

**Abteilung für Stadt- und Regionalentwicklung
Department of Urban and Regional Development**



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**Industrial cluster learning platforms:
Methodology and Case Studies of four local Austrian industry
clusters**

SRE-Discussion 64

1998

SRE

Industrial Cluster Learning Platforms: Methodology and Case Studies Of Four Local Austrian Industry Clusters

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July 1998

Project Phase I: Research Design and Literature Review

The first phase of the project deals with identifying and locating clusters in Austria that UNIDO contracted us to research¹ as potential 'learning platforms' that might prove valuable for regional development professionals from transitional and developing countries who learn best from visiting 'clusters in action.'

This project started with the review of previous studies conducted mainly by the WIFO (Wirtschaftsforschungsinstitut) and the IWI (Industriewissenschaftliches Institut), which relied principally on the "Porter approach." Both studies focused on the national level of competitive advantage and did not locate the clusters geographically.

Since this project is based on detailed studies of specific industrial clusters and districts, it is first necessary to map these competitive clusters in Austria. For this purpose, useful regional data sets (number of workers and firms associated with a cluster) are needed. Ideally, the theoretical mapping should be graphically mapped with Arcview or equivalent software. A brief description of basic features for clusters is provided to support the choice and understanding of which merit further investigation. During this phase, direct contacts were also made with other researchers and official active in the field.

Tasks in Phase I:

- identifying clusters using existing literature
- constructing data set
- locating clusters
- mapping clusters graphically
- describing the basic features of the cluster
- mapping the theoretical work done on Austrian clusters

Step 1:

Two major institutes investigated and identified clusters in Austria. The Austrian Institute for Economic Research (Peneder, 1994/WIFO) and the Industriewissenschaftliches Institut (Weiss, 1994/IWI) both followed the approach outlined by Porter. Using SITC data, they

¹ Research funds provided by UNIDO

identified competitive clusters in Austria. Neither group, however, identified locations of concentrated competitive clusters. WIFO has also published another interesting piece of work on technological clusters in Austria. Following the approach by Jaffe, Hutschenreiter (1994) applied patent data to identify technological clusters. This work can be seen as a useful complement to the other studies. Although that paper mentioned the local dimension of technological clusters, there was no effort undertaken to map the identified clusters.

Unfortunately, there are no studies of Austrian clusters based on the value-chain approach used by OECD and others in which input-output relations between firms are used to identify clusters. This is due mainly to the absence of current and detailed input-output tables. Moreover, data on the number of firms operating on a regional level in specific industries classified by the SITC are cumbersome to handle and difficult to acquire.

One way out of this dilemma is to assume that input-output based clusters found in other European countries or the US are comparable to Austrian clusters.² This approach introduces the further problem of comparability between the different industrial classification systems used in other countries. However, Austria's adoption of guidelines concerning the EU harmonization of the national statistics means there will soon be regional data on the number of firms and workers available with NACE classifications. NACE is the European-derived version of the ISIC Rev. 3, which permits harmonization with other ISIC-based classifications as well. Therefore, clusters based on studies using North America's SIC data could be transformed via ISIC into the NACE system. This approach may introduce some loss in data precision, but it nonetheless seems to be the most appropriate way to handle this particular problem.

A further difficulty associated with identifying or mapping regional clusters using any kind of method is that appropriate regional data available only from the "Arbeitsstättenzählung" (Workplace employment) for 1991. This biases current studies toward older clusters, such that recently emerging clusters will be overlooked. Thus, results using these data have to be taken cautiously. Accordingly, existing studies of Austrian clusters were combined with regional data to provide reasonable mappings of known or traditional clusters in Austria, thereby minimizing the use of 7-year old data.

Approach: Use identified clusters drawn from 1994 studies (Hutschenreiter, Peneder, Weiss) and group the sectors defined by the ÖNACE 1995 system to the associated clusters.

Step 2:

The identified clusters are:

- Construction and Living
- Metalworking
- Paper and Wood
- Ski, Ski Boots, and Sports Articles
- Textile
- Traffic: Automobile
Rail Traffic

² This is the standard approach used in many studies of cross-national economic behavior, e.g., Keller, 1997.

All seven clusters have been labeled either strong or semi-strong by Weiss, while Peneder also identifies all of these sectors, except the Ski and Sports articles industry international competitive branches. Hutschenreiter considers the traffic, construction and living, and the ski, ski boots and sport articles as technological clusters. At least one study supplies reasoning for identifying other potential clusters (electronics, food, pharmaceuticals, rubber and plastics). The appropriateness of this cluster list will be tested in interviews held with researchers in this field, and with UNIDO officials.

Regrouping the 3-digit sectors (ÖNACE 1995) into clusters is necessary and the studies by Hutschenreiter, Peneder and Weiss were taken as sector guidelines (thus the SITC 3 and 4-digit sectors that belong to a cluster have been used as help to identify the equivalent 3-digit ÖNACE sectors). The latter two studies followed the Porter approach, which resulted in 'machines' being relocated from the basic metalworking cluster and into another associated cluster. This necessitated data on an even more detailed level (13 classes = 4-digit) and our decision to assign the machinery industry to the metalworking cluster, except for three cases (see below).

List of clusters with associated sectors:

The following is a list of adjusted clusters, with their associated sectors (machine production having been divided into the different sectors) using the ÖNACE 1995 classification on the groups (3-digit) and the classes level (4-digit).

- Residential and related construction
 - 17.51 Manufacture of carpets and rugs
 - 20.3 Manufacture of builders' carpentry and joinery
 - 25.23 Manufacture of builders' plasticware
 - 26.11 Manufacture of flat glass
 - 26.12 Shaping and processing of flat glass
 - 26.13 Manufacture of hollow glass
 - 26.3 Manufacture of ceramic tiles and flags
 - 26.4 Manufacture of bricks, tiles and construction products (baked clay)
 - 26.5 Manufacture of cement, lime and plaster
 - 28.63 Manufacture of locks and hinges
 - 29.13 Manufacture of taps and valves
 - 29.52 Manufacture of machinery for mining, quarrying and construction
 - 29.7 Manufacture of domestic appliances n.e.c.
 - 31.2 Manufacture of electricity distribution and control apparatus
 - 31.3 Manufacture of insulated wire and cable
 - 31.5 Manufacture of lighting equipment and electric lamps
 - 36.1 Manufacture of furniture
 - 45.1 Site preparation
 - 45.2 Building of complete constructions or parts thereof; civil engineering
 - 45.3 Building installation
 - 45.4 Building completion
 - 45.5 Renting of construction or demolition equipment with operator
- Metalworking
 - 27.1 Manufacture of basic iron and steel and of ferro-alloys (ECSC)
 - 27.1.1 Manufacture of tubes

- 27.2 Other first processing of iron and steel and production of non ECSC ferro-alloys
- 27.4 Manufacture of basic precious and non-ferrous metals
- 27.5 Casting of metals
- 28.1 Manufacture of structural metal products
- 28.2 Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers
- 28.3 Manufacture of steam generators, except central heating hot water boilers
- 28.4 Forging, pressing, stamping and roll-forming of metal; powder metallurgy
- 28.5 Treatment and coating metals; general mechanical engineering
- 28.61 Manufacture of cutlery
- 28.62 Manufacture of tools
- 28.7 Manufacture of other fabricated metal products
- 29.11 Manufacture of engines and turbines except aircraft, vehicle and cycle engines
- 29.2 Manufacture of other general purpose machinery
- 29.3 Manufacture of agricultural and forestry machinery
- 29.4 Manufacture of machine tools
- 29.51 Manufacture of machinery for metallurgy
- 29.53 Manufacture of machinery for food, beverage and tobacco processing
- 29.56 Manufacture of other special purpose machinery n.e.c.
- 29.6 Manufacture of weapons and ammunition
- 31.1 Manufacture of electric motors, generators and transformers
- 35.1 Building and repairing of ships and boats
- 37.1 Recycling of metal waste and scrap

- Paper and Wood

- 20.1 Sawmilling and planing wood, impregnation of wood
- 20.2 Manufacture of veneer sheets; manufacture of plywood, laminate-board, particle board, fibre board and other panels and boards
- 20.4 Manufacture of wooden containers
- 20.5 Manufacture of other products of wood; manufacture of articles of cork, straw and plaited materials
- 21.1 Manufacture of pulp, paper and paperboard
- 21.2 Manufacture of articles of paper and paperboard
- 29.55 Manufacture of machinery for paper and paperboard production

- Ski, Ski Boots, and Sports Articles

- 36.4 Manufacture of sports goods

- Textile

- 17.1 Preparation and spinning of textile fibres
- 17.2 Textile weaving
- 17.3 Finishing of textiles
- 17.4 Manufacture of made-up textile articles, except apparel
- 17.54 Manufacture of embroideries and of other textiles n.e.c.
- 17.6 Manufacture of knitted and crocheted fabrics
- 17.7 Manufacture of knitted and crocheted articles
- 18.1 Manufacture of leather clothes
- 18.2 Manufacture of other wearing apparel and accessories
- 18.3 Dressing and dyeing fur, manufacture of articles of fur
- 19.1 Tanning and dressing of leather

- 19.2 Manufacture of luggage, handbags and the like, saddlery and harness
- 19.3 Manufacture of footwear
- 24.12 Manufacture of dyes and pigments
- 24.7 Manufacture of man-made fibres
- 29.54 Manufacture of machinery for textile, apparel and leather production

•Automobile

- 17.53 Manufacture of nonwovens and articles made of nonwovens, except apparel
- 25.11 Manufacture of rubber tyres and tubes
- 25.12 Retreading and rebuilding of rubber tyres
- 29.12 Manufacture of pumps and compressors
- 29.14 Manufacture of bearings, gears, gearing and driving elements
- 31.61 Manufacture of electrical equipment for engines and vehicles n.e.c.
- 34.1 Manufacture of motor vehicles
- 34.2 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
- 34.3 Manufacture of parts and accessories for motor vehicles and their engines
- 35.4 Manufacture of motorcycles and bicycles
- 35.5 Manufacture of other transport equipment n.e.c.

