Supply Chain Disruptors and their Impact on the Future of 30 Manufacturing, Logistics, and Distribution UNIVERSITY

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OF TWENTE.

Sample of Companies Excelling in Disruptive Innovation

Market Capitalization in Billions of Dollars in July 2021 Year Founded Service Offered Company Lodging and vacation services 2008 86 Airbnb

Disruptive Innovation Causes

Digitization

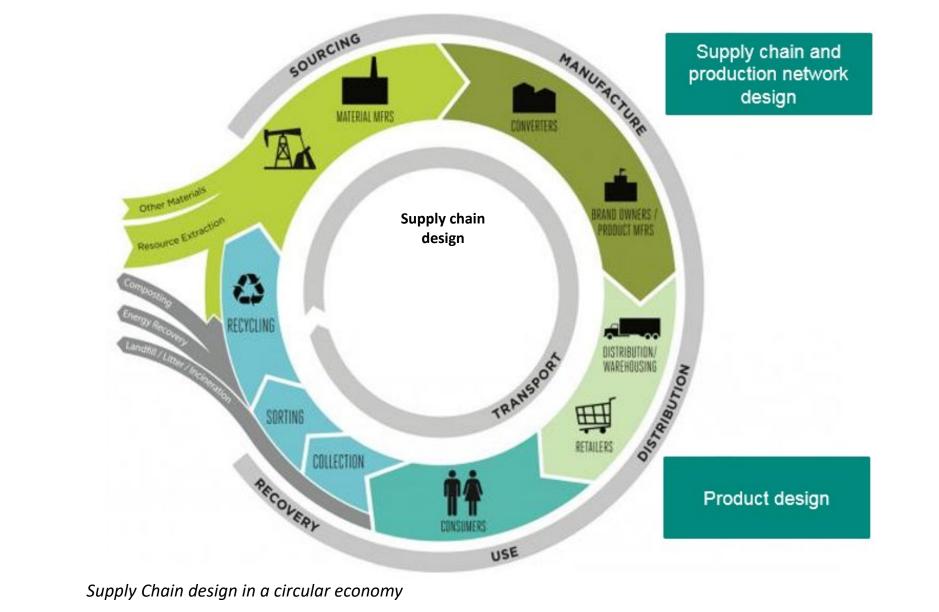
1999	Alibaba	580
1976	Apple	2,400
2004	Facebook	995
1998	Google	1,800
1997	Netflix	225
2003	Tesla	625
2009	Uber	90

Online retailer Electronics, software, and online services Social networking services Internet services, search engine, cloud computing Streaming video content Self-driving, electric cars Ride-hailing

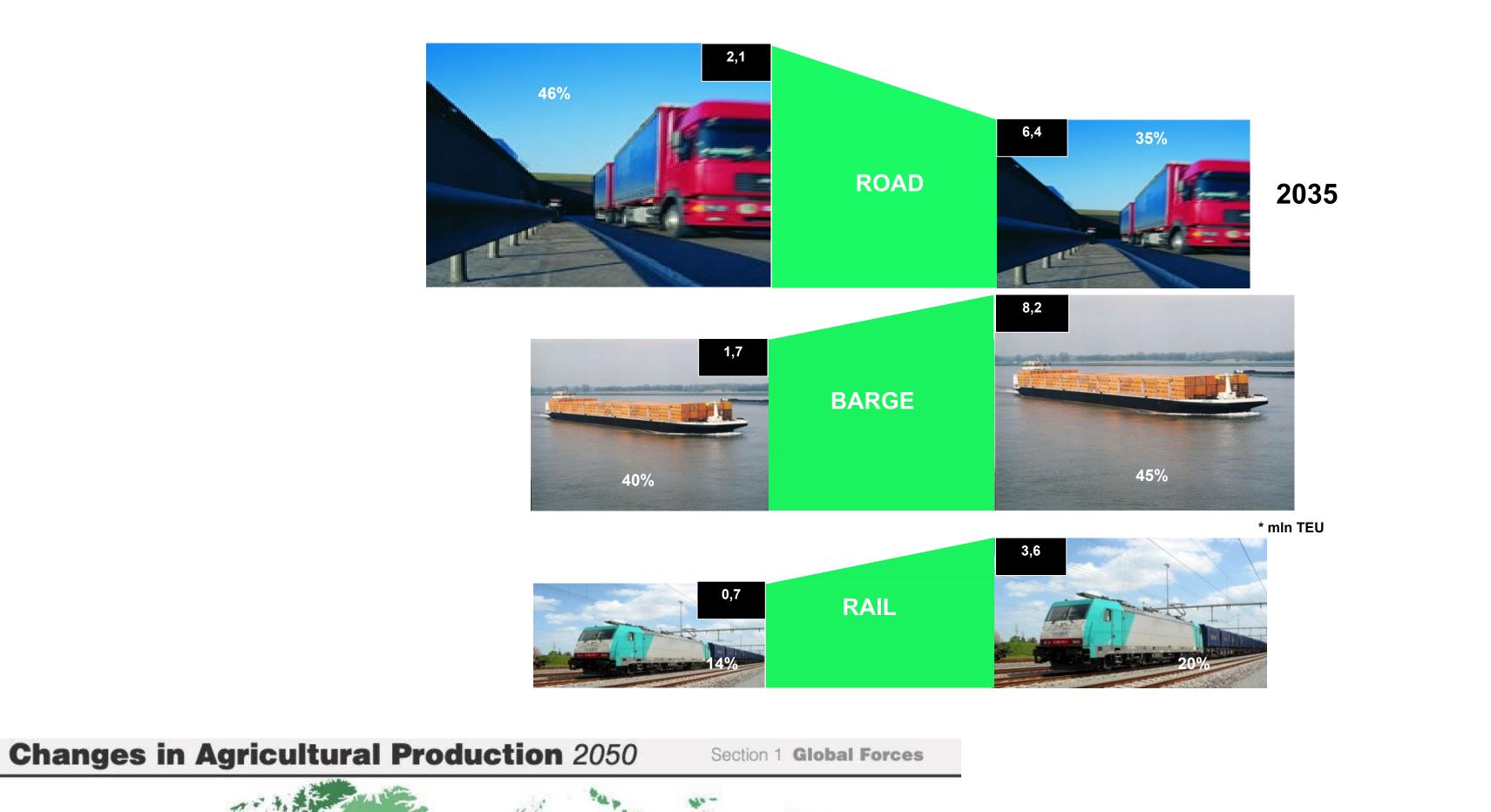
- **Industry 4.0**
- **Artificial Intelligence**
- **Augmented Reality**
- **Additive Manufacturing**

