

BUSINESS FORUM **FAST TRACK USA**



INDUSTRIAL (R)EVOLUTION? AUTOMATION, AI AND THE RESURGENCE OF
U.S. MANUFACTURING: WHAT IT MEANS FOR AUSTRIAN EXPORTERS AND INVESTORS



OVERVIEW

1. RESHORING in the USA
2. INDUSTRIAL (R)EVOLUTION - INDUSTRY 4.0
3. AI - ARTIFICIAL INTELLIGENCE
4. OPPORTUNITIES FOR AUSTRIAN EXPORTERS / INVESTORS?
5. UPCOMING EVENTS

RESHORING

- **Nothing new: reshoring started in 2010 - reshoring initiative**
- **Basic idea: bring production back to where items are assembled or sold**
 - Reduce transportation costs and time (and risk after Japan Tsunami 03/2011)
 - Higher product quality and consistency
 - Improved innovation and product differentiation
 - Local tax incentives
 - Rising offshore wages
 - Image of being “Made in USA”
- **Number of jobs brought back to the US from offshore: 576,000*)**

*) 2010-2017

RESHORING

■ Top 10 reshoring companies:

*) 2007-Q3/2017 cumulative

• GM	12,400
• Boeing	7,800
• Ford	3,350
• Intel	3,000
• GE	2,570
• Caterpillar	2,100

• Polaris Industries	2,000
• Flextronics (Apple & Sun Power)	1,800
• Merck	1,640
• Element Electronics	1,600
• Gentex Inc.	1,600

<http://reshorenw.org/blog/top-reshoring-and-fdi-companies-as-of-september-30th-2017/>

RESHORING

- **Top FDI Foreign direct investment companies:** *) 2007-Q3/2017 cumulative

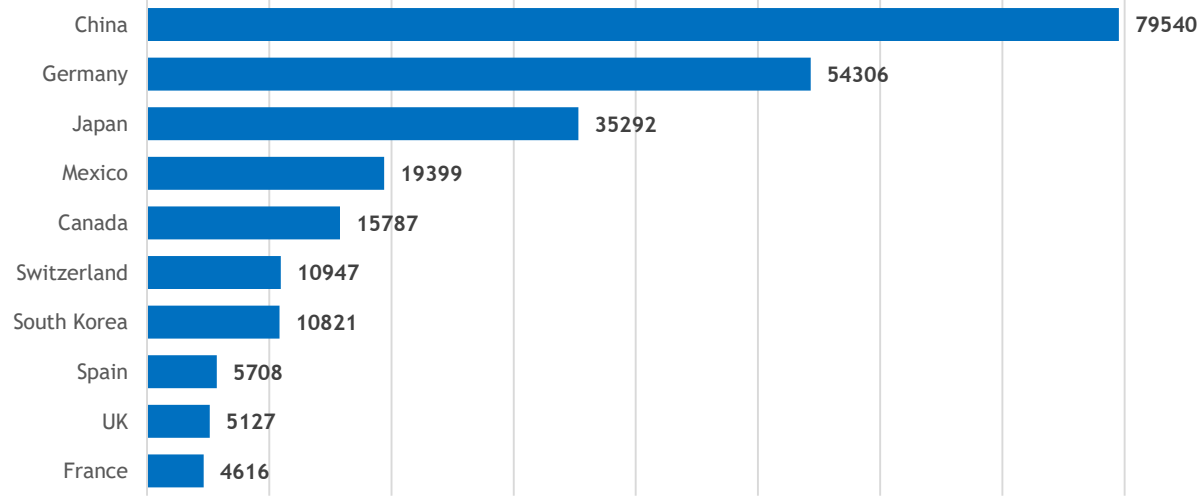
• Toyota	6,365
• Mahindra	6,080
• Pratt Paper	5,140
• Continental	5,085
• Dalkin	5,000

• Volkswagen	4,800
• Volvo	4,000
• Foxconn	4,000
• Mercedes-Benz	3,000
• One Web partners	3,000

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RESHORING

‘Reshored’ U.S. jobs from these countries: (2010-2016)



source: The Reshoring Initiative

to benefit U.S. sectors:

- ⇒ automotive industry
- ⇒ electronics
- ⇒ appliances

but not the U.S. job market:

- Q1/2017: NA companies bought 32% more robots
- every robot replaces six human jobs
- higher (technical) education

RESHORING

Mixed signals for return of U.S. companies:

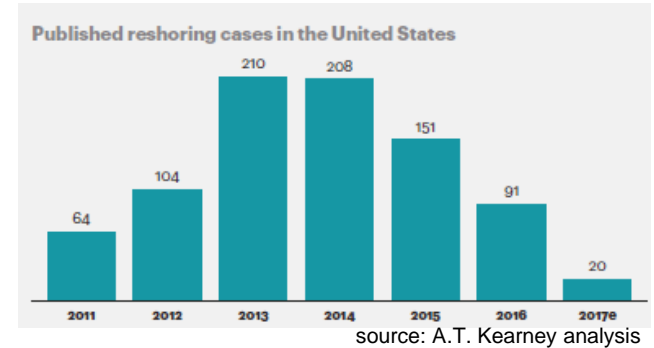
- 2017: 170,000 **new** U.S. manufacturing jobs
- Apple claims responsibility for 2 million jobs created in the entire U.S.
 - Including 80,000 apple employees, 450,000 jobs through U.S. based suppliers, and indirect 1.5 million app-store contributors
 - Plans for 22 billion US\$ in capital expenditure over next 5 years
 - Manual assembly of Asian components in China (Foxconn) is being replaced by robotics

<https://www.usatoday.com/story/money/business/2018/06/28/manufacturers-bringing-most-jobs-back-to-america/36438051/>