•Rail Traffic

- 35.2 Manufacture of railway and tramway locomotives and rolling stock

As an alternative, the total manufacturing of machinery and equipment could fall within the metalworking cluster. Thus, the ten 4-digit classes starting with 29 could be transformed into two 3-digit groups (29.1 and 29.5) and then grouped into the metalworking cluster. As result we can use – except in three cases (25.23, 28.63, 31.61) 3-digit data for all sectors. In these three cases, a sensitivity analysis would allow us to detect the effects of using a more aggregated level of analysis (groups level). Also it may be useful to do such an analysis for some other sectors ex post. Both approaches seem appropriate, the latter being the more elegant and meaningful one.

Approach: Data from the "Arbeitsstättenzählung 1991" (Count of workplaces, 1991) were classified by ÖNACE 1995 on the class level (four-digit) and regrouped into the clusters. Data densities at the political district level for cluster industries were calculated and geographic cluster concentrations were thereby identified.

Further tasks: Given the results from the analysis, key contact persons or groups for each cluster were consulted. Chambers of commerce, appropriate ministries, regional development agencies, and others were included. The world wide web was very useful in identifying key regional institutions and contacts.

Project Phase II: Refining the Study Approach

In several project meetings, including those with UNIDO officials, project methods were continuously refined. First, following presentation of the results of phase I and in consideration of UNIDO objectives, the following 5 broad clusters have been considered for a more refined analysis:

Automobile
Textile
Metalworking
Construction and Living
Wood

The automobile, the textile, and the metalworking clusters were first geo-mapped on a regional level. The regions chosen, in consultation with UNIDO, for later field work were: Styria for automobiles, Vorarlberg for textiles, and Linz and surroundings for metalworking.

In continuing discussions with UNIDO, two smaller sub-clusters were identified for further inquiry: wooden furniture and ceramics. The basic data set permitted mapping key components of the wood and ceramics sub-clusters, suggesting that two areas be considered further: the Flachau region for wooden furniture and the Salzkammergut for ceramics.

Following initial fieldwork in Graz spent interviewing key persons from different institutions, associations and firms related to the Automobile Cluster Styria, a first report was presented to UNIDO for approval of content and format. Small changes in the structure of the report were made, and the previous task description was altered further. A revised report format was presented and approved.

Project Phase III: Conducting the Fieldwork

In phase III, all but one of the field studies were conducted: automobiles, wood, textiles and ceramics. Metalworking was halted during initial field investigations when regional development experts in Linz argued that, in their view, no metalworking cluster existed yet, only the recovering remnants of the former state-owned firms that were slowly regaining their foothold.

However, these same experts indicated that a very small plastics machinery cluster might be in-the-making. We considered but then rejected the possibility of including this cluster, since it was very unclear just how far it may have developed, and time was better spent improving the detail and content of completed case studies.

Project Phase IV: Four Austrian Clusters

The case studies were drafted first with the benefit of field interviews, documents, and webpage information according to the format approved initially for the Styrian Automobile Cluster. Each was then edited for language, organization, content and UNIDO client readability. Time gained by omitting one field study was spent improving the URL contacts, adding useful cluster details and contact information, and editing a third time.

The case studies were then sent back to key field contacts for review and factual editing. Professional and academic colleagues were also consulted concerning key points and specific cluster case studies. The final versions (spring 1998) were then submitted to UNIDO to be included as part of their webpage library of industrial cluster case studies and are provided here as well.

Automobile Industry Cluster: Driving Styria Forward

Major Cluster Concepts: dynamic supplier/value added chain, active/emergent governance, privatized/post-1989+1992 European restructuring environment, university support/involvement, shifting markets/technologies, globally competitive industries

Description

<http://www.austria.org/lstyria.htm>

Styria, one of the nine Austrian "Bundesländer," has until recently been somewhat isolated because of the iron curtain along its southeastern border. It was also saddled with several uncompetitive state enterprises in its old industrial areas. The Automobile Cluster Styria (ACStyria) is a new and ambitious program now being carried out by the Styrian Economic Development Agency. The cluster's development is an excellent illustration of how regional and industrial development policies can help stimulate the successful restructuring of a regional economy following Austria's entry to the EU and the opening of Styria's eastern borders to market competition. The exceptional governance and structure of ACStyria is likely to be its most interesting feature.

Product Market Scope

The newly emergent ACStyria now comprises about 100 companies with some 10,000 people working mainly in firms that directly contribute to the production of motor vehicles. Most of these firms are small and medium-size suppliers of basic materials, parts, and subassemblies to the larger original equipment manufacturers (OEMs). Large key firms, however, are additionally both generators and suppliers of high quality research and development in key technologies (e.g., internal combustion engine design, 4-wheel drive design and production, design and installation of vehicle production plants) in the international automobile market.

Where only a few firms actually manufacture vehicles (Eurostar, Steyr Daimler Puch among a few others), about half of all cluster firms can be found in the field of metalworking (e.g. light-alloy casting or general metal-cutting operations), machinery production, and toolmaking. Here the product scope is wide, covering everything from special tools for casting, stamping, bending, and drawing to complete machine parks. Production ranges from simple metal parts to bodies-in-white to sophisticated surface technologies (surface tempering). Another strong field of the cluster is the development and production of precise measuring devices. Several firms that produce tools and machinery are also active in the development and production of measuring devices, particularly where research and development is strongly involved. Several other products of major importance are important components of this cluster. About 10 firms plastic and rubber parts for the automobile manufacturer, some 6 firms supply textile and leather products to the cluster, and another 6 supply electronic products. A few specialized firms can be found in the area of software engineering, the recycling business (recycling of metals and car parts), and the production of

seats, cable harnesses and glass. Thus, the product market scope is a wide one and is representative of the full value-added-chain of the automobile industry. In addition, several other firms supply specialized services and consulting to core cluster firms.

Performance

Decline of Styria's state owned steel industry in the 80's resulted in a strong need for restructuring the region's economic base. By building upon the strongest remnants of another state-owned firm that had retained its 4-wheel drive technology just as this international market segment boomed, Styria and Austria together help propel the vehicles and transport cluster (defined in Fabris et al., 1995³) to the top industrial position in Styria. The study done by Fabris et al. counts 37 firms employing 7,800 persons and achieving a turnover of 13 millions Austrian Schillings in 1992. The production of automobiles accounts for over three quarters of the total cluster turnover, although total value added is doubtless more widely dispersed over the full set of cluster firms. Recent dynamic developments in final markets, increasing competition, and associated pressures to reduce costs and enhance productivity have led to new strategies among automobile cluster firms (see below).

Organization <http://sfg.co.at/acstyria/english/trbr.html>

1. *Entrepreneurial Firm* <http://sfg.co.at/acstyria/english/partner.html>

The numerous small and medium size firms of ACStyria supply parts and subassemblies to the regional key firms, but also to the international automobile industry. The picture for the key firms is a different one. Two key firms - Steyr Daimler Puch Fahrzeugtechnik (SFT) and AVL List – offer internationally recognized competence in research and development. SFT is specialized in the design and production of high-value system components, while AVL List offers globally recognized excellence in design and development of advanced internal combustion engines. The third key firm – Eurostar – engages mainly in the production of the Chrysler Voyager and is thus heavily dependent on high quality system suppliers; many of its inputs are still imported from North America. Magna, a Canadian firm owned by a native Austrian, is firmly established as key global player in the automobile industry and is the single biggest single cluster supplier to ACStyria's OEMs. There remains the possibility that Magna and SFT may merge, although this is unclear in early 1998. In addition, the cluster comprises some specialized suppliers of key business services.

Key Firms:

- **AVL List** <http://www.avl.co.at>: AVL List is the outstanding research and development center of the ACStyria. AVL List is a post-WWII entrepreneurial spin-off by Professor Hans List, a University of Graz

³ Fabris, W., Hohl, N., Mazdra, M., and Schick, M. (1995) Wirtschaftsleitbild Steiermark. IWI-Studie Bd. XXV, Wien: Industriewissenschaftliches Institut

faculty member, that has become highly specialized in the research and development of combustion engines, control engineering and acoustics. AVL List employs a regional staff of 1200 in Graz, has branches in the U.S. and elsewhere, and is heavily export-oriented. Key
Contact: Dr Affenzeller

- **Steyr Daimler Puch Fahrzeugtechnik (SFT)** <http://www.sft.steyr.com>: The oldest Austrian motor vehicle factory possesses know-how in core sectors of automotive engineering, with unique capabilities in drive-lines and gearing for automobiles, light utility vehicles, cross-country and four wheel drive vehicles. SFT as an Original Equipment Manufacturer (OEM) acts on the one hand as a worldwide buyer and seller of key inputs, and on the other hand develops and produces vehicles under contract as a partner for OEM's (Jeep Grand Cherokee is assembled under Chrysler contract by SFT). Key contact: DI Heckel
- **Eurostar**: Under a joint venture with SFT, Chrysler Eurostar produces the Voyager. Chrysler imports through the Port of Rotterdam the largest volume of containers of any European company to meet its principal input requirements; it supplies finished products to European, Japanese, South African, Australian, and New Zealand markets.
- **Magna** <http://www.magnaint.com>: The Magna group is enhancing its already far-reaching commitment in Styria and thus is becoming a key player in the cluster. Magna designs, engineers and manufactures a complete range of exterior and interior vehicle systems. At the two production sites in Styria Magna produces metal and plastic parts as well as exterior mirrors for automobiles.

