



SCORE

Cross-sectoral competitiveness aspects of the European
transport manufacturing industry

Dr. Konstantin Konrad, Coordinator of the EU-Score Project
Jakob Michelmann, Dr. Leo Wangler

VDI/VDE – Innovation + Technik GmbH
Future Mobility and Europe
Steinplatz 1 | 10623 Berlin | Germany

LEADERSHIP UNDER PRESSURE

Societal trends
shape demand

Individualization

Mobility-as-a-
Service

Constant
Connectivity

Servitisation

EU-TRANSPORT
MANUFACTURING
INDUSTRY

© oneinchpunch /Fotolia

LEADERSHIP UNDER PRESSURE

EU-TRANSPORT
MANUFACTURING
INDUSTRY

Additive Mfct.

Electrification

Digitalization

Automation

Artificial Intelligence

TECHNOLOGY

© Patrick P. Palej /Fotolia

LEADERSHIP UNDER PRESSURE

EU-TRANSPORT
MANUFACTURING
INDUSTRY

New Entrants

Business Models

Financial situation

Value Added

ECONOMY

LEADERSHIP UNDER PRESSURE

Regulations

Automation

POLICY

CO2/NOX

Infrastructure

Protectionism

EU-TRANSPORT
MANUFACTURING
INDUSTRY

© kichigin19/Fotolia

MAIN OBJECTIVES OF SCORE



ENABLE COMPANIES & POLICY MAKERS TO CONCLUDE ON EFFECTIVE PUSH-& PULL MEASURES FOR FUTURE SHIFTS

TECHNOLOGY
ANALYSIS

Automation

Value Chain
Dynamics

New players, new products,
new services...

© pro500/Fotolia

Qualified
Workforce

There is a high necessity for
qualified employees

© Roman Dekan/Fotolia

New Paradigms

How does AI
change CAD & TMI?

