Mechatronics - Cluster Upper Austria

Shaping the future with advanced manufacturing
Organization chart

Business Upper Austria
Werner Pamminger (CEO), Bruno Lindorfer (CEO)

Clusterland
Christian Altmann (Director)

Advisory Board
Speaker: Josef Kinast

Knowledge Management
Bernhard Schauer

International Affairs
Christoph Reiss-Schmidt

Automotive Cluster
Wolfgang Komatz

Plastics Cluster
Elmar Paireder

Furniture & Timber construction Cluster
Erich Gaffal

Health Technology Cluster
Nora Mack

Mechatronics Cluster
Elmar Paireder

Information Technology Cluster
Robert Stubenrauch

Environmental Technology Cluster
Sigfried Kepplinger

Network Human Resources
Andreas Geiblinger

A. Board Speaker: Ing. Rudolf Mark
A. Board Speaker: Di Dr. Friedrich Kastner
A. Board Speaker: Mag. Roland Ragaller
A. Board Speaker: Mag. Michael Farthofer
A. Board Speaker: Prok. Wolfgang Rathner
A. Board Speaker: Mag. Ulrike Rabmer-Koller
A. Board Speaker: Ing. Manfred Huemer

International Affairs
Christoph Reiss-Schmidt

Network Resource- and Energy Efficiency
Sigfried Kepplinger

A. Board Speaker: Ing. Manfred Huemer
Core Activity – Platform AVM

- Building up frame conditions for implementing AVM in Upper Austria
  - The platform was initiated by the Minister of Economy, the Austrian Economic Chamber and the Federation of Austrian Industry
  - The Board consists of the initiators, CEOs from lead-companies and research representatives
  - The platform is coordinated by the Business Upper Austria
  - The board acts as steering committee for supporting activities to prioritize them
  - Supporting Activities are based on suggestions from clusters, interest groups and companies
  - Knowledge exchange interest groups are directly linked to the platform and submit project ideas (AVM-Users and AVM-Supporters)
Major projects – model region

- Outcome of the platform AVM
  - Connecting the triple Helix for boosting innovations
  - Making AVM visible and tangible by the use of show cases in companies, research labs and education facilities
  - Qualification for further needs like robotics and human machine interaction, virtual assistance systems, data research and analysis, modelling and simulation, etc.
  - Doing applied and specific research and transfer the results to the companies
  - Connecting the triple Helix internally and trans-regional and trans-national
Major projects – maturity model

- Outcome of the platform AVM
  - Giving the companies a model to evaluate their AVM status quo a vision on their objective and support to define a road map to the objective
  - Evaluation of the model regional and trans-regional to get an overview of different working principles and research stati
  - Standardize the model to scale it to different requirements
  - Testing the model trans-regional to get benchmarks
Major projects – Enterprise 4.0

➢ Outcome of the partner Mechatronics-Cluster in Lower Austria
  ➢ Set-up of a cooperation-network including leading companies of the region and Universities, working on real use-cases in order to design the „Austrian (European) Way of Digital Success
  ➢ Establishing the region as a key-player in the field of “Digital Business Transformation”
  ➢ Increasing operating profit margin by using the new digital possibilities in each particular business process

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Interaction between technology, international business economics and entrepreneurship (Source: Kormann, Schilling)
The breathing production - ProdNET

Outcome of the Interreg project ProdNET (12.2012 – 03.2015)

- Connecting two Universities of Applied Sciences with complement research focus thus providing companies support along the value chain. TH-Deggendorf (technical part) FH-Steyr (organizational part)
- Widen the gathering area for Cluster activities
- Got a better overview on the different branches and their specific needs within the larger area. Shaping the offerings of the Universities and the Clusters.
- Knowledge exchange by student and professor interchange thus a competence enlargement of the regional Universities
- Companies got in contact with potential Partners, Suppliers and Customers and expanded their network
- Set up of a trans-regional purchasing network for electronic SMEs to bundle orders and getting a better price.
- Expand resources by sharing large orders with the production network
- Set up of a core competence network to work on more complex orders
State of play

- Horizon 2020 Innosup 1-2015 (AUT, IT, NL, GER)
  - Proposal submitted (first stage)

- Central Europe (AUT, HUN, GER, PL, IT)
  - Proposals submitted (first stage)

- Interreg Va
  - Participation to be checked

- Enterprise 4.0
  - University of Halmstad (Sweden), Technical University Vienna, University of Applied Sciences Krems and St. Pölten, University of Business and Economics Vienna

- Implementing a local strategic economic and research programme – Innovative Upper Austria 2020 (www.ooe2020.at)
Main challenges / potential

**Challenges**
- Establish the framework for companies to attract trans-regional work
- Giving AVM a shape, draw a vision and developed a road map for implementation
- Comparable Key Performance Indicators (KPIs)

**Potential**
- Expanding the microcosm of acting local – stay local and act global
- Trans-national benchmarks with the branch to identify own strengths and weaknesses. Therefore company need comparable KPIs
- Get the “best in class” knowledge from e.g. suppliers or researchers
- Implementing a trans-regional special interest group to expand the network
- Using corporate facilities thus share risk and costs
- Building up subsidiary and Moving a part of the local production network to your customers place
Global trends

- **Big Data and Data Analysis**
  - Data analyzing and big data handling is essential for product development / improvement
  - Identify the potential and satisfy the needs
  - Implementing new maintenance strategies due to real-time production data analysis

- **“Smart everything”**
  - Self-steering production with communicating components, tools, and machines
  - Reduction of bottleneck losses in batch productions

- **Assistance Systems (virtual reality, modelling, simulation, . . .)**
  - Off-line learning with virtual reality for assembly line workers
  - Production process simulation (discrete-event simulation) for decision-making support

- **Complexity management**
  - Setting up new ways of entangled research and education like Mechatronics
Contact & Information

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