2. Relationship between Firms

About 100 small and medium sized firms serve as closely-linked suppliers for the leading firms. There are numerous ACStyria firms that could supply additional inputs to "Eurostar" as well, since it now relies less on cluster suppliers than on its continuing North American supplier chain. Fostering cooperation among small firms through the ACStyria should enable them to act more as a system supplier to OEM's rather than as individual sub-suppliers. This could easily arise as a consequence of global competition and cost pressures on the industry.

The need for improved development, manufacturing, and reduced-cost logistics is clear. The main challenges now facing ACStyria are gaining improved productivity in the value-added chain, implementation of new supply strategies, and altering the supplier structure. That means OEMs would concentrate more on core functions (product design, assembly and distribution), thereby reducing OEM manufacturing depth. This would be accomplished by proven Japanese and U.S. methods of sourcing more and larger component systems from a reduced number of cluster suppliers; it also implies sharing the component design and production engineering costs with such suppliers as development

partners in the automotive value added chain. Individual parts manufacturers thereby assume more of the total manufacturing depth within the supplier system, although specialist suppliers of unique parts would continue to supply inputs to automotive cluster. A key immediate challenge for ACStyria is to alter its current structure of numerous small single parts suppliers to a few large system suppliers.

3. Support Services

The core OEMs and their suppliers are connected with several institutions and associations which together play an important role in the development and governance of the cluster. The Styrian Government, the Styrian Economic Development Agency (SFG) assisted by the private partner Agiplan (a consulting and planning company), and the Industrial Association Steiermark (IV) are the main initiators and organizers of the cluster. Styria contracts for technical support on regional policies with Joanneum Research/InTeReg (Institute of Technology and Regional Policy). Industry and university engineering research centers and think tanks are mainly connected with the firms operating in the cluster. The Institute for Economic Development Steiermark (WIFI) provides companies with technical assistance in several fields, while the "Büro für internationale Forschungs- und Technologiekooperationen" (BIT) assists with international cooperation in research and technology initiatives. Financial support of the cluster is decentralized among different institutions, and funds have assisted various phases of the cluster's development. National policies set requirements for qualification to much of the funds, and therefore, act indirectly in supporting the one or other industry structure. Styria supplies funds on a two year basis to the SFG which are not earmarked. Thus, the SFG acts not only as an initiator and organizer of the cluster but also as a financial support institution to the cluster. In addition, the different EU programs – especially the 4th and 5th framework programs – often provide financial support to the programs.

Graz, the capital of Styria, lies at the intersection of two highways, the "Südautobahn" from Vienna via Graz to Italy, and the "Phyrn-Autobahn" from Germany via Austria to Southern Europe. The location thus provides easy access to the highway network. In addition, is Graz connected to the railroad network allowing container trains to deliver directly to the production sites or end markets. The airport Graz-Thalerhof integrates the location into the international air traffic system.

Governance

Background. Although two indigenous companies, Steyr Daimler Puch Fahrzeugtechnik and AVL List, have a long tradition in the automobile industry, the emergence of the ACStyria did not occur prior the early 90's. At this time, the combined efforts of the Austrian national government, the province of Styria, and the city of Graz led to the establishment of Eurostar (a

part of the American Chrysler Corporation) in the region. Many suppliers to the Eurostar works later settled down around Graz, creating the critical mass for development of the automobile cluster. At about the same time, the President of the Styrian Industrial Association (IV), Tessmar Pfohl, was introduced to new concepts of competitive industry clusters while participating in Vienna's "Föhrenberg" circle (a discussion circle comprised of business leaders, politicians, and scientists).

Launch. Interested in these new ideas, Pfohl joined with the "Industriewissenschaftliches Institut" (IWI) to help launch the "Wirtschaftsleitbild Steiermark" (a study which analyses regional economic development prospects). Parallel to this Joanneum Research, a non-university research institute owned by Styria, was commissioned to work on the Styrian Technology Policy Concept. This concept identifies the setting up of clusters as a main development strategy. Based on early studies, the "Sondierungsprojekt Automobilcluster" was initiated by the Styrian Industrial Association, in cooperation with the Styrian Economic Development Agency, which was itself founded in 1991 as an independent regional development agency owned, controlled and financed by the province of Styria. The "Sondierungsprojekt Automobilcluster" - launched in April 1996 - investigated more rigorously than the IWI study the structure of the automobile industry. The private regional development consultant Agiplan was contracted to assist SFG in the realization of the AC Styria.

Guidance. The resulting ACStyria organization relies heavily upon its most important body, the Advisory Board, which is composed of high-ranking delegates from manufacturer, leading companies, and SME's, politicians, scientists, and representatives of other institutions. The broad basis forming the Advisory Board is regarded as a key requirement to give the cluster strategy its best chances for success. The Advisory Board is confronted with the tasks of suggesting strategies for the cluster, focusing of the work of members, and balancing the different interests. SFG then serves as an important strategic instrument, by providing information and enhancing communication, increasing firms qualification, and setting up and assisting firms. In addition, the SFG provides financial support for the different projects that enhance cooperation among firms and help improve their operations. The vision for the future is that benefits created for firms through cooperation will be such that the ACStyria evolves into a self-supporting network of companies and institutions by the end of 1998.

Strategy. Following the establishment of the ACStyria, various projects in the fields of information, cooperation and qualification have been launched to manage ongoing structural changes in the automobile industry and to maintain international competitiveness among member firms. These projects include: attracting firms, establishing cooperation among recycling firms, setting up logistic cooperation, providing entrance to the internet for SME's, giving information about product liabilities, educating workers in CAD programs, assisting firms during supplier certification processes, building a measurement center, collecting and governing information about the cluster companies.

Institutions

Styrian Economic Development Agency (SFG)

<http://sfg.co.at>

The **SFG** is the main institute that provides services to the firms in the cluster. Services include: providing basic know-how for all partners, supporting combined projects, integrating of different interest groups, and assisting by the search for co-operation partners. The SFG is provided with funds from the Land Steiermark on a two years schedule. Mr. Holzschlag from the Styrian Economic Development Agency should be regarded as the key contact person for visiting this cluster. Key Contact: Ing. Holzschlag

Industrial Association Styria (IV)

http://www.iv-st.telecom.at/iv-st/iv_e.htm

The **IV** acts on behalf of 90% of all Styrian industrial firms by: providing services to the industry, lobbying for members and serving as a think tank. As a neutral institution, **IV** was crucial during initiation phases of ACStyria. Dr. Krautzer can offer very useful and interesting insights into the initial development phase of ACStyria. Key Contact: Dr Krautzer

Joanneum Research/InTeReg

<http://www.joanneum.ac.at>

The research institute **Joanneum Research** is owned by the province of Styria and employs 300 persons. As an innovative partner for commercial enterprises and political decision-makers, it provides services and consulting in various fields. Its **Institute of Technology and Regional Policy** (InTeReg) worked as a policy consultant to help formulate the Styrian Technology Policy Concept.

Institute for Economic Development Steiermark(WIFI)

<http://www.stmk.wifi.at/>

The **WIFI** provides soft aid to the companies in organizing fairs, providing information, etc..

Bureau for International Research and Technology Cooperation (BIT)

<http://www.bmwf.gv.at/1bm/texts/94-2/bit.htm>

The **BIT** is the central consulting and coordinating office for Austrian scientists and researchers from universities, independent research facilities, and the private sector who are interested in participating in international research and technology programs and initiatives.

APS

http://www.cis.tu-graz.ac.at/aps/vors_eng.htm

The **APS** is the regional office of the BIT, offering information and general consulting in the field of international research and technology cooperation. Its small size limits its role to that of a complement, not regional substitute, to BIT.

Technical University of Graz (TU Graz)

<http://www.tu-graz.ac.at>

The **Technical University of Graz** has intensive contacts to firms in the automobile industry. Various research projects are ordered and financed by automobile firms on the own hand. On the other hand assist these firms numerous students by writing their final thesis.

Key Contact: Rektor Killmann

College (Fachhochschule) for Automotive Engineering

<http://technikum.joanneum.ac.at>

The **College for Automotive Engineering (FH)** is a vocationally-oriented, post-high school that was originally established in 1995 to deliver highly skilled technical personnel to automobile manufacturers. The National Government decided to locate **FH** in Graz after strong pressures had been imposed by the Land Government and the leading automobile firms. The **FH** and affiliated automobile firms work closely together to make 4 years of study and practical experience as useful as possible to students and firms. In addition, serves the **FH** as a neutral ground for firms to cooperate in the existing research institute.

Key Contact: DI Dr Gaberscik

Technology Transfer Center Leoben

http://www.tcs.co.at/vtoe/styria/ttz/tz_vorst.htm

The **Technology Transfer Center (TTZ) Leoben** transfers technology with the goal of increasing the quality of production. In particular, aims the TTZ Leoben to enhance the technology flow from the University of Leoben and the Austrian Research Center of Seibersdorf to the cluster firms. The TTZ Leoben is controlled by a board consisting out of representatives from federal ministries, the Land Styria, the city Leoben and partner organizations. The TTZ finances itself mainly through projects.

Styrian Technology Park

<http://sfg.co.at/impuls/english/>

The **Styrian Technology Park** supports young firms through services and consulting in various fields (e.g., marketing, design and product development). This network of technology parks provides in different places a common infrastructure for mainly start-up firms. Hereby, the different technology parks distinguish in their emphasis on certain fields like electronics (Technology Park Graz) or laser technology and new materials (Technology and Training

Center Niklasdorf). Thus, different kinds of services and consulting will be offered at every single technology park.

Funds

Financial support for economic development and innovation is concentrated at the National, although sub-national level grants do play a minor role in various support schemes. Thus, in the following the discussion will mainly be focused on the national financial support programs.

