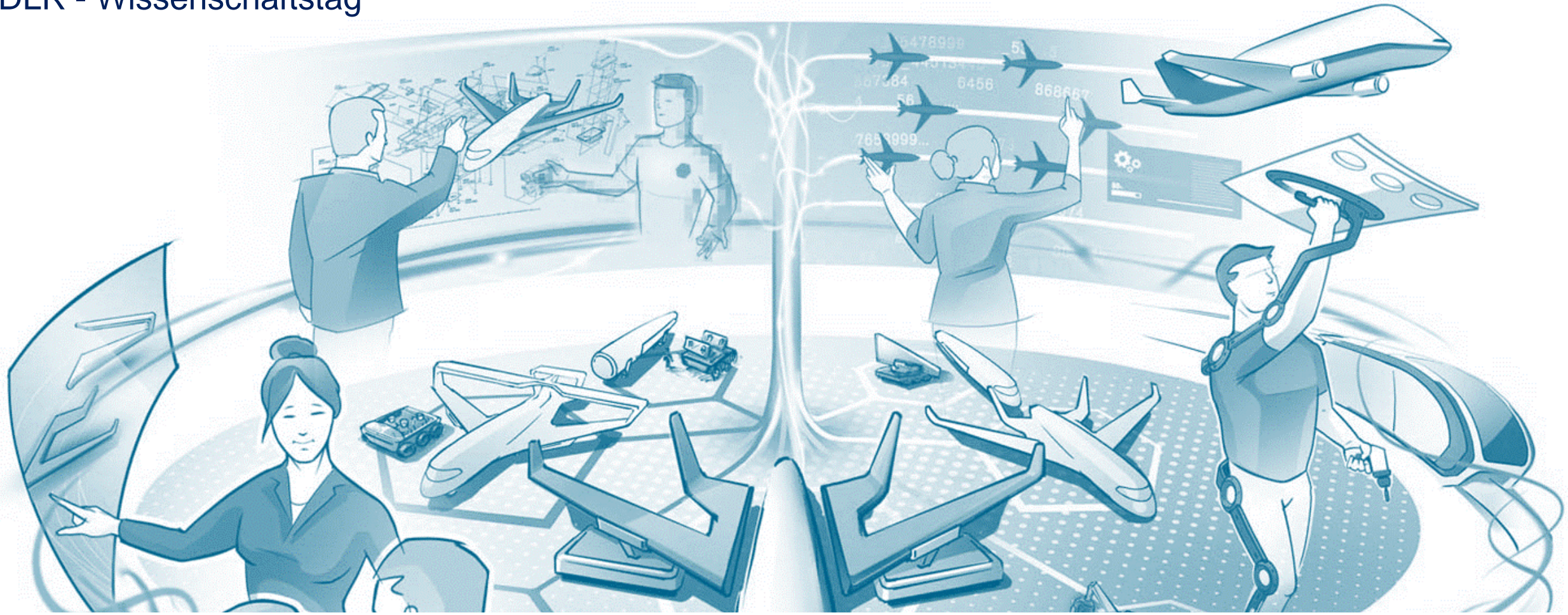


Factory of the Future and it's virtual Twin

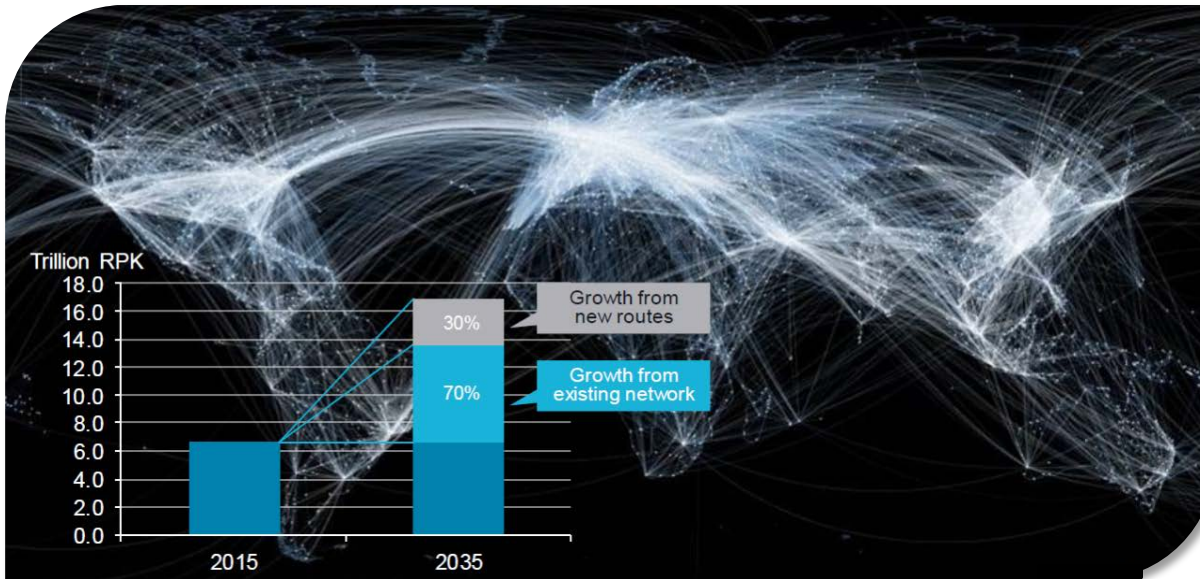
DLR - Wissenschaftstag



Stephan Röpke
18. October 2018

AIRBUS

Air travel growth



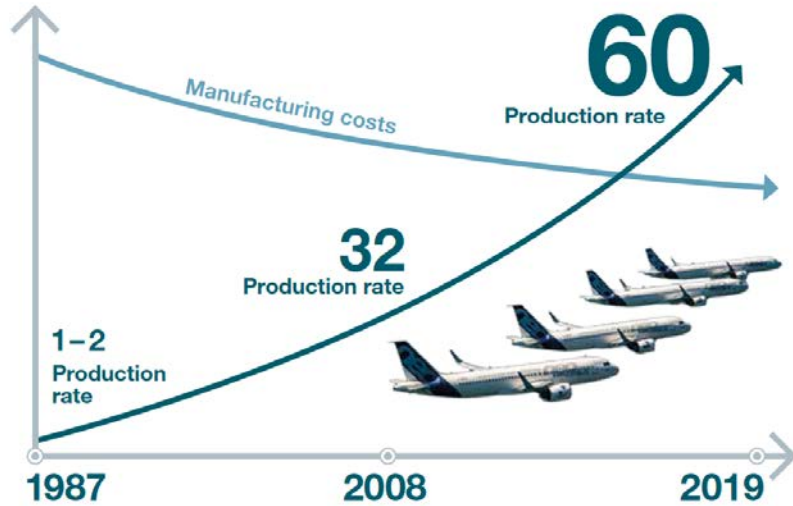
Demand for air transportation is growing fast..



.. doubling every 15 years

Need for more than 35,000 new A/C in the next 20 years

Challenges for the Industrial System



- Continuous ramp up of production
- High customer specific configuration
- Different workload in production due to different customization
- Capacity and flexibility of supply chain
- Manual labor dominates assembly
- Inflexible automation solutions
- Need for large, purpose-build jigs and tools

The transition to a new Product at high Production Rates is an unprecedented challenge for the entire Industrial System!

A320 : a success story

A320 – Family

- first delivery in 1988
- introduced for a demand of a few hundred aircraft
- Product design is dominated by flight performance and customer value (weight, aerodynamics), industrial aspects were secondary
- Product life cycle of ~ 40 years

recent results (2017): ~ 8,000 deliveries, 6,000+ orderbook



Specialty of Aircraft Manufacturing



Final Assembly Line 1987 ..



