



# Industrial Technologies in Austria

9th TAIWAN-AUSTRIA ECONOMIC COOPERATION CONFERENCE  
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Geht's der Wirtschaft gut, geht's uns allen gut.

# Austria's Economy- very briefly



- GDP 2015: 373 m USD, ca. 2.6% of EU, ca. 0.6% of World
- Growth 2015-17 (real): +1.0 %, +1.7 %\*, +1.5 %\*
- Highly diversified economy - “we make things”
- approx. 10.000 companies with a defined R&D&I policy
- R&D-intensity increasing: 3.07%\* (TW: > 3% US: 3.0%, JP: 3.5%, EU:2.0%, Israel/Korea >4%)
- Total R&D-Spending 2016: 12.5 bn USD, approx. 63% business (of which 16%-points from abroad)
- Regional Headquarters: > 300 in Vienna, 16.000 JV in CEEC
- approx. 3,7 million people working (ca. 25 % part time) population growing
- open economy - open society (11 % of work-force migration back-ground)
- Part of European Union
- Social Partnership

\* estimate



# Strategic Conditions for R&D&I in Firms

- High per-capita income requires high value added
- Strong in niches + technology leadership > served world wide
- Austrian companies “make things” - often with self-developed manufacturing methods and processes. Patents - Utility Models..
- Few Austrian system suppliers (OEMs) > become part of GVCs > with as much value-added as possible
  - co-operation SMEs + “leading competence units/firms (R&D, sales & market access, etc.)
  - get critical/complementary knowledge+skills to drive fast innovation cycle - with solid science base: technical universities (Vienna, Graz, Leoben) + universities of applied sciences (21) + technical schools (HTLs)
  - relatively high investment rates & innovation



# Technology Insertion = Part of Business

- it's investment that counts (knowledge, skills, infrastructure, capacity)
- single-firm R&D-support
- industry-science cooperation in different formats (e.g. BRIDGE, Christian-Doppler/Ressel Labs, COMET, contract R&D)
- sector-specific trans-disciplinary clusters in regions
- recent focus on labs, pilot lines, shared infrastructure: experiment, develop, demonstrate, scale + gain confidence for investment.
- usually along value chains, based on contractual agreement (e.g. automotive, aviation, building technologies)
- go-it-alone where leading - spin-off technology separately