The diverse Austrian and EU grants offered through Styria aim at enhancing private R&D, restructuring, and supporting business start-ups. The allocation of the grants is managed through different funds and institutions. The access to the grants offered by the EU is facilitated through institutions mentioned above. These grants are often combined with national or regional funding. The 4th and 5th framework of numerous EU programs (<http://europa.eu.int/comm/dg12/fp4.html> , <http://europa.eu.int/comm/dg12/fp5.html>) are of major importance to the innovative automobile industry.

Innovation and Technology Fund (ITF)

<http://www2.telecom.at/fff/itf.htm>

The innovation and technology fund (ITF), a strategic instrument for Austrian federal technology policy, was installed with money received by the privatization of energy production enterprises in 1988. A ministerial committee decides on the use of promotion funds for research, development and quick application of new technologies in the Austrian economy. The technological renewal of the Austrian economy shall thus be promoted, priority for applied research intensified, and the competitiveness of Austrian enterprises raised. Beyond the promotion of projects in the fields of research and technological development, ITF also helps diffuse technologies through financial assistance and counseling to stimulate high-tech enterprise formation.

Austrian Research Fund (FFF or RPF)

<http://www2.telecom.at/fff/home.htm>

The research promotion fund for commercial enterprises (RPF) finances research projects of natural and legal persons in the field of application-oriented and technology-oriented research through contributions or loans. For research projects that result in immediate economic benefits to the applicant, a fair cost contribution will be assessed to the applicant. It is the essential task of the RPF to raise business-related research in Austria to the EU-level. Companies should be motivated to participate in border-crossing cooperation in research and development, in projects that could otherwise not be carried out or only with great difficulty. Since the beginning of 1995, this fund has been supervised by the Ministry of Economic Affairs.

K-Plus

Program in preparation. This program aims at improving the links between public sector research and the industrial sector. The Austrian Ministry of Science and Transport (BMWF) will promote academic-industrial collaboration through setting up competence centers. As defined by the BMWF, competence centers are collaborative research institutions aimed at

high-quality, pre-competitive and industrial basic R&D activities that fulfill the needs of the industrial sector and preserve high academic standards. It is planned that a maximum of 60% of a competence center's budget will be provided through public funds.

ERP-Fund

<http://www.erp-fonds.gv.at/erp/richtlinien/index.htm>

http://www.erp-fonds.gv.at/erp/richtlinien/erp_wach.htm

The ERP technology and innovation program was set into place to reduce risks associated with innovative projects and to foster cooperation between firms and research institutes. Support works by granting loans to firms and projects with generally favorable conditions.

BÜRGES

<http://www.buerges.co.at/buerges/survey.html>

The BÜRGES defines its goal as supporting the foundation of new businesses. The costs involved in setting up a new business are partly subsidized by the fund and for the equity capital a high interest will be paid. In addition, the BÜRGES development bank provides surety for credits earmarked for investment.

Innovation Agency

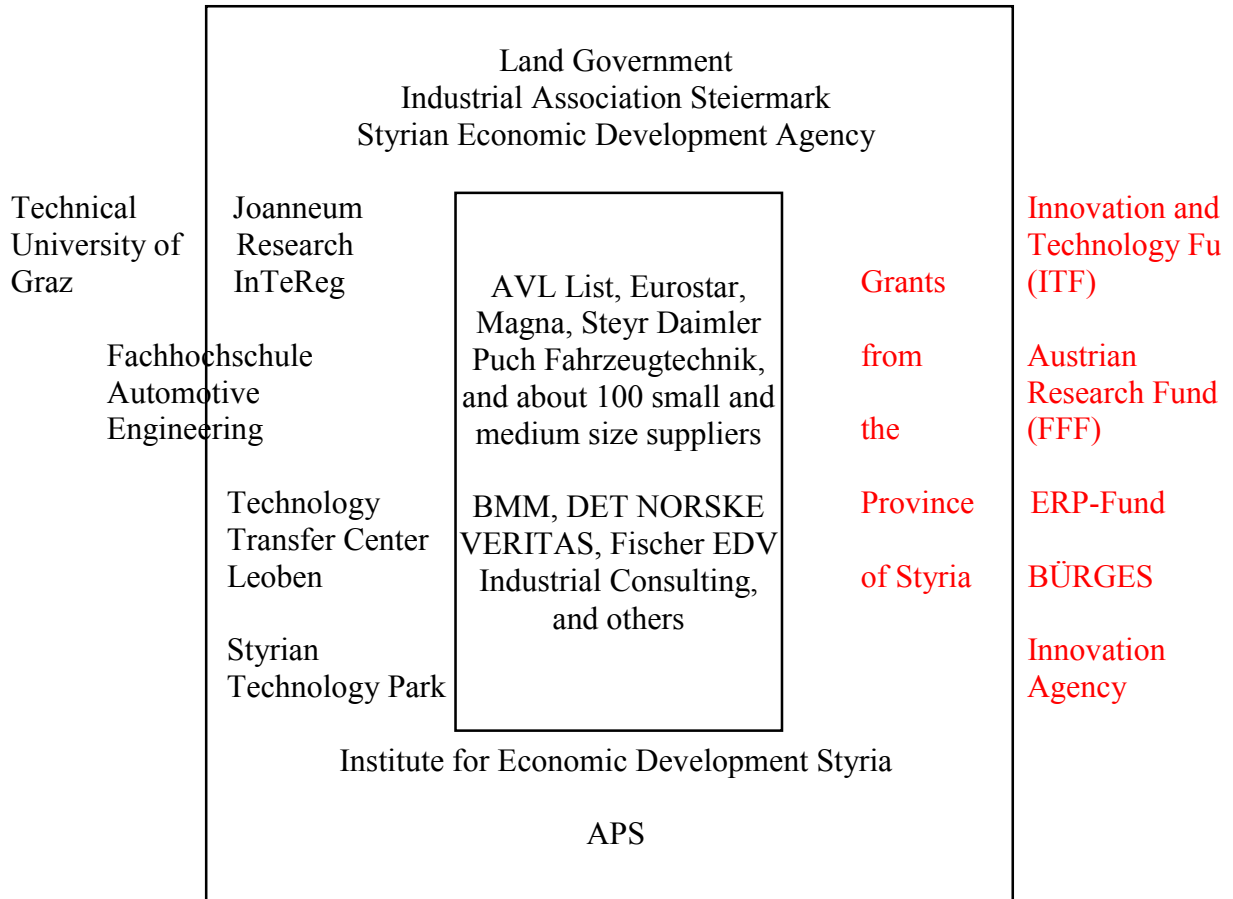
<http://www.tcs.co.at/innov/about.htm>

The Innovation Agency was founded in 1984 to support and encourage new ideas. The agency provides assistance to new businesses by offering consulting services and supplying seed capital. Technical feasibility and market studies are supported. The Innovation Agency has installed an internally managed patent loan scheme to help Austrian inventors to finance international patents.

ACStyria


National Government

Federal Ministries (<http://www.bmwf.gv.at> , <http://www.bmwa.gv.at>)
 4th and 5th framework of the EU (<http://europa.eu.int/comm/dg12/fp4.html> ,
<http://europa.eu.int/comm/dg12/fp5.html>)



Bureau for International Research and Technology Cooperation (BIT)

Initiators and Organizers

Research Centers  Financial Support

Other Support Institutions

Core: Cluster/Inner circle: Region/Outer Circle: National/International

Postscript Comments

The establishment of the cluster is due to open-minded and ambitious people (Regional Economic Advisor DI Paierl, Regional Financial Advisor Ing. Ressel, Ing. Holzschlag, and Dr. Krautzer to name only few among the various) trying to enhance the region's competitiveness in the motor vehicle industry

The implementation of the project follows three steps showing different degrees of involvement from developer side. In the first step – the developing phase – the ACStyria is heavily engaged in the search for ideas for potential co-operations and in the succeeding evaluation of these ideas. Following, the ACStyria defines the projects more precisely and calculates the costs and benefits. In the second step – the actual implementation of the project – the ACStyria plays a minor role and it is up to the firms to co-operate under the assistance of the ACStyria. Assistance means that the ACStyria provides a co-operation contract, applies for financial support, helps with the planing and implementation of the project. The last step sees the documentation, presentation and eventual commercialization of the results. During this phase the ACStyria takes up again a major part. Thus, the SFG sees its main tasks in the development of projects and in the marketing of the results of the project after it had been taken out by the partners supported by the SFG and not so much in the actual implementation.

After the implementation the controlling takes place. That means the ACStyria defines whether the goals have been achieved and if the process itself is appropriate. The controlling closes the circle which started off with the diagnosis, went over the definition of the goals and the strategy formation to the implementation.

The existing automobile cluster has profited from policy decisions on the federal and Land level. On the federal level the policy since the 70's has been to promote Austrian subcontracting to the international automobile industry and on the regional level the Land tried to attract international leading firms (Chrysler, Magna) which in turn would serve as the basis for the cluster. Nonetheless, the initiative undertaken by the Styrian Industrial Association and the Styrian Economic Development Agency trying to establish co-operation among companies and thus increasing the competitiveness of the local automobile industry lies at the heart of the cluster strategy and in consequence can be seen as the real engine of the cluster.

The Salzkammergut: Tradition in Ceramics

Major Cluster Concepts: Traditional craft industry, weak value chain, city-supported cluster, tourism-ceramic cluster interaction, embedded governance, minimal support institutions, final product marketing-intensive

Because of its long-standing tradition, the ceramics industry in the Salzkammergut is an interesting craft-based cluster worthy of study. Although this industry comprises only a few firms, it is of central importance to the region. The importance of the ceramics industry for Gmunden, the Austrian capitol of ornamental ceramics, is even more significant due to its mutually beneficial links with the region's tourism industry. This region, especially its center Gmunden, illustrates well how different industries based on regional traditions can successfully interact and support each other.