.. and 2018

Speciality of Aircraft Manufacturing



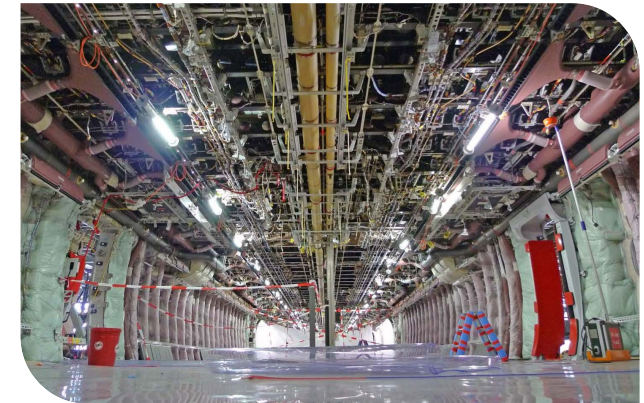
...does not allow full automation due to the way of manufacturing!



Speciality of Aircraft Manufacturing



...is characterized by complex processes and various detailed operations



Speciality of Aircraft Manufacturing



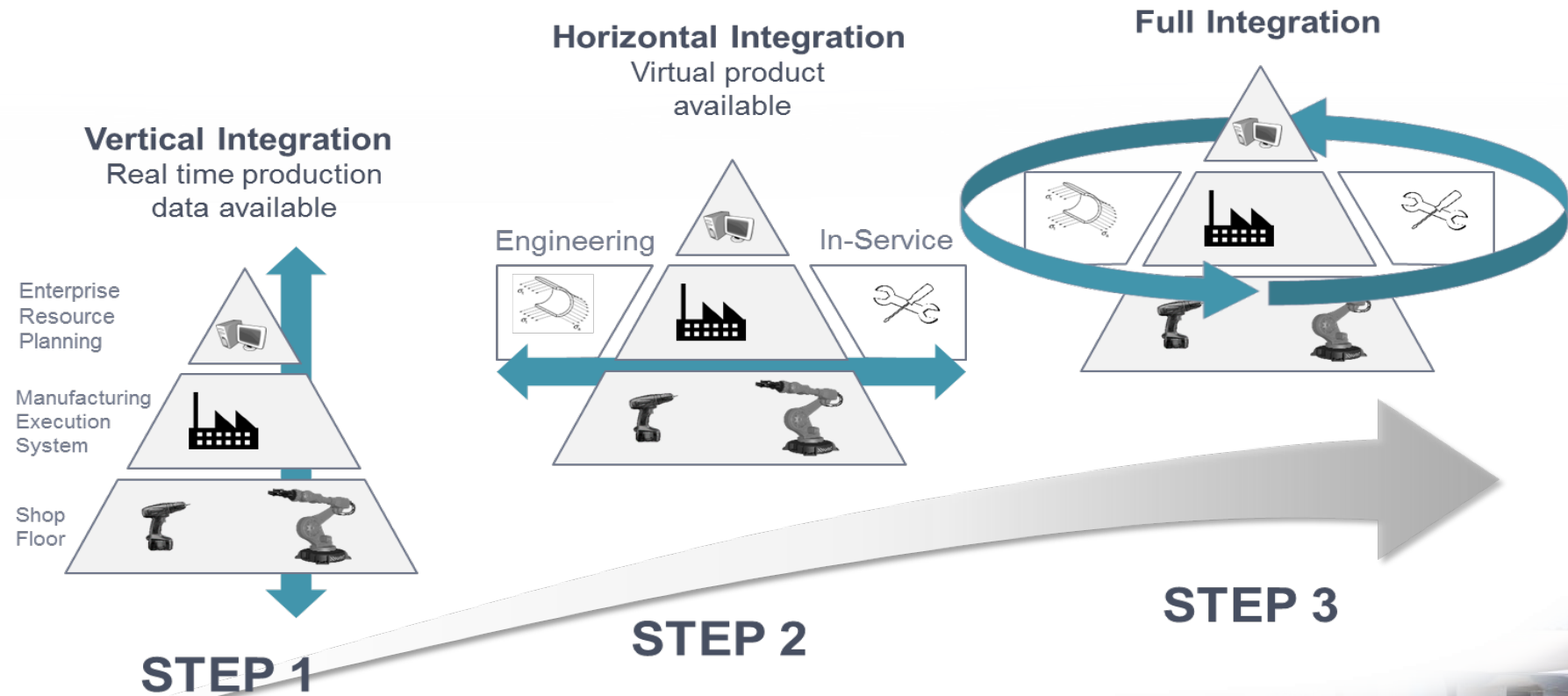
... is dominated by manual work,
done by skilled experts





Factory of the Future – Strategic approach

Factory of the future - Implementation strategy Planning





Digital Development & Industrialisation – Main Targets



Lead Time Reduction in Development

New Design Approach
New Integration Approach
Virtual Aircraft

...



