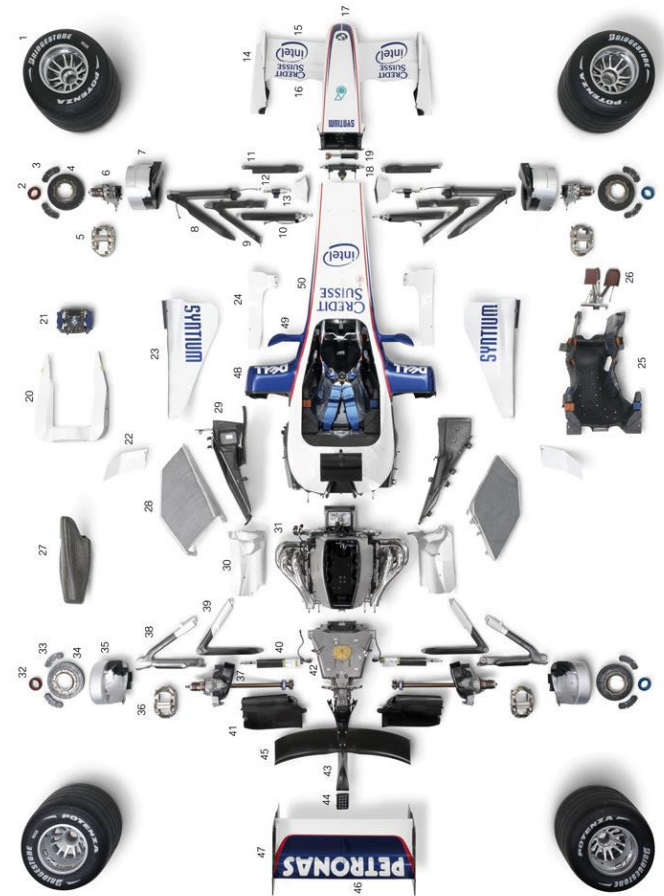
“In intelligent factories, machines and products communicate with each other cooperatively driving production, raw material and machines are interconnected within Internet of Things with the objective of obtaining an highly flexible individualized and resource friendly mass production.”

- Cyber physical systems (CPS)
 - The things: Identity, the ability to learn about these things, to be smart
 - How do we deal with different things? Different sizes, different life cycles...
- In batch 1
 - Marketplace to source components.
 - For a particular order: Raw materials, software...
 - Adapt our logistics

Massive investments

- To help stimulate this development, EU has dedicated billions of dollars in the last years... now with H2020
- Integration of requirements
- Alignment between organizations
- Resilient factories (very flexible)
- Ever smaller batch sizes (batch size 1)
- Flexibility
- Simplicity (not simple!)
- Complexity (not complicated!)

- Formula 1 engine
(5 different engines per season)
- Reshape your assembly line
(shop floor)
- More flexible, more intelligent,
network your production, predictive
maintenance
(big data analysis)



A spare box

Spare box (real and virtual world) Cyber Physical Systems
RFID used to track millions of parts to create product
memory.



Identity of the product, memory about the components
maintenance, prognostic

Avoid recalling of million of products!!!

(You can recall just the damaged ones)



standardized modules that
connect and combine easily



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The usual players: Europe, USA, China.... Iran?