© ktsdesign/Fotolia

SELECTION OF CRUCIAL RESEARCH QUESTIONS

AUTOMOTIVE

DEMAND
ANALYSIS

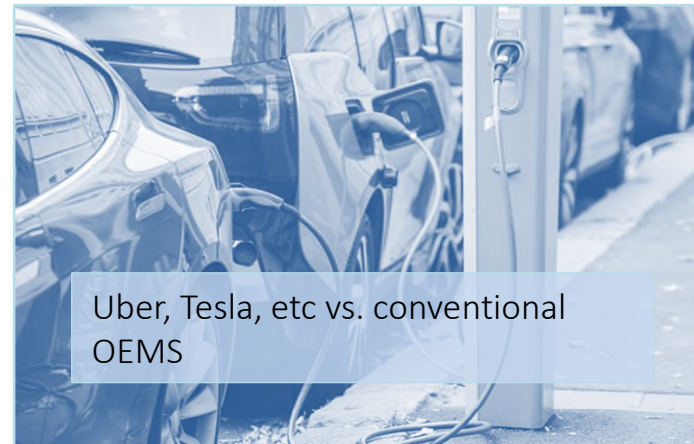
Urbanization

COMPETITION
ANALYSIS

Value Added



© metamorworks /Fotolia

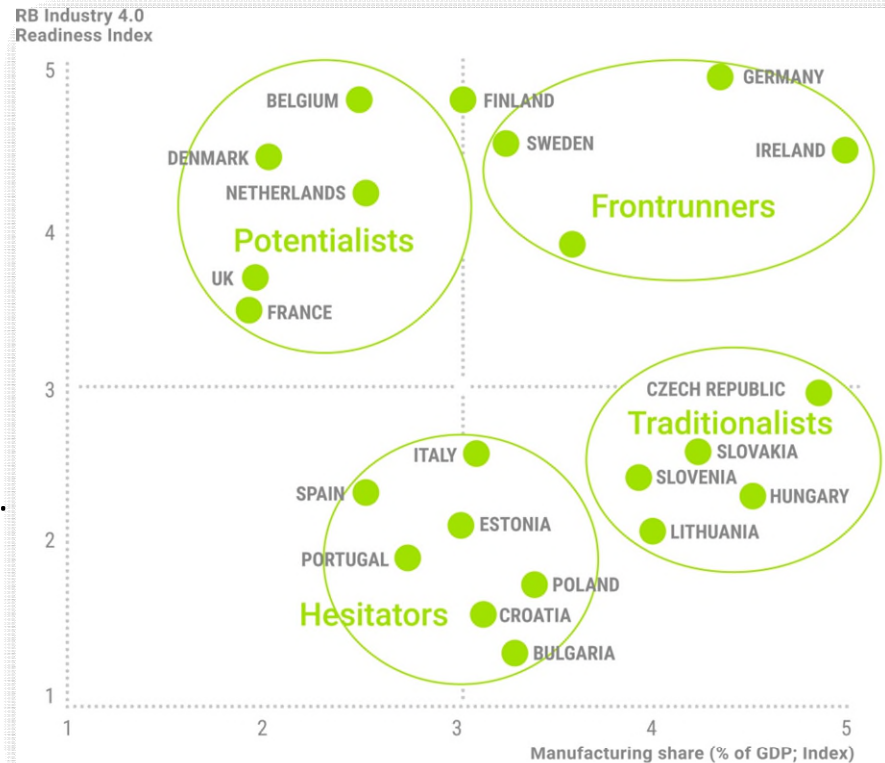


© scharfsinn86/Fotolia

Exemplary topic: Industry 4.0 for automotive production

Industry 4.0 is a topic with high relevance for industrial production today and in the future.

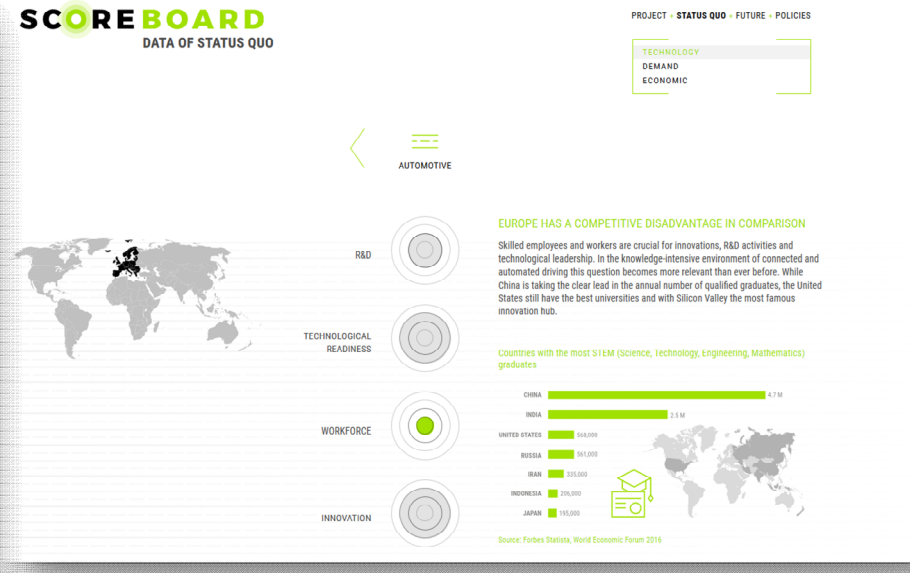
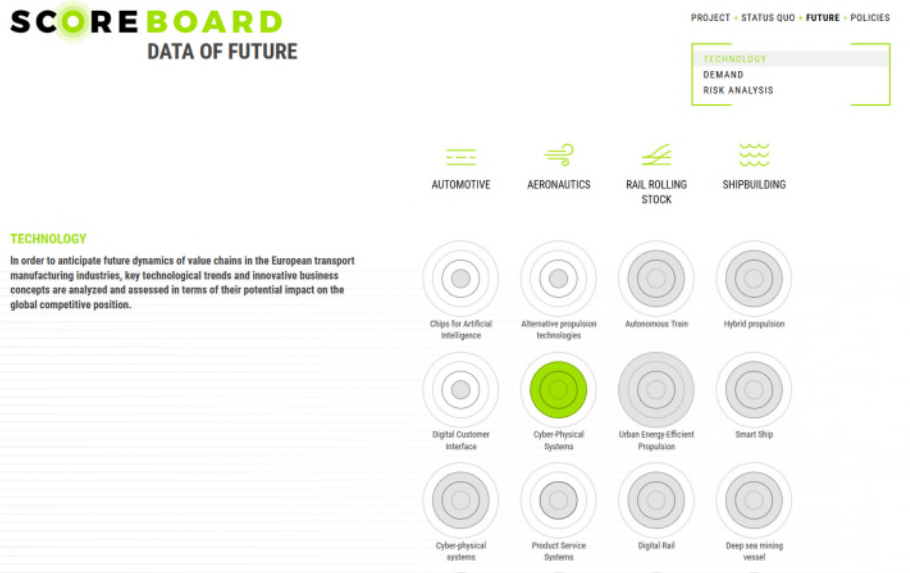
- Meta-Study of various publications
- European initiatives
- Comparison with status in the U.S. and China
- **SCORE**: Europe has a competitive advantage in comparison