Lead time Reduction in Production

Design for Assembly
Plan and Control
Virtual Factory

...

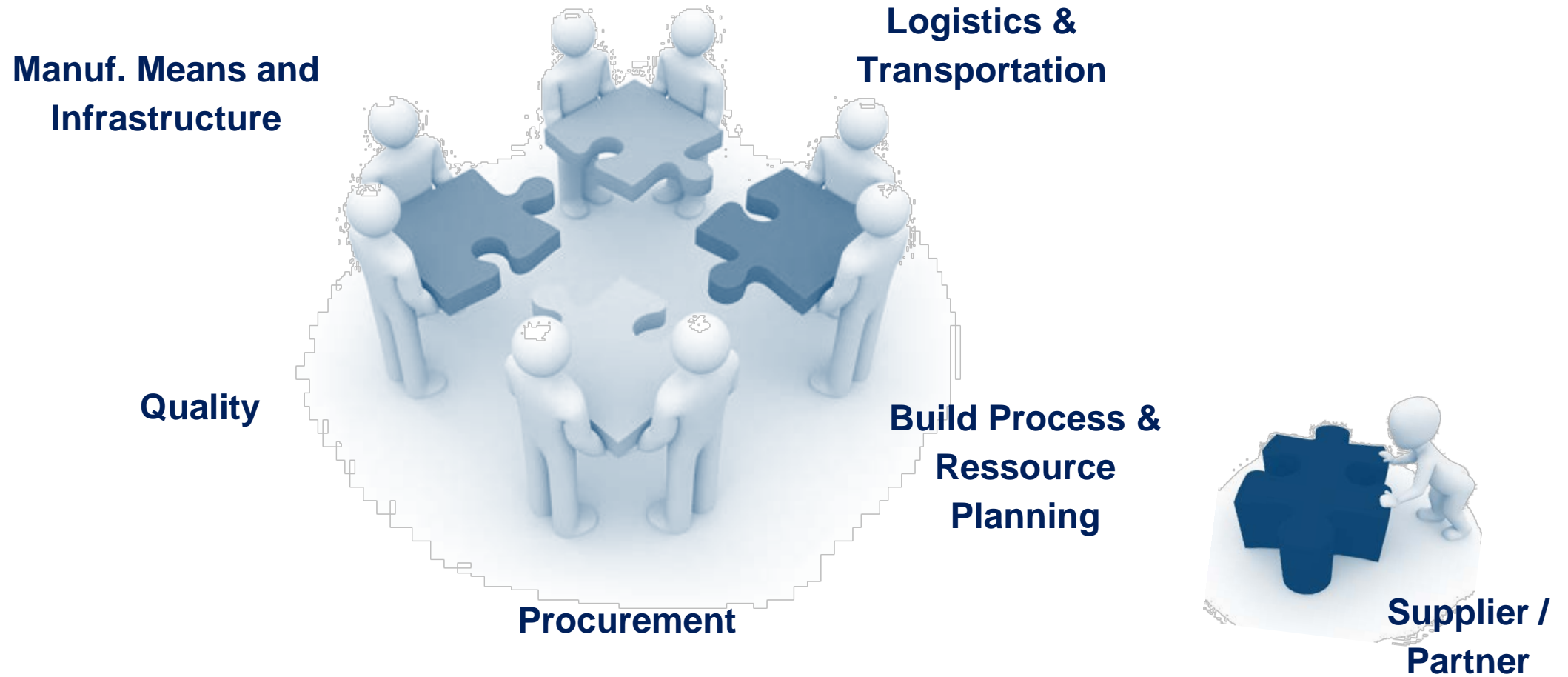


RC Reduction

Automation
Support Systems
Testing and measurement

...

Conclusion



Thank you