Cluster Description and Region

<http://www.austria.org/salz.htm>

<http://www.austria.org/lupper.htm>

<http://www.austria.org/lstyria.htm>

The Salzkammergut is located in the heart of Austria and spreads over the three "Bundesländer" Upper Austria, Salzburg, and Styria. The city Gmunden, which is situated at the Traunsee in the heart of the Salzkammergut, has been known since the 16th as the old Austrian center of ornamental ceramics. The historical rise of the ceramics industry in Gmunden was favored through the abundance of two natural resources originally essential for the production of ceramics: clay and salt (or 'salz' in Salzkammergut). Local resources no longer play a role in production, since all clay now used for production is imported from Germany. About twelve firms manufacture ceramic household and ornamental articles and sanitary fixtures.

Product Market scope

The main markets nominally associated with this cluster include sanitary fixtures and dishes and china. In dishware market, medium quality/medium price segments are strongest. In Austria, products are offered by specialized stores, while distribution partners abroad provide entry to foreign markets. The firms try to overcome the disadvantage of average quality of earthenware dishes, in comparison with china, by producing dishes with individual traditional designs. The main producer of higher quality china in this region also increases its chances of entering niche markets with specially designed product series. Both the producer of china and dishware try to raise exports by increasing efforts to sell through established foreign distribution channels and by entering new markets. Ornamental ceramics are regionally marketed, as well as distributed in selective export markets.

The producer of ceramic sanitary fixtures is connected with the region through historical reasons rather than through industrial linkages with the other ceramic firms operating in the region. The producer of sanitary fixtures does not stress tradition as a marketing strategy. The product is offered on the international markets in the high quality/high price market segment. Already half of the production of sanitary fixtures is exported to countries like Switzerland, Germany, the Netherlands, West Africa, Iran and others.

History and Performance

The ceramics industry in the Salzkammergut has risen and declined at various points over the last 3 centuries. In the last twenty years, about 25 firms producing the traditional earthenware were exposed to strong competitive pressures from cheap imports of china (which is also of higher quality than earthenware). What remained of this traditional industry are about 12 firms that employed about 800 workers in 1991. All of them are quite traditional, some originating at the beginning of the 20th century or earlier. The restructuring of the industry in recent years has shown some success in selecting the strongest, but the critical phase has not yet passed.

To be clear, this cluster consists mainly of ceramic household and ornamental articles, rather than a mixed cluster that includes sanitary fixtures as a key sector. This is due to the fact that the producer of sanitary fixtures, which located for historical reasons in Gmunden, lacks strong linkages to the other ceramic firms that rely upon completely different production technologies and end markets. Moreover it alone, but not they, answers to its foreign ownership. Thus, the role of the ceramic sanitary fixtures producer will not be emphasized in this account, although this firm's nearly 200 workers are of clear importance to the region's economy.

Organization

The firms in Gmunden play the leading role in this cluster, although more precisely, that role is held by the largest ornamental ceramic producer. This leadership follows directly from historical reasons and recent developments. The 16th century ceramic industry in Gmunden was based heavily upon local supplies of salt and clay. By the late 18th century, Gmunden's ceramic producers relied upon ships to transport salt and to sell their products on many markets. Shipments traveled on the Danube, which is connected with the river Traun, to import salt and sell the ceramic products, stretching as far as Black Sea regions. Gmunden has since become the heart of the Austrian ceramic industry and recent efforts such as the annual ceramics market help maintain this position.

The smaller firms located near Gmunden benefit indirectly from their general access to its Austrian center of ceramics and to the Salzkammergut's steady attractions as a tourist destination. This is essentially a final market industry cluster, one that distributes significant shares of its output by direct sales within the region. It is highly dependent upon production skills and design-protected market niches, with virtually no value-added chain of consequence.

Firms

Gmunder Keramik (Hohenberg)

The Gmunder Keramik was founded in 1903 and has recently become the largest producer of earthenware in the Salzkammergut. In 1996 the Gmunder Keramik attained a turnover of 215 million Austrian Schillings while employing 330 (mainly skilled) workers. Nearly all the workers acquired their skills while working in the firm. The traditional designs for earthenware products come from the firm's own design studios where painters and modelers create about 120 to 130 designs a year. The special dishes called "Grüengeflamntes" are well known and enjoy strong local and export demand. The Gmunder Keramik produces about 15.000 pieces of ceramics per day (all hand-painted), applying a variety of different production technologies. The challenge for the Gmunder Keramik is to compete with the cheaper, higher quality china, although the use of new mixtures of clay and new production technologies has apparently improved the quality of earthenware that its difference with competitively priced china is insignificant. The combined efforts of clay suppliers and the GK have resulted in new mixtures of clay that are tailor-made for GK's production technology. However, technologies used to paint the single pieces are the traditional techniques used by all cluster firms. The technique used for painting the traditional dish "Grüengeflamntes" has been in use since the 17th century in this area and is unique to the cluster. Mr. Staribacher, GK's general manager, pursues the strategy of supplying traditionally designed dishes that cannot be produced elsewhere because of the skills and the traditional background of the local workers. Key Contact: DI Staribacher, phone: 07612/7860

Töpferei Födinger and Fa. Georg Pesendorfer

Both the Töpferei Födinger and the Fa. Georg Pesendorfer are small sized firms producing mainly ceramic ornamental articles that are sold locally to tourist as souvenirs. The product scope covers hand made and painted pottery, tiles, plates and other ceramic ornamental articles. The owners of both firms are brothers, so cooperation is something that easily takes place on a day to day basis. This means that they sell each others products and if necessary help each other in the production. In addition, both sell earthenware produced by the Gmundner Keramik. Other beneficial connections link firms to public institutions. The pottery firms Födinger and Georg Pesendorfer are represented on the committee that selects exhibitors at the ceramic market. Although Gmundner Keramik is the primary contact with the tourism office, all firms benefit from this cooperation as they sell largely to tourists. Key Contact: Ms. Födinger, phone: 07612/64537

ÖSPAG

The ÖSPAG produces ceramic sanitary fixtures that are distributed under the brand name Laufen. An export quota of 50% highlights the major importance of the international markets for the ÖSPAG. The ÖSPAG is strongly linked with its mother firm Laufen, but not so much with the regional producers of ceramics since wholly different production technologies sever any direct links with other firms, and even indirect links through a common labor market are very unlikely.

Key Contact: Mr. Taferner, phone: 07612/73373

Gollhammer

The firm Gollhammer is located in Vöcklabruck, which is about 15 km from Gmunden. Gollhammer employs about 50 workers and faces the new challenges with two different strategies. Gollhammer produces earthenware in the traditional Austrian country house style, but it has expanded its product line by entering the niche market for modern designed china. In contrast to the Gmunder Keramik, the modern designs from Gollhammer are not made in-house, since existing work of current modern artists from all over Europe is used as the basis for new designs. Although, it has been difficult to establish, the new china series Diner 4 2 has proven successful with a 70% direct export share of production (contrast the traditional earthenware direct export rate of only 10%). Export markets are Germany, Japan, USA, Italy, and Switzerland, among others.

Key Contact: Mr. Gollhammer, phone: 07262/75301-0

Keramik Hallstatt

The small atelier called Keramik Hallstatt, which is situated some 50 km south of Gmunden, is well known for its ornamental articles, particularly its individually designed pieces. The connection to Gmunden results mainly from the annual ceramics market, which is regarded as a must for the owner of the Keramik Hallstatt. Keramik Hallstatt benefits from the presence of strongly interested spectators and enjoys many profitable connections as a consequence of market participation.

Key Contact: Mr. Gschwandtner, phone: 06134/8219

Support Services

As the ceramics industry is only a tiny industry from the national perspective, most of the support for this industry stems from regional initiatives. The city of Gmunden values the importance of the ceramics industry by providing a city exhibition about the history of ceramics at the museum of Gmunden (Kammerhofmuseum). In addition, the local tourist office works closely with the Gmunder Keramik. Because of its size, the tourist office works directly only with GK, although other firms also profit from results of their cooperation. For example, a tour that traces the historical footsteps of the region ends in Gmunden with the visit to the Gmunder Keramik factory. Support goes both ways: tourists who visit the Gmunder Keramik (about 100,000 a year) to shop at its bargain manufacturing sales spend time and money at other Gmunden businesses.

The connection between tourism and the ceramics industry is most clearly illustrated by the widely regarded annual Austrian ceramic market, held each year at the end of August. This market brings thousands of visitors from Europe and elsewhere during the height of the tourist season to the ceramic capitol of Austria. The beneficial connection between tourism and the traditional ceramic industry is supported through the plentiful choice of excellent hotel rooms, restaurants, coffee shops and attractive leisure time activities, e.g. sightseeing and boat rides

on the Traunsee. The location of the Salzkammergut tourist region in the heart of Austria makes the annual market and other year-round activities easily accessible by highways from Germany and Italy. Although most of the support for the ceramics industry stems from the region itself, Upper Austria also provides important support through the publication and circulation of a book concerned with the ceramics industry in Gmunden. This publication promotes the ceramics industry to potential customers at the same time it raises local awareness of the significance of traditional ceramics to the regional economy.

Pride in the traditional ceramics industry is passed along to young pupils through excursions to the ceramics manufacturer and through special projects. For example, pupils of the newly built primary school in Gmunden worked with a local artist to design a ceramic plate that is now displayed permanently on one of the walls in the school. Other events include many local citizens: a ceramics course offered by Gmundner Keramik has been a huge success for people of all ages.