RESHORING

Mixed signals for return of U.S. companies:

- **A.T. Kearney's reshoring index 2018:**
imports from traditional offshoring countries are at a record high (up by 55 billion \$ or +8 %) ... direction away from significant reshoring
- In past 5 years: US manufactured goods imports from 14 low-cost offshore countries have consistently outpaced that of U.S. manufactured goods (by ~3%)



INDUSTRIAL (R)EVOLUTION - INDUSTRY 4.0

- **We are in the middle of the fourth industrial revolution**
following introduction of steam power, electricity and computers
- **Smart connected technologies** go far beyond manufacturing:
⇒ Transformation of design, production processes, usage and service
of products and of organizations themselves
- **Digital connectivity - IIOT - big data - AI - smart machines**
are central to the current industrial revolution
- **Cobotics, big data, automation, 3D printing** are new cards in the deck

A.I. - ARTIFICIAL INTELLIGENCE - THE NEXT DISRUPTION

- A.I. is already being used in a number of fields:
 - The National Institute of Health is exploring ways machine learning can improve cancer detections and treatment
 - The General Services Administration is using AI to reduce the need for federal auditors
 - one of the largest applications: autonomous driving, connected vehicles

A.I. - ARTIFICIAL INTELLIGENCE - THE NEXT DISRUPTION

- **A.I. is changing our daily life:**
 - Financial and legal services (private and governmental)
 - Health care
 - Real estate
 - Energy management
 - Technical services (e.g. predictive maintenance)
 - Marketing / retail
 - Defense
 - ... much more to come ...

THE A.I. ARMS RACE - WHO WILL MILK BIG DATA?

- **U.S. presently the leader of A.I. development**
(Silicone Valley, Google, Microsoft, IBM and Apple)
- **China determined to steal A.I. crown from U.S.**
Beijing plans to be the world leader in A.I. technology by 2030
 - Between 2012 and 2017, investors poured \$4.5 billion into more than 200 Chinese A.I. companies
 - China's 2030 plan envisions a \$1 trillion A.I. industry
 - Alibaba led a 600 million dollar deal for “SenseTime” facial-recognition start-up in the biggest A.I. venture deal ever
- **A.I. and deep machine learning raise concerns**
regarding control, privacy, cybersecurity, and the future of work

THE A.I. ARMS RACE - NATIONAL STRATEGIES

- China, France and other EU countries as well the European Union itself have government sanctioned A.I. strategies
- U.S.: The National Artificial Intelligence Research and Development Strategic Plan (2016)

President Trump is not in favor of public support to fund national labs and initiatives

„To the greatest degree possible, we will allow scientists and technologists to freely develop their next great inventions right here in the United States,”

“In the private sector, we will not dictate what is researched and developed. Instead we will offer resources and the freedom to explore” (May 2018)

- **A.I. R&D in the U.S. focuses on the private and the defence sector**
U.S. military budget : 560 billion USD per year

A.I. DEVELOPMENT THROUGH U.S. UNIVERSITIES

- **Leading U.S. universities offering master's degrees in A.I.:**
 - #1: Carnegie Mellon University
 - #2: Massachusetts Institute of Technology
 - #3: Stanford University
 - #4: University of California–Berkeley
 - #5: University of Washington
 - ...
- **WKO partnership agreements with MIT and Stanford**

Source: <https://www.usnews.com/best-graduate-schools/top-science-schools/artificial-intelligence-rankings>

OPPORTUNITIES/CHALLENGES FOR AUSTRIAN EXPORTERS/INVESTORS ?

- **U.S. tax reform**
 - Decrease in US corporate tax rate (flat rate 21% as of 1/1/2018)
 - Bonus depreciation: 100 % deduction for qualifying assets (w/ life 20yr or less)
- **„Trump Tariffs“**
 - Chinese products lose competitive edge
- **Goodbye, NAFTA. Hello, USMCA**
 - United States Mexico Canada Agreement - starting 2020 - 2023
 - Main changes:
automotive, energy, commercial dispute settlement, dairy industry

OPPORTUNITIES/CHALLENGES FOR AUSTRIAN EXPORTERS/INVESTORS ?

- **Manufacturing technology:**
 - Retrofitting / replacement of older equipment / upgrading to industry 4.0
- **IT sector**
 - Data collection, data safety
 - „Infotainment“ in the automotive industry
 - Vehicle safety (sensors/technology)
- **New mobility concepts - technologic innovations**
 - Autonomous and connected cars
 - Vehicle design
 - Drive technology

KEY INDUSTRY TRADE SHOWS 2019 + 2020 (manufacturing & automotive)

- **International Production & Processing Expo:** Georgia World Congress - February 12-14, 2019
- **National Hardware Show:** Las Vegas Convention Center - May 8-8, 2019
- **Pack Expo:** Las Vegas Convention Center - September 23-23, 2019
- **FABTECH International & AWS Welding Show:** McCormick Convention Center Chicago - November 11-14, 2019
- **International Manufacturing Technology Show:** McCormick Convention Center - September 14-18, 2020

- **Consumer Electronics Show:** Las Vegas Convention Center - January 8-11, 2019
- **WCX 2019 - SAE World Congress:** Cobo Center, Detroit, MI - April 10-12, 2019
- **M:bility | Detroit:** Connected Car, Autonomous Car and Powertrain - TheHenry, Dearborn, MI - March 12-13, 2018
- **TU AUTOMOTIVE 2019:** Suburban Collection Showplace, Novi, MI - June 4-6, 2019
- **SEMA | AAPEX 2019:** Las Vegas Convention Center, November 5-7, 2019

- **IMTS - INTERNATIONAL MANUFACTURING TECHNOLOGY SHOW** 14 - 19. September 2020, Chicago, IL

We welcome your inquiries!

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