Source: Digitising European Industry. Launch Smart Anything Everywhere Initiative.

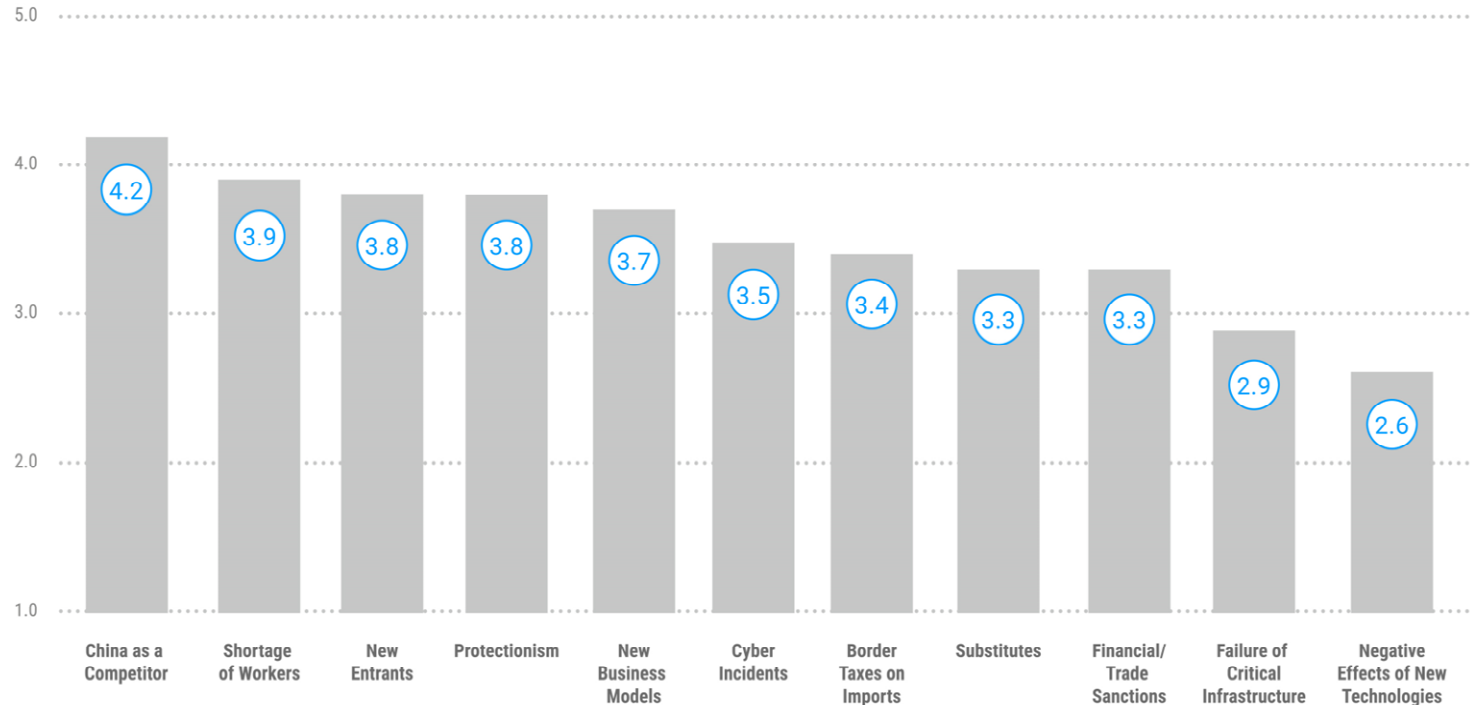
Snapshot of the SCOREBOARD

www.transport-scoreboard.eu



Risk Analysis / Expert survey

Risk Landscape of the European Transport Manufacturing Industry



Advanced Microsystems technological basis to secure competitiveness for European Manufacturing Industry



RAIL ROLLING STOCK

- Hydrogen-Powered Trains
- Urban Energy-Efficient Propulsion
- Autonomous Train
- Servitization...