# by way of example: clusters

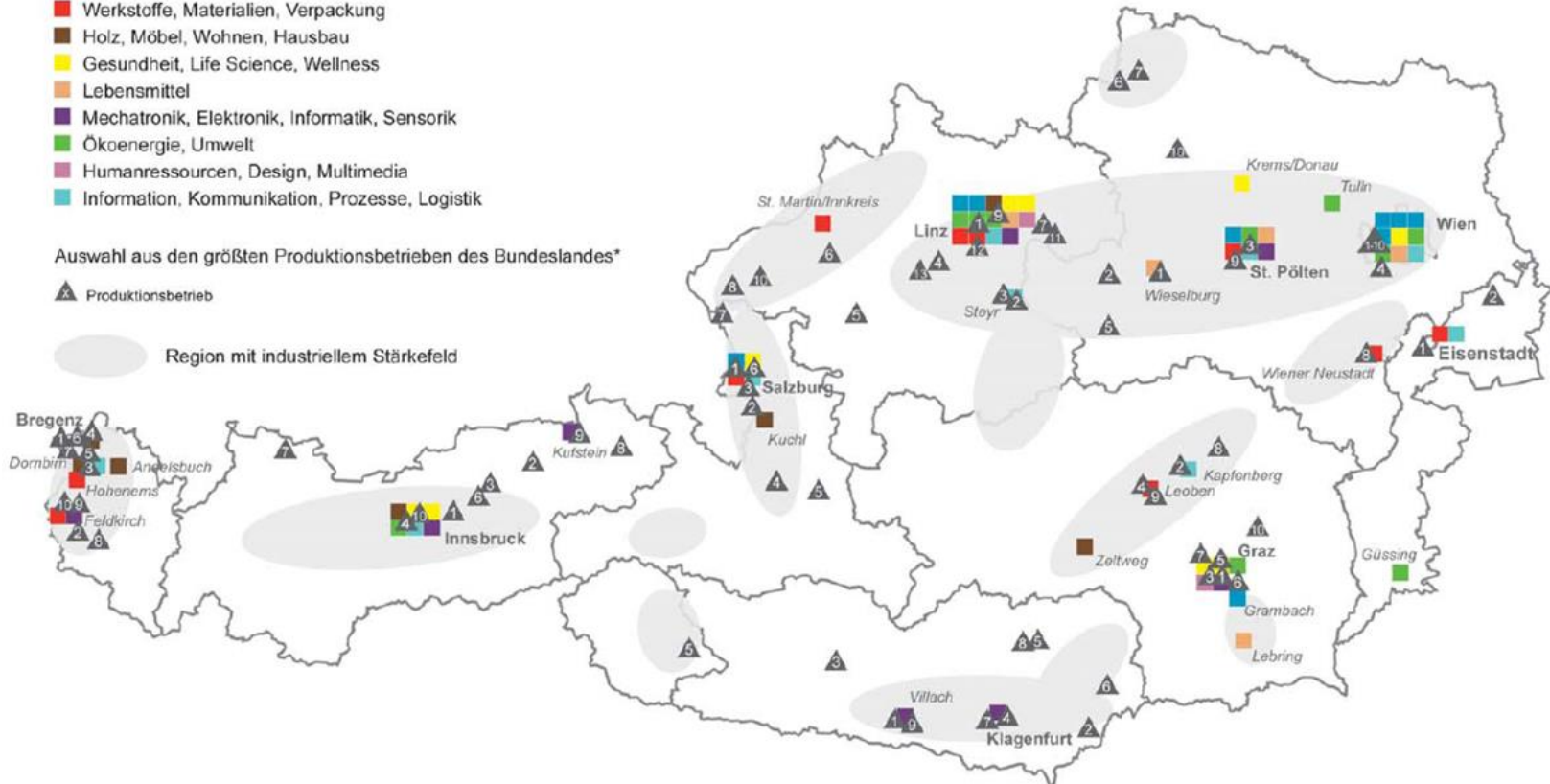
## Cluster und Netzwerke in den Bundesländern und überregionale Initiativen

- Automobil, Eisenbahn, Verkehr, Luft- und Raumfahrt
- Werkstoffe, Materialien, Verpackung
- Holz, Möbel, Wohnen, Hausbau
- Gesundheit, Life Science, Wellness
- Lebensmittel
- Mechatronik, Elektronik, Informatik, Sensorik
- Ökoenergie, Umwelt
- Humanressourcen, Design, Multimedia
- Information, Kommunikation, Prozesse, Logistik

Auswahl aus den größten Produktionsbetrieben des Bundeslandes\*

Produktionsbetrieb

Region mit industriellem Stärkefeld



\* AMS-Betriebsmonitoring (Stand Mai 2013), eigene Erhebungen

# Diverse Skill & Knowledge Base “making things” - 1



- **MACHINERY/AUTOMATION/ROBOTICS/DIGITAL INTEGRATION.**  
E.g. Lisee, Binder & Co, Trumpf, Engel, Wintersteiger, Bernecker & Rainer, Knapp Logistics, Salomon Automation, Heron Group, Westcam Data Technologies, Fronius, Anton Paar, Augmensys, voestalpine wire rod.
- **AUTOMOTIVE** > car market imports. E.g.: engine+drive-train, power/safety-critical electronics, lighting, emission control. E.g. AVL, TTTech, ZKW Group, SDI Battery Systems, Magna, Rosenberger, Steyr, KTM, BRP, MIBA.
- one of three European countries with a **SEMICONDUCTOR & ELECTRONICS-BASED-SYSTEM** industrial base & auxiliary technologies (handling, design, QM, hybrid, analog-digital, LED, sensors, circuit boards, specialities, software) - Infineon, ams, NXP, AT&S, EV Thalner, LAM Research, Lantiq - Graz, Villach, Linz, Wien.