Governance

The governance of the ceramic cluster is based heavily on strong links between the Gmundner Keramik and the Gmunden City Council. The City Council promotes and finances various projects that have been initiated from the GK (e.g., a common marketing strategy). Although, GK's principal contact point is the local tourist office, financing and decision-making is the responsibility of the city council. In addition, the cultural office of Gmunden, which is part of the city council; takes responsibility for organizing the annual ceramics market. The ceramics market is of overall importance to all local producers of ornamental ceramics and dishes because interested visitors are attracted from all over Europe. The high quality of market vendors is guaranteed by a rigorous selection process conducted by an informed committee of local experts. About 120 firms and artists are accepted out of nearly 300 who apply. The City Council also brings together all the important interest groups to initiate guidelines for the future development of Gmunden. As the ceramics and the tourism industries are of major importance to the region, the guidelines place strong emphasis on strengthening important connections between them.

The tourist office works mainly to promote Gmunden as the capitol of ceramics through advertising, guides through ceramic firms, special ceramics gifts to visitors, ceramic door plats, and more. It also works to increase the national and international awareness of the high quality ceramic industry in Gmunden by attracting long-distance tourists and potential customers. The tourist office works to support firms in the long-run by organizing product fairs and congresses related to the core ceramics industry.

Both tourist and ceramics industries enrich the other. Attractive tourist options in a beautiful environment clearly stimulate interesting visits to ceramics manufacturers, which then further contribute to attractiveness of the region for tourists. Regional tourists then spend money on ceramic souvenirs or on dishes in the factory outlet of the Gmundner Keramik and from other firms. The City Council, the tourist office, and cluster firms all play major roles in the governance and interrelated success of the cluster. This industry cluster and the closely related tourism industry illustrate clearly how to take successful advantage of cultural and historical traditions in the global market.

Ceramics

City Council Gmunden
Ms. Zemann, phone: 07612/794-282

Tourist Office Gmunden
Ms. Operschal. phone: 07612/64305

Kammerhofmuseum
Ms. Spitzbart, phone: 07612/794-244

Elementary School
Gmunden
Ms. Zemann,
phone: 07612/794-282

Gmundner Keramik, Hohenberg
Töpferei Födinger
Fa. Georg Pesendorfer
ÖSPAG
Gollhammer
Keramik Hallstatt
and some other small manufacturer
of ceramic articles

Ceramics Market/SelectionCommittee
Ms. Zemann, phone: 07612/794-282

Wooden Furniture Cluster: Naturally Better

Key cluster concepts: natural resource-based cluster, mixed modern/traditional/‘natural’ product lines, strong national cluster governance, significant Chamber of Commerce involvement, deep national support institutions, multiple-jurisdiction cluster

Description

The region includes six smaller political districts spread over intersecting portions of two adjoining provinces, Salzburg and Upper Austria. The location near wood processing industry suppliers and Germany’s major markets offers significant advantages to the region. The wooden furniture industry in this area comprised in 1991 some 290 firms with about 5,800 employees. Some firms employ 500 or more, but small firms with only a few employees are the more typical case.

Since nearly half of Austria is covered with forest, there are many wood and paper cluster sites from which to choose when studying one of Austria’s most important industries. The value-chain of Austria’s full wood and paper industry yielded a net production value of 114 billion Austrian Schillings (between 3.5 and 4% of the total Austrian production) and a export surplus of nearly 20 billion Austrian Schillings in 1991. The export surplus stems solely from the sawmill and the paper industry. Although the furniture industry is a net importer relative to national demand, the region between the political districts Hallein and Ried im Innkreis (from south of Salzburg up north to the German border near Passau) hosts some very successful and competitive producers of wooden furniture. The strength of these manufacturers rests on their artistic reflection of nature. They regard wood as much more than a simple input; it is seen as a marvelous, irreplaceable element to be artistically revealed in the end product. The furniture industry segment of the wood and paper cluster presents an environmentally attractive sub-group for study, due to its low-impact dependency for natural resources. The region offers valuable opportunities to see how respect for sustainable inputs easily coexists with economic success, and how industrial clusters are governed by well-organized national and regional Chambers of Commerce.

Product Market Scope

The district produces furniture in all fields: chairs and seats, office shop furniture, wooden kitchen furniture, and other furniture. The output of large-scale producers addresses the high quality and high price market segment. Their production is preferably distributed under brand names through selected chain stores. Sales abroad often exceed the national sales. In contrast, small firms produce individually-designed, high quality products for limited local markets. Their problem is that prices are often not competitive. Small firms occasionally overcome this disadvantage through high flexibility and specially designed pieces, although such firms are among a small minority.

Performance

Performance of the region's furniture industry can be judged only after distinguishing between two groups: small manufacturers that face severe competition from cheap products offered by big chain stores, and large scale producers that are able to increase both export and national sales quite dramatically. In the first three quarters of 1997, Austrian exports in furniture increased by 24% in comparison with an 13% increase in imports. Although Austria remains a net importer of furniture, Team 7 managed to export 75% of its production in 1996 to countries like Germany, Italy, Switzerland, and Japan. It and other large firms in the region are equipped with the newest production technologies bought on the international market. So-called 'C-technologies' are now responsible for production in the large firms. In addition, these firms possess internal laboratories for material testing and product development. The large firms are supplied with inputs from all over Austria. However, the most important production factor - highly skilled labor - is recruited from the regional labor market.

Certain large firms such as Voglauer enjoyed continued success with high-quality farmhouse style furniture, while others were forced through the 1979 recession to change their strategy. Team 7, for example, moved to the production of solid wood furniture with natural surface Alder furniture. Team 7 was a pioneer in the modern field of "natural living". Other leading firms in the region have explored similar opportunities to produce furniture "in harmony with nature". Tradition and nature are the key words that now describe product lines of local firms. By entering their market niche early, regional firms have re-shaped themselves successfully for international competition. Their success stimulated the local wood industry such many small firms have now become recognized suppliers of high quality products.

In sharp contrast, other small firms remain unable to buy more advanced or even use their existing machinery efficiently. Material tests have to be conducted off-site in institutes like the "Austrian Research Institute for Wood"(Österreichisches Holzforschungsinstitut). Inputs supplied mainly by local firms mean that the negotiation space on price or specifications is necessarily limited. Thus, the performance is quite uneven between these two groups of manufacturers. This is partly expressed through a divergence in their relative ability to react to recent developments in demand and available technologies. However, some Austrian success stories show that space remains for small firms willing to cooperate as a means of overcoming inherent size disadvantages.

Organization

1. Firms

In 1991, approximately 300 local furniture manufacturers employed 5,800 workers. However, a few outstanding firms figure more prominently in this picture of the region. They are responsible for the good international reputation this region enjoys as a furniture producer. For example, Team 7 is one of the ten best known furniture producers in Germany (in Austria it is the best known). These firms all engage in the production of high quality end-products with special emphasis on tradition and harmony. Several regional firms supply

key technology (TECHNODAT – CAD and CAM systems) and woodworking machine-tools to the cluster.

Key Firms:

- **Team 7:** Team 7 specializes in the production of natural furniture, meaning only special wood from Austria and other natural materials are used in production. When production cannot be done in-house, production partners are sought. Team 7 and three other firms cooperated recently to provide jointly needed worker training and education. In 1997, the 410 employees of Team 7 produced turnover valued at 750 million Austrian Schillings. Germany, with 60% of total sales, has been the most important national market, followed by Austria (25%), Switzerland (7%), and Japan (3%). Although formal cooperation with the Holztechnikum Kuchl (a combined school and research center for wood) is rare, HTL Mödling (school and testing lab for wood industry) is extensively involved in various Team 7 activities.
- **Voglauer Möbel:** Voglauer Möbel employs 600 employees to produce traditional hand painted furniture; it also specializes in the design and furnishing of complete hotel rooms. In the latter case, the firm cooperates with other design/production partners (regional and national) to supply a complete solution to the customer. In the case of hand painted furniture, the firm cooperates with regional seat and chair producer HASAG to offer a complete product line. The product line emphasizes traditionally designed furniture. The design is done in-house by highly qualified craft-workers. Production machinery is bought in Germany, but all other inputs are supplied by Austrian firms.
- **Wiesner-Hager Möbel:** Wiesner-Hager is specialized in the production of seats, chairs and office furniture. The designs of the furniture are all done in-house. The firm cooperates with Team 7 to offer a combined education program. 460 employees produced furniture valued at 520 million Austrian Schillings in 1996. The export share was 36%, with Germany, France, and Switzerland being the most important foreign markets.
- **HASAG Möbel:** The production of HASAG covers mainly upholstered furniture. As discussed above, HASAG cooperates with Voglauer Möbel to offer completely equipped hotel rooms. In 1996, turnover valued at 300 million Austrian Schillings was produced by 300 employees, 20% of which was exported to Germany, Switzerland, and Italy.

2. Relationship between Firms

Cooperation is obviously taking place between both large and small firms in the region, although many more opportunities for cooperation and joint production exist. Some larger firms are very open to strengthening existing connections and building new links. The small firms often work together with each other on a day to day basis, but not nothing like the managed cooperation evident in some industrial clusters. However, new links between small and

large firms are becoming evident. Large firms are increasingly willing to outsource parts of the production that demand the highly flexible production system of smaller firms.

3. Support Services

Reflecting its importance to Austria, several national institutions provide support services to the industry and its cluster components. The Austrian Research Institute for Wood in Vienna is a major contact point for the wood industry to learn about new materials and their characteristics. The HTL Mödling (near Vienna), the best Austrian school concerned with wood, also serves as a research institute. Both institutes are reliable sources of information and quality tests. The University of Agricultural Sciences (BOKU) in Vienna offers research capacities related directly or indirectly with wood. The supra-regional initiatives "PRO HOLZ" and the ARGE Interior Decoration act as continuing networks for information, product development and research. The EUREKA Wood Initiative promotes pan-European market-oriented research and development.

