Unique Industrial Business Location
Upper Austria

Study Visit to Guangzhou and Chengdu

DI Bruno LINDORFER
TMG Upper Austria

24 - 28 November 2014
Agenda

- **TMG Group – Upper Austria’s Business Agency**
- Attractiveness of Upper Austria as a Business Location
- Strategic Economic and Research Program: Innovative Upper Austria 2020
- Industrial/Economic Development Strategies Upper Austria:
  - Smart Specialization Strategy (S3)
  - Industry 4.0 – Advanced Manufacturing
The TMG is the Business Agency of the Region Upper Austria and the Leading Company of the TMG Group.

TMG is the Driving Force and Coordinator for Economic Growth by:

- Promoting the Extension of Existing Companies in Upper Austria
- Starting up of New Enterprises in Upper Austria
- and Pushing the Competitiveness of Upper Austrian Enterprises by Promoting Innovation especially with the Means:
  - Cooperation
  - Professional Innovation Strategies and Innovation Processes
  - Acceleration of the Diffusion of Knowledge within Upper Austria´s Leading Industries (Automotive, Mechanics & Automation, Material Production in Metals and Plastics etc.) with the Means of a Renowned Professional Cluster Organization

Thus generating Prosperity for and in Upper Austria!
Services of TMG for Enterprises

Business Unit: Investment Support / Location Management

What TMG does for Enterprises:

• Scouting and Development of Industrial Sites for Companies
• Management of regional Innovation Strategies and Infrastructure (Technology Centers)
• Support of inward investment, especially in Upper Austrian economic Focus Areas and Key Industries
• Support for human resources management
• All TMG Services are free of Charge for Companies (investing) in Upper Austria

www.tmg.at/betriebsansiedlung
Upper Austria offers a variety of services for international people

Service Center Welcome2Upper Austria

- The Welcome2Upper Austria Service Center is the central contact point for international specialists and their families as well as for human resource departments of Upper Austrian companies
- Consulting and assistance regarding all questions relating to a professional and private start in Upper Austria
- Support of international specialists during their stay to integrate them in Upper Austria
- Information hub and cross-linking of all stakeholders working on the topic of internationalisation

www.come2upperaustria.com
Clusters and cross-sectoral networks in Upper Austria

Eco-Energy (Upper Austrian Energiesparverband)

Food (Upper Austrian Chamber of Commerce)

Logistics (Association for Network Logistics)
Benefits for cluster and network partners

Information platform as springboard for increased success
Databases, company interviews, quarterly journals, company directories...

Knowledge transfer and management in the network
Regular specialized events; 1,200 events with 48,000 participants

Initiating and supporting cooperation projects
340 cooperation projects with 1,400 partners; 64 % new products, 25 % new production processes, 11 % specific qualifications

Positioning the partners both home and abroad
Technology presentations, branch image, trade fairs

Supporting companies as they enter new markets
Cooperations with European regions, EU-projects

Information and Communication
Qualification
Cooperation
Marketing & PR
Internationalisation

8 December 2014
Agenda

- TMG Group – Upper Austria’s Business Agency
- Attractiveness of Upper Austria as a Business Location
- Strategic Economic and Research Program: Innovative Upper Austria 2020
- Selected Industrial/ Economic Development Strategies in Upper Austria:
  - Smart Specialization Strategy (S3)
  - Industry 4.0 – Advanced Manufacturing
Attractiveness of Upper Austria’s as a Business Location

1. **Strong Industrial Base**: Leading Austrian Region regarding Industrial Production, Technological Export and Patents. Well-balanced, economic structure (Mix of branches & sizes).

2. Leading European Region regarding **Industrial Production per capita** (“INDUSTRIE 4.0”) and “**Mechatronics** “

3. **Headquarter of many global market leaders in Smart Technological Niches** (Smart Specialization Strategies “S3”)

4. **Attractive Conditions for Enterprises and Employees**

5. **Strategic Regional Economic and Research Programmes (“S3”)**

6. **Availability of highly qualified and motivated personnel**

7. Leading European Region regarding **“Innovation through Cooperation”** (CLUSTERLAND Upper Austria)

8. **Geographic Position** in the Heart of Europe and Efficient Transport Infrastructure / Very Close to Europe’s Industry Locomotive **Germany**