AUTOMOTIVE

- Chips for Artificial Intelligence
- Cyber-physical systems
- Energy Infrastructure
- Autonomous Driving...



AERONAUTICS

- Alternative propulsion technologies
- Digitisation
- MRO Services
- Cyber physical systems...

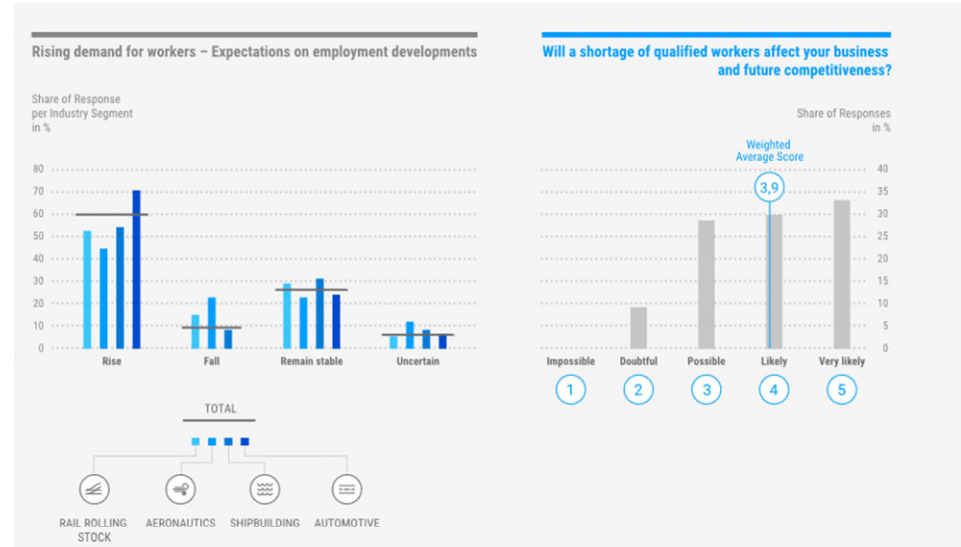


SHIPBUILDING

- Deep sea mining vessel
- Hybrid propulsion
- Advanced Emission Abatement
- Smart Ship...

Main conclusions of SCORE

- Fundamental change in mobility demand
- China as an opportunity but also as a challenge
- Highly-qualified workforce
- Advanced Manufacturing Technologies
- Tough-Life Engineering Services (Servitisation)
- Cross-sectoral collaboration



Expert survey results of SCORE illustrating the rising need for employees while already expecting a shortage of skilled staff.

How competitive is Europe?

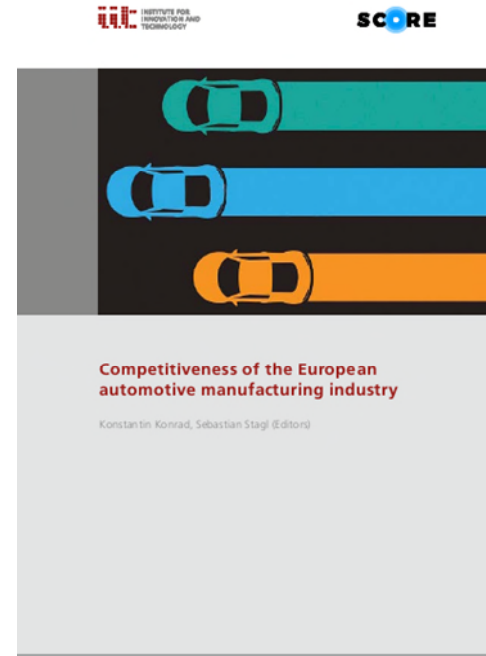
SCOREBOARD – all modes

www.transport-scoreboard.eu

Competitiveness of the European automotive manufacturing industry , 100 pages (2018)

Konstantin Konrad/ Sebastian Stagl/ Edgar Krune/
Jakob Michelmann/ Beate Müller/ Mathias Müller/
Leo Wangler/ Guido Zinke

www.iit-berlin.de



Thank you!

Any questions?