Within the region, the Holztechnikum Kuchl plays the most prominent role by combining several different types of training, all of them concerned with wood. It supplies highly skilled professionals to the wood industry and acts as a cooperation partner for local firms requiring assistance in fields of research and testing. The technology park Holz-Techno-Z, now under construction, sees its goal as enhancing the diffusion of innovative technologies and enforcing cooperation. The national and regional Chambers of Commerce are key organizers of this cluster, and supply it with much useful information. Beyond, the Chambers of Commerce engage in lobbying and support inter-firm cooperation. The Institute for Economic Development (WIFI) supports businesses through the provision of technical assistance. Various banks and business services not specific to the cluster form a healthy service industry environment necessary for economic development. Ready access to good highway systems is of significant importance to the region, particularly its proximity to Germany - the major foreign market.

Governance

The furniture industry in the region is governed locally and nationally mainly the Chambers of Commerce. As the legal representative of the local firms, a local Chamber of Commerce serves as the regional economy's advocate. The Chambers' tasks consist mainly of pursuing the interests of their members and providing specialized services. For example, the Salzburg Chamber of Commerce pushed for the establishment of Holz-Techno-Z and joined the Province Salzburg in supplying financial support to the technology park. Strong pressure from the Salzburg Chamber of Commerce led to a new building regulation that allows public buildings (like kindergartens) to be constructed of wood. The services directly offered include tailor-made courses, business and

technology consulting, information on new laws, support for potential start-up businesses, expert opinion on credits and so on. Additionally, the Chamber of Commerce operates, with the assistance of a private business consultant, a special designed program for joiners called EUROFIT, which enhances the competitiveness of the local firms and promotes cooperation among them. The goal of all Chambers' activities is to shape the province's economy for regional as well as global competition.

Different branches of the Austrian Federal Economic Chambers of Commerce play key roles in organizing and supporting various sectors of the wood industry. The Austrian Furniture Industry, which is a small branch of the Austrian Federal Economic Chamber, represents the interests of its members. It also supplies a range of useful services, working closely with regional chambers. Through seminars and image campaigns, joint chamber efforts are designed to boost the long term development of the furniture industry. A competition aimed at selecting Austria's best new furniture for inclusion in a permanent collection has as its objective to stimulate the design and production of high quality furniture. Austrian Furniture Industry opportunities for possible cooperation between cluster members is boosted through the provision of a shared data base. The system of chambers has an important impact on the furniture industry, and thus, can be regarded as a meaningful and beneficial governance institution.

Institutions

Many organizations of relevance to the furniture industry are drawn from among a rich mixture of regional and national institutions. However, in sharp contrast to other clusters that are highly concentrated in one or few region(s), national institutions play a much more significant role in supporting all the elements of this widely dispersed cluster. Key examples in the field of research and development are the Austrian Research Institute for Wood, the University for Agricultural Sciences, and the HTL Mödling; all have proved to be major sources of support for the wood and thus also the furniture industry. Through marketing and public relation the initiative "PRO HOLZ" and the ARGE Interior Decoration have increased the public awareness of the quality of Austrian furniture, and thus, national demand for these new products.

Chamber Of Commerce (WK)/The Austrian Furniture Industry

http://www.wk.or.at/aw/aw_intl/index.htm

<http://www.moebel.at/AUSWAHL/E/INFO/projekt.htm>

The Austrian Federal Economic Chamber coordinates and represents the supranational and national interests of Austrian commerce and industry. The nine regional chambers and the federal chamber work closely together. The task of these institutions is to represent the members' interests and to provide services and consulting to its members (by law, all firms must members of the Chamber of Commerce). Thus, the system of chambers forms a key institution in the cluster.

Key Contact: Dr. Bosnjak, phone: 01/50105-3228; Mag. Felser, phone: 0662/8888-287

Institute for Economic Development (WIFI)

The Institute for Economic Development (WIFI) supports businesses through the provision of technical assistance and offers a variety of focused education and training programs.

Austrian Research Institute for Wood

This institute acts as a valuable partner for the wood industry. Basic research is done at the institute, new materials are tested and information is provided.

University of Agricultural Sciences (BOKU) Vienna

<http://www.boku.ac.at/indexe.html>

<http://www.boku.ac.at/zun/hofe-e.htm>

BOKU students are able to study everything related with wood in a university setting. Beyond the instructional programs, BOKU offers a variety of activities in advanced Wood Sciences and Technology covering fields from wood biology, wood physics, forest products development and manufacturing as well as forest products marketing and trade. BOKU sees its mission as conducting and fostering basic to advanced wood science.

Key Contact: Rektor März, phone 01/47654-1001

Holztechnikum Kuchl (Technical Institute for Wood)

At the Holztechnikum Kuchl 700 students are able to study many different subjects concerning wood. Local furniture firms benefit from cooperative research and testing opportunities available through the Holztechnikum. Great interest has also been shown by firms in the newly established School of Interior Decoration. Certain firms maintain close contacts with students from all parts of this school, either as future workers perhaps as future customers (many sons of huge furniture chain stores visit this school). Holztechnikum also serves as a technology consultant for the Holz-Techno-Z.

Key Contact: Dr. Lackner, phone: 06244/5372-129

HTL Mödling

<http://vaholz.minic.ac.at/page1.html>

The HTL Mödling serves two important purposes: the School for Wood trains highly qualified employees, and its testing lab performs material tests for small firms, thus forming an important link to industry. The academic personnel are heavily engaged in helping small firms by provision of information and acting as catalytic points for inter-firm cooperation.

Key Contact: Prof. Kranlich, phone: 02236/408-705 or 755

Holz-Techno-Z

The technology park Holz-Techno-Z is not directly located in the region, although it is strongly linked with the region through a cooperative contracts with the Holztechnikum Kuchl. The Holz-Techno-Z is being built at the moment and anticipates its completion at the end of 1998. The role of the technology park is to provide space and infrastructure to small firms and to foster the transfer of technology.

PRO HOLZ"

<http://www.proholz.at/gr/proholz/editorial.html>

The initiative "PRO HOLZ" engages in public relations and marketing for the natural product "wood". "PRO HOLZ" is a functioning network, an active supplier of information, and a product development promoter.

ARGE Interior Decoration

ARGE Interior Decoration is for the furniture industry what "PRO HOLZ" is for the basic wood industry .

EUREKA WOOD INITIATIVE

<http://www.eureka.be/frames/frame-welcome.html>

<http://www.joanneum.ac.at/events/eureka.htm>

Eleven European countries have joined to create this EUREKA umbrella project. The EUREKA WOOD INITIATIVE promotes innovative ideas to improve the competitiveness of the European wood industry. Strong emphasis is placed on market-oriented research and development activities. In addition, the WOOD INITIATIVE serves as a platform for international cooperation in research and development.

Funds

The adjoining provinces of Salzburg and Upper Austria offer different grants that improve the regional infrastructure, support small firms, promote business start-ups, enforce restructuring, increase the adaptation of new technologies, etc. These grants are small in comparison to the national grants but nonetheless play a welcome role for the local industry cluster. The regional financial support scheme usually supplements various national or international support schemes. The following major national funds are the focus of the following discussion.

Austrian Research Fund (FFF)

<http://www.bmwf.gv.at/7forsch/f&eoe/712finan.htm>

<http://www2.telecom.at/fff/holz.htm>

The research promotion fund (RPF) for commercial enterprises finances research projects of natural and legal persons in the field of application-oriented and technology-oriented research through contributions or loans. For research projects that result in immediate economic benefits for the applicant, a fair cost contribution is assessed to the applicant. It is the essential task of the RPF to raise business-related research in Austria to the EU-level. Companies

should be motivated to participate in cross-border cooperation in research and development, particularly on projects that could otherwise not be carried out or only with great difficulty. Since early 1995, this fund has been supervised by the Ministry of Economic Affairs. Because of the paucity of wood related research, the FFF started a special program "HOLZFORSCHNUG" to intensify research in this field.

Key Contact: DI Schörghofer, phone: 01/5124584-0

K-Plus

Program in preparation. This program aims at improving the links between public sector research and the industrial sector. The Austrian Ministry of Science and Transport (BMWF) is trying to promote academic-industrial collaboration through setting up competence centers. As defined by the BMWF competence centers are collaborative research institutions aimed at high-quality, pre-competitive and industrial basic R&D activities that fulfill the needs of the industrial sector and preserve high academic standards. As planned up to 60% of the competence center's budget will be provided through public funds.