9. **High Social and Political Stability**

10. **High Quality of Life and Security**
Austria and Upper Austria – In the Centre of Europe

Distance
Starting point: Linz

<table>
<thead>
<tr>
<th>Location</th>
<th>Miles</th>
<th>Kilometers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praha</td>
<td>155.3</td>
<td>250</td>
</tr>
<tr>
<td>Bratislava</td>
<td>161.5</td>
<td>260</td>
</tr>
<tr>
<td>Munich</td>
<td>186.3</td>
<td>270</td>
</tr>
<tr>
<td>Zürich</td>
<td>372.6</td>
<td>580</td>
</tr>
<tr>
<td>Brussels</td>
<td>558.9</td>
<td>940</td>
</tr>
<tr>
<td>London</td>
<td>745.2</td>
<td>1250</td>
</tr>
</tbody>
</table>
Transport infrastructure

Major European transport axes cross in the central Linz area
Upper Austria is Austria‘s leading state regarding industry production, exports and technology:

- 14.0% of total area of Austria – 11,982 km²
- 16.8% of the population – 1,416,772 (2012)
- 24.3% of industrial production of Austria
- 26.8% of the exports of Austria
- 6.9% unemployment rate (Austria: 9.4%, Feb 2014)
Upper Austria - Austria’s export motor!
Exports of the Austrian States 2012 (Exports of Goods)

Austria 2012: € 123.5 bn
Export Share UA: 25.0 %

<table>
<thead>
<tr>
<th>State</th>
<th>Export (€ bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Austria</td>
<td>30.8</td>
</tr>
<tr>
<td>Lower Austria</td>
<td>19.7</td>
</tr>
<tr>
<td>Styria</td>
<td>18.9</td>
</tr>
<tr>
<td>Vienna</td>
<td>18.3</td>
</tr>
<tr>
<td>Tyrol</td>
<td>11.1</td>
</tr>
<tr>
<td>Salzburg</td>
<td>8.3</td>
</tr>
<tr>
<td>Vorarlberg</td>
<td>8.3</td>
</tr>
<tr>
<td>Carinthia</td>
<td>6.3</td>
</tr>
<tr>
<td>Burgenland</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Source: Statistik WKO OÖ; Pictures: BMW, KTM, OÖ Tourismus, Silhouette
Graphic: TMG
Austria is ranking second regarding Productivity in Industrial Production, globally.
Leading branches in Upper Austria

- voestalpine, AMAG, Borbet Austria
- BMW, MAN, MIBA, KTM, BRP (Rotax), Bosch
- Siemens VAI, Trumpf, ENGEL, Ebner, KEBA, Rübig
- Borealis, Greiner, Ke Kelit
- Team 7, FM, EWE, DAN, Haka, Internorm
- pez, Kornspitz, Nestlè, Vitalis
- Intel, Infineon, Fujitsu, Dynatrace
- Fronius, Scheuch, BWT, Pöttinger

- Steel, aluminium, metal
- Vehicles, Engines, Automotive Components
- Mechanical, plant and environmental engineering
- Plastic products, Chemicals, Paper
- Wood, furniture, windows, doors
- Food, luxury food
- I&C-technologies
- Green Tech: solar electronics, air, water, waste
### voestalpine Group

#### Leading Position in the Core Segments

<table>
<thead>
<tr>
<th>Segment</th>
<th>Steel</th>
<th>Special Steel</th>
<th>Metal Engineering</th>
<th>Profilform</th>
<th>Automotive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top European player</strong></td>
<td>Top-three European supplier of high quality sheet and global top position in heavy plate for the most demanding applications.</td>
<td>Worldwide leader in tool steel. Leading position in high-speed steel and special forgings.</td>
<td>European market leader for rails and processed wire, world market leader for turnouts and complete railway systems; leading position in welding consumables and seamless tubes.</td>
<td>Worldwide market leader in special sections and custom roll forming; leading position in precision strip.</td>
<td>Top-three European player in the automotive supply industry for special components.</td>
</tr>
<tr>
<td><strong>Special Steel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Global leadership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metal Engineering</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Global leadership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

As of April 1, 2012

#### Metal Forming

<table>
<thead>
<tr>
<th>Global leadership</th>
</tr>
</thead>
</table>

Leading worldwide provider of high-quality metal processing solutions, in particular special sections and precision steel coil as well as special components for the automobile industry.
BMW Motoren Gesellschaft m.b.H.
Steyr, Upper Austria

If you take the amount of all new supplied cars, more than 70% have an engine from Steyr!