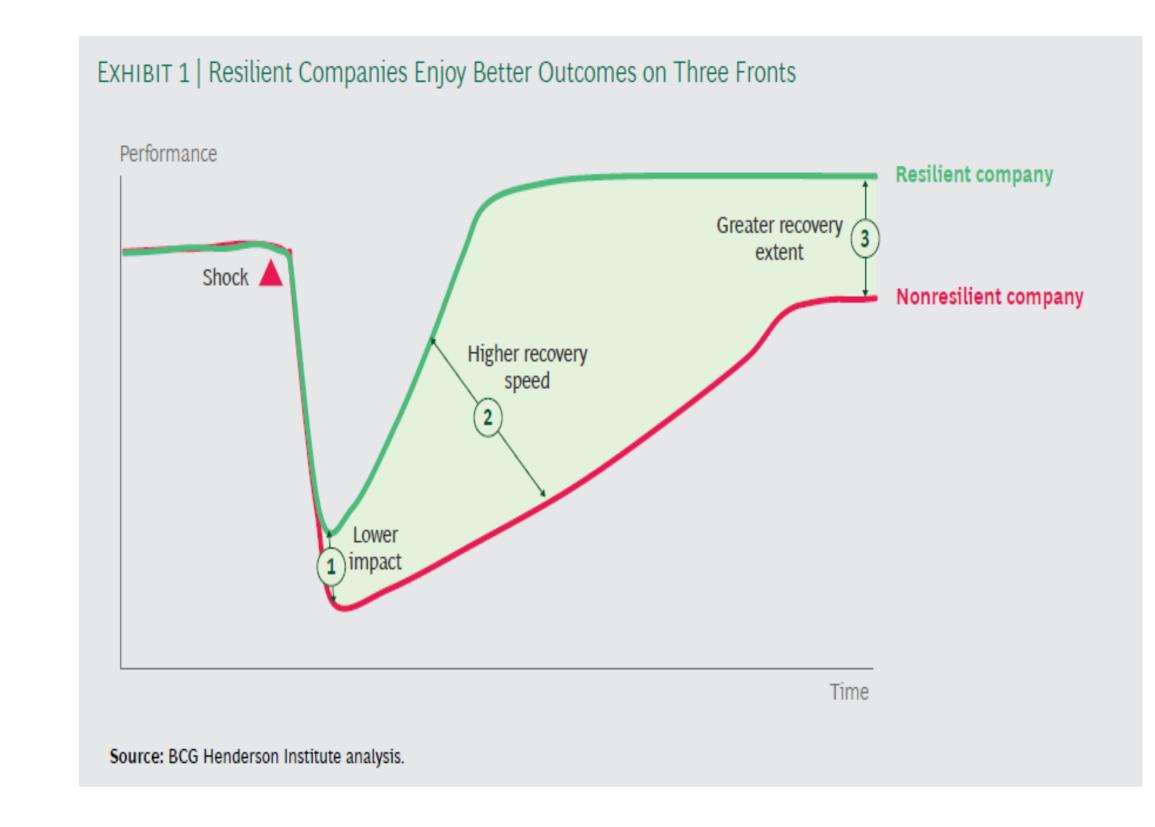
Controllable Factors

- **Sustainable Supply Chains**
- **Circular Economy**
- **Shared Economy**
- **Societal Costs**



- Last-mile delivery \bullet
- **Driverless vehicles**







Uncontrollable or Unpredictable Factors

- Catastrophic Events
- Climate change
- Wars
- **Population Shifts**

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ON MATERIAL HANDLING EDUCATION

16th International Material Handling Research Colloquium Dresden, Saxony, Germany, June 20-23, 2023



⁻ MAKES SUPPLY CHAINS WORK