Key Contact: Dr. Stampfer, phone: 01/53464-3412

BÜRGES

<http://www.tcs.co.at/buerges/survey.htm>

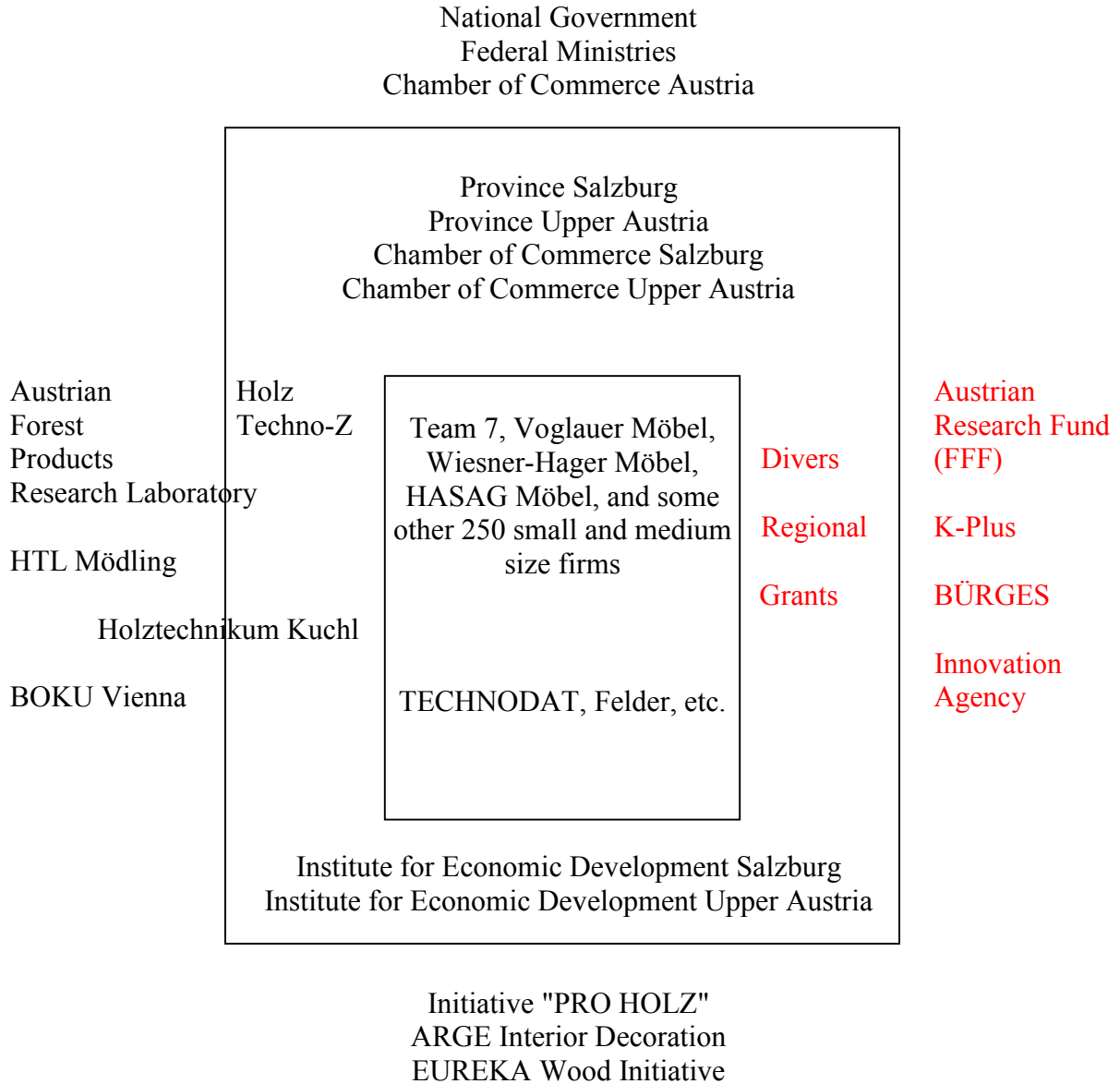
BÜRGES defines its goal as supporting the foundation of new businesses. The costs involved in setting up a new business are partly subsidized by the fund. The BÜRGES development bank provides surety for credits earmarked for investment.

Innovation Agency


<http://www.tcs.co.at/innov/about.htm>

The Innovation Agency was founded in 1984 to support and encourage new ideas. The agency provides assistance to new businesses by offering consulting services and supplying seed capital. Beyond this technical feasibility and market studies are supported. The Innovation Agency has installed an internal patent loan scheme to help Austrian inventors to finance international patents.

Furniture



Initiators and Organizers

Research Centers  Financial Support

Other Support Institutions

Core: Cluster

Inner circle: Region, Outer Circle: National/International

Textile Industry Cluster in Vorarlberg

Key cluster concepts: traditional regional industry cluster, multiple sub-clusters/value added chains, strong entrepreneur and Chamber of Commerce roles, restructuring/shifting production, international competition, regional government ambivalence

Description

Vorarlberg is one of nine "Bundesland," which is located in the very west of Austria and shares a common border with Germany, Switzerland, and the Principality of Liechtenstein. This small region comprised in 1994 more than 35% of the firms and employees of the Austrian textile industry. Even more remarkable is that all Austrian producers of embroideries are concentrated in Vorarlberg, fully half of which are clustered tightly in the small town of Lustenau. Some 650 firms of all sizes employed about 11,500 workers in 1993, the output of which is valued at 17 billions Austrian Schillings (27% of the region's total value of production). Textile products account for 23% of total regional exports, indicating the region's heavy export reliance on the textile cluster.

The textile industry in Vorarlberg is a complex construct. Its firms use quite different production technologies and address sufficiently different final market segments such that linked, multiple value added chains result. Accordingly, different fractions of the textile industry form distinct sub-clusters. Producers of embroidery form a particularly fascinating sub-group of the larger Vorarlberger textile cluster. The small to medium size firms use nearly identical production technologies and engage in strong competition with each other, which markedly increases overall product quality. In addition, as international competition has grown stronger, the need for cooperation among the producers of embroidery has become increasingly apparent. The broad textile cluster offers interesting lessons in how the successful restructuring of a 'traditional' industry continues to evolve. For those drawn to its structural richness, high regional density, and the role of tradition, the Vorarlberger textile cluster merits further inquiry.

Product Market Scope

The cluster can be distinguished according to three broad, final market product categories: clothes, embroideries, and textiles. The product market scope ranges from preparation and spinning of textile fibers, to textile weaving and finishing, to the manufacture of knitted and crocheted articles, and the manufacture of embroideries. What nearly all producers in these different product lines have in common is that their products compete in high quality/high price market segments. An export rate of about 80% of the total textile production highlights the importance of the international markets, the European Union being the most important (2/3 of the exports go to EU markets).

Performance

Although the textile industry in Vorarlberg dates from the 13th century, the actual origin of the modern textile industry began early in the 19th century with the first mechanical spinning mills. Traditional "textile families" like Getzner, Hämmerle, Rhomberg, and Ulmer were responsible for development of the modern textile industry into the 20th century. More recent experience in the textile industry includes some prominent bankruptcies and rationalizations, leading to severe declines in the textile sector employment. From 1961 to 1991, regional employment in the textile sector decreased from 22,771 to 11,707 workers (from 22.7% to 10.8% of total regional employment). This followed a general European trend of restructuring away from the textile industry, due principally to strong international competition coming of low wage country producers. By 1993, the EU imported nearly 30% of all yarns and 50% of all clothing from low cost countries.

Until Austria became a member of the EU in 1995, problems for its textile industry were aggravated by EU regulations regarding the passive finishing industry. Firms of EU member states were permitted to have products partly manufactured in Eastern Europe without paying customs when sold in the EU. In contrast, firms in Austria (not yet a member of the EU) had to pay customs if they exported goods to the EU made partially in Eastern Europe. However, since becoming a member, Austria's disadvantage has vanished, thereby relieving the textile industry from needless pressure. Nonetheless, to stay competitive on the international markets, the restructuring of the textile underway in Vorarlberg has been reflected in the success stories of Wolford, Josef Otten, Willy Hermann, and others. Creativity, innovation and rationalization are seen as the means for being successful in a surrounding of high production costs and rigid environmental regulations.

Organization

Because of its overall complexity, organization of the textile industry is not as obvious as it usually appears in a cluster with a distinct end-product and market segment. Therefore, it will prove necessary to consider it as consisting of three sub-clusters, divided according to their three principal product categories: clothes, embroideries, and textiles.

1. Firms <http://www.vrz.net/textil/>

In terms of industrial clusters, the production of clothing is of relatively minor importance in Vorarlberg. A few big firms produce mainly hosiery, underwear and other outerwear (including the traditional costumes called "Trachten"). Some of the firms comprise nearly the whole value added chain where others rely on the supply of high quality inputs from inside the region. Not all firms specialize solely in the production of clothing, as some supply inputs to other clothing manufacturers. Products are distributed under the firms' brand names, such as **Wolford** (hosiery, bodies, and bathing suits), **WOLFF** and **Huber Tricot** (lingerie and sleepwear), **Amann** (traditional costumes), **Gasser** (children's wear) and **Bäumler** (suits, ties, and shirts). Additionally, specialized products are manufactured for such prominent brand companies as Marks &

Spencer, Palmers, Donna Karan , DKNY, and Ungaro. The firms' main strategies are to produce high quality, innovative products and product lines. The firms consider it important to enter markets with their own strong brands – they have often been highly successful in niche markets (e.g. Wolford).

The "embroideries cluster" is quite a different picture. A huge number of small firms use identical technologies to manufacture the same product for the same market (**Brunner, Stark Emil & Co., Weber**, etc.). The difference between individual products lies only in the design of the embroidery, which itself is very easily imitated. Only a few innovative firms (e.g. **Hämmerle & Vogel**) possess a leading production technology allowing themselves to stay ahead of the existing strong competition. Thus the picture of the embroidery industry is twofold. First are numerous small producers that work very hard to survive regional as well as the international competition. For this group, restructuring pressures remain strong and certain firms are certain to be driven out of business. At the same time, highly innovative firms that command high prices on the international markets continue to prosper. Thus, various firms in this sub-cluster see themselves confronted with quite contrasting future prospects.

The sub-cluster that produces textiles is involved with several different steps, from the spinning of yarn, to the weaving, dyeing and finishing of textiles, including the manufacture of knitted and crocheted fabrics (**Schoeller, Josef Otten, bandex, Getzner, F.M. Hämmerle, Willy Hermann, ChriStoff, J.M. Fussenegger**). In order to adapt to the new market conditions (cost pressure from Eastern European and Asian countries), certain firms have specialized within the value chain by increasing their innovative capacities. Other firms have specialized in markets, such as the niche market for home textiles, rather than in innovation. Another strategy was to drop those production phases in Vorarlberg that demand less highly skilled labor, and shift less demanding production to low wage countries. Whatever the strategy adapted, the firms' aim was always to produce high quality products that justify Vorarlberg's high wage location as the preferred production site.

Due to space limitations and the huge number of potential firm contacts, a contact list cannot be provided here. However, the cluster web address (above) supplies a rich list of the key contacts for all different product markets. In addition, the Chamber of Commerce (see section Institutions) will gladly respond to inquiries and offer assistance in finding the firm(s) and the key contact partner(