- Investments (1979 - 2011): EUR 4.7 bn
- 7th expansion phase (2002 – 2005): EUR 500 m
- Enlargement of diesel capacity (2006): EUR 300 m

Turnover in € m

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2382</td>
<td>3084</td>
<td>3587</td>
</tr>
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</table>

Engine production in 1000 units

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>713</td>
<td>1036</td>
<td>1207</td>
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</tbody>
</table>

Staff

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2506</td>
<td>2484</td>
<td>2594</td>
</tr>
</tbody>
</table>

Source: BMW May 2012

Steyr:
BMW Group diesel engine development centre
Global Market Leaders in Intelligent Niches from Upper Austria (I)

**Backaldrin**
Inventor of Europe‘s most successful brand of bread roll (Kornspitz)

**BWT**
Europe‘s leading water technology company

**Engel**
Global Market leader in the production of injection moulding machinery for plastics

**Fronius**
One of the world‘s leading suppliers of battery chargers, electric welding equipment and solar electronics

**Greiner**
World market leader in the production of tools and systems for window profile production

**Keba**
Global market leader for solutions in the areas of industrial, banking and services automation
European and Global Market Leaders in Intelligent Niches from Upper Austria (II)

KTM Power Sports
Motorcycle manufacturing specialist

Miba AG
One of the world‘s leading suppliers of high-tech sintered components, slide bearings and friction linings

Rosenbauer
World’s leading producer of aircraft rescue fire fighting vehicles (airport ARFFs)

Teufelberger
One of the world‘s leading producers of ropes, plastic straps, baler twine and synthetic fibres

Trodat
Global market leader for self-inking stamps and laser engraving machines
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STRATEGIC ECONOMIC AND RESEARCH PROGRAMME

INNOVATIVE UPPER AUSTRIA 2020
The 4 Core Strategies based on:

- Strategies on EU level
- Recommendations of the Austrian Council for Research and Technology Development (RFTE)
- Basic strategic recommendations of the Upper Austrian Council for Research and Technology (RFT OÖ)
- Upper Austria focuses on a productivity-oriented growth strategy.
4 CORE STRATEGIES

Location Development
• attract the best scientific and business minds, strong economic agency, strengthen science and research as a basis for future economic development

Industrial Market Leadership
• promote research and development in areas in which companies excel, important are knowledge-based business models and export-oriented industrial sector, invest in efficient, adaptable production systems and new knowledge-based services.
• pursue long-term technological leadership in global niches
• competitive advantage through quick diffusion of new technology in processes and products, innovative models of technology transfer, furthering clusters, new approaches to solve the greatest societal challenges including open innovation and creative communities.
4 CORE STRATEGIES

Internationalisation

- **strengthen international orientation** of the education, research and businesses and **support activities of local companies**, position Upper Austria as an accepted business and research region, form long-term strategic alliances with other regions
- attract **excellent international researchers** and high-profile global companies, promote the establishment of research headquarters of international corporations in Upper Austria

Future and Emerging Technologies

- set preconditions to **recognize global future trends**
- strengthen awareness for importance of research and development in society, encourage **entrepreneurial and research spirit** throughout education
5 FIELDS OF ACTIVITY

- Industrial Production Processes
- Energy
- Health | Ageing Society
- Food | Nutrition
- Mobility | Logistics

- A top-down and bottom-up stakeholder process has led to the definition of 5 Fields of Activity.
- Alignment with Grand Challenges and Strategies in the European Research Area
- Strategic goals within the 5 fields reflect the innovation chain Education – Research - Economy.
- For operational implementation the Fields of Activities are further detailed in Topics and Measures.
Linking Strategy, Activities and the Innovation Chain

Core Strategies
- Location Development
- Industrial Market Leadership
- Internationalisation
- Future and Emerging Technologies

Innovation Chain
- Forschung
- Bildung
- Wirtschaft

Fields of Activity
- Industrial Production Processes
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**Industrial/Economic Development Strategies Upper Austria:**

- Smart Specialization Strategy (S3)
- Industry 4.0 – Advanced Manufacturing
Upper Austria’s **Smart Specialization Strategy S3**

- **Strengthen the Strengths**
- **Innovation-oriented**

- Upper Austria started to implement a Smart Specialization Strategy as early as 1998, although at that time it was called the Upper Austrian 2000+ Strategic Programme.