# Diverse Skill & Knowledge Base “making things” - 2



- **LIFE SCIENCES** with a long tradition, strong science/industrial players + a lively central-European start-up scene. Vaccines, anti-inflammatory, oncology. E.g. Shire, Boehringer-Ingelheim, Novartis, CeMM, IMP, IMBA, IFA.
- **METALLURGY & MATERIALS & PROCESSING TECHNOLOGIES** (metals, plastics, compounds, ceramics, nanostructured materials). E.g. voestalpine, Böhler-Uddeholm, Plansee, Treibacher, Lithoz, Greiner, Borealis.
- **RAIL TECHNOLOGIES.** Engines, rolling stock, rails, switches, signalling, billing. E.g. Siemens, Bombardier, VAE, Ski Data.
- **AVIATION TECHNOLOGIES & SPACE:** > 300 Companies. E.G. FACC, Boehler Uddeholm, TTTech, List, RUAG, Diamond Aircraft, Schiebel, Magna.

# Diverse skill & knowledge base “making things” - 3



- **ENERGY EFFICIENCY, RENEWABLES, AND CORRESPONDING BUILDING TECHNOLOGIES.** hydro-electric, solar (industry & research). E.g. Andritz, Baumann, Sunflower, Omicron, high-rise wood buildings (e.g Rhomberg).
- **METALLURGY & MATERIALS & PROCESSING TECHNOLOGIES** (metals, plastics, compounds, ceramics, nanostructured materials). Broad science base + top players E.g. voestalpine, Böhler-Uddeholm, Plansee, AMAG, Treibacher, Lithoz, Greiner, Borealis.
- Non-research-based innovation is becoming part of “industrial”: creative industries services (e.g. design, usability), business models.

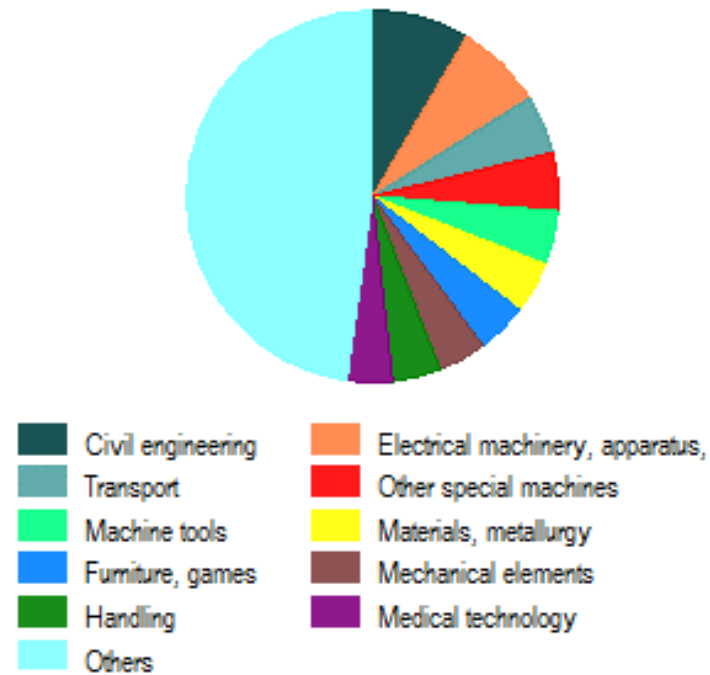


# Austrias Patent Profile

Source: WIPO 12/2015



Patent Applications by Top Fields of Technology (2000 - 2014)



Source: WIPO statistics database; last updated: 12/2015

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