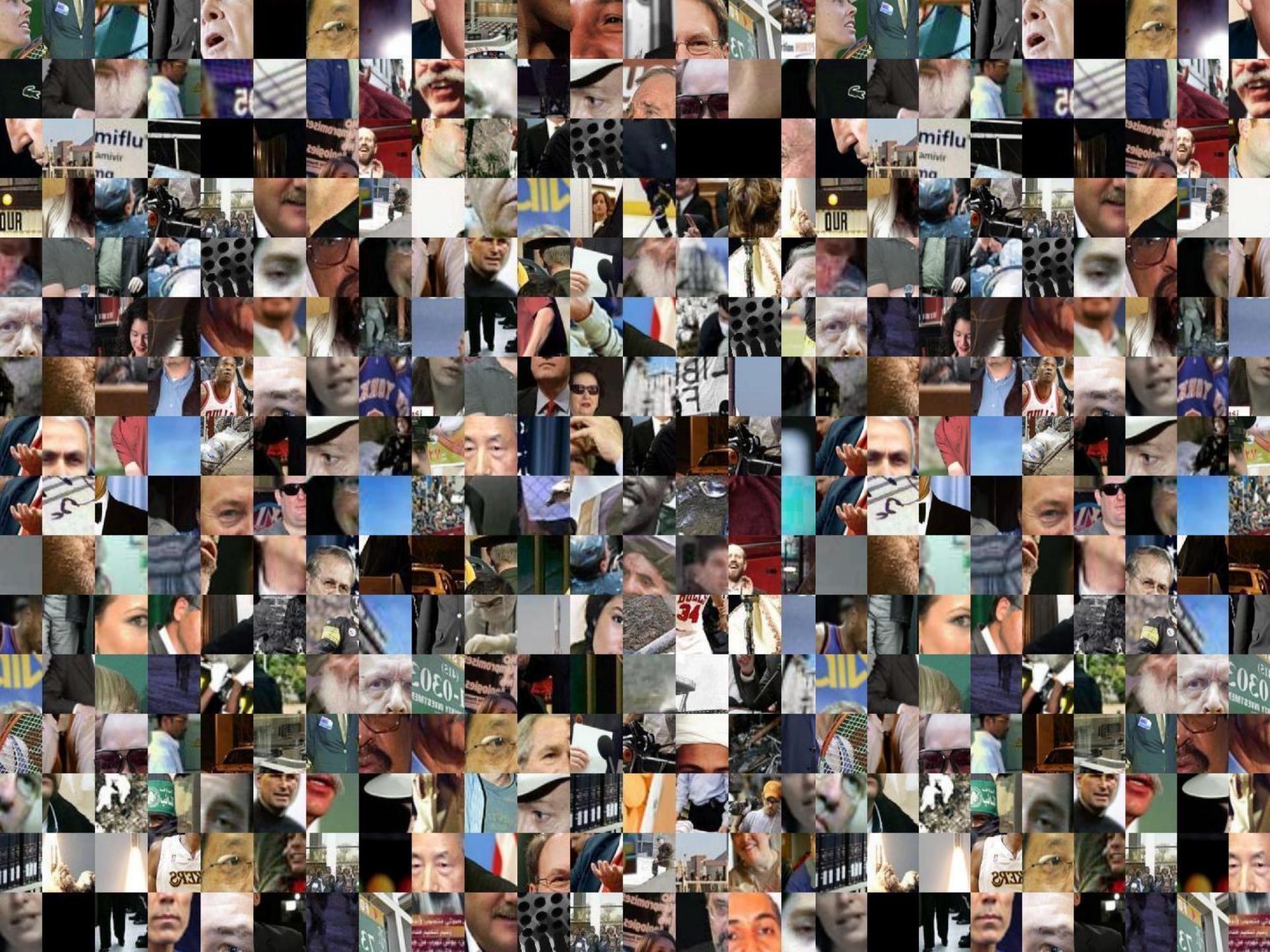


Does not happen over night!

Next 10-15 years will be very exciting!

Several companies will perish...

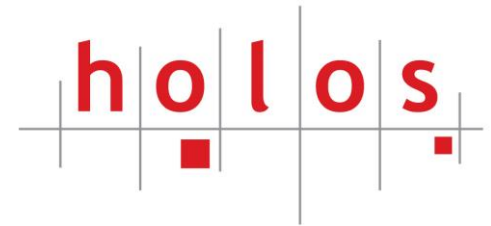
manufactures will need to adapt!



A vision for tomorrow's manufacturing

- Iranian industry4.0 roadmap
 - Academia; Policy makers; Manufacturing
- Raise Awareness (New conference in February)
- Best Practices Award 2016
- Tomorrow
 - Academia Committee
 - Policy maker Committee
 - Manufacturing Committee





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Q &A