- Upper Austria maintains a **permanent dialogue with the EU** (especially the Enterprise DG).

- **Goals: Competitiveness!**
  - Innovation Leadership and High Quality
  - Intelligent Niches
Upper Austria’s **Smart Specialization Strategy**

Cooperation with the EU and international:

- **DG Enterprise (EU):**
  TMG CEO B. Lindorfer was member of High Level Expert Group (HLEG) on Cluster Strategies (2010) and Key Enabling Technologies (KET) (2012)

- **An OECD Case Study regarding S3**
  “Smart Governance for Smart Specialization in the Upper Austria Region: making use of mixed top-down, bottom-up planning for regional competence development”

- **EU Strategy for the Danube Region (EUSDR)**

- **Current European Service Innovation Center (ESIC) project:**
  Development of the “Upper Austrian Service Innovation Strategy”
“Kings Discipline” Mechatronics

Mechatronics: Simultaneous, integrated Engineering of various Disciplines and Domains

- Mechanics
- Fluid Mechanics
- Software
- Automation
- Data Management

ICT

Specific Domain Knowledge
- Specific Domain Knowledge e.g. Automotive Industry
- Electrical Drives
- Power Electronics
- Micro Electronics
- Sensor Technologies

Mechanical Engineering

Mechatronics

Electrics
INDUSTRIE 4.0 is a **fully integrated** (horizontally and vertically, from raw material supplier to end consumer) and **fully automatized production chain** with an **intelligent workpiece**.

- Self-organization of production sequences between intelligent machines and intelligent workpiece (e.g. tracking with radio-frequency identification RFID)
The Potential of INDUSTRIE 4.0

- Allows for Individualized Customer Requests (Lot size 1)
- Even small Lot Sizes can be produced with costs a little as for mass production (INDUSTRIE 4.0 overcomes the Law of „Economy of Scale“)
- Optimized Decision Making of the Production Steps on-line during Production
- Increase of resource productivity and –efficiency
- Generate completely new Potentials for Value Added by new Services (disruptive Business Models)
- Demographic-sensible Design of Work / Work-Life-Balance
- Increases global Competitiveness of Production in High Wage Countries (like Europe and Austria)
INDUSTRIE 4.0 - Challenges

• Mastering Complexity (INDUSTRIE 4.0 is a PLM-Chain) “Each Chain is just as strong as its weakest Link”
• SMEs, which are not qualified (certified) according to INDUSTRIE 4.0 will most likely not be accepted as Suppliers in the near Future
• Availability of a sufficient high number of highly qualified Engineers
• Missing Standards and Interfaces
• IT-Security
• New Business Culture / Missing acceptance by Employees
• Legal Issues (e.g. liability in case of remotely operated production lines)
Major Boundary Conditions decisive for global Competitiveness of the Producing Industry

• Cost and Flexibility of Labor
• Cost and Availability of Energy (this is closely related with the Energy Policy of a country)
• Cost of Raw Materials (Raw Materials prices are more or less dictated by the global markets)
• Availability of highly skilled workforce (blue collar and white collar)
• Availability of Sub-suppliers of Key Technological Components and Key R&D-Partners within short distance (Leading Technologies Industry Clusters)
• Innovation Leadership (Public incentives for Innovation etc.)
## Quality of life

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Austria</td>
<td>9.81</td>
</tr>
<tr>
<td>2</td>
<td>Norway</td>
<td>9.59</td>
</tr>
<tr>
<td>3</td>
<td>Switzerland</td>
<td>9.52</td>
</tr>
<tr>
<td>4</td>
<td>Australia</td>
<td>9.26</td>
</tr>
<tr>
<td>5</td>
<td>Luxembourg</td>
<td>9.24</td>
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<tr>
<td>6</td>
<td>Denmark</td>
<td>9.16</td>
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<tr>
<td>7</td>
<td>Canada</td>
<td>9.15</td>
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<td>22</td>
<td>United Kingdom</td>
<td>7.37</td>
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<tr>
<td>23</td>
<td>Czech. Republic</td>
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</tr>
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Source: IMD World Competitiveness Yearbook 2010 – Table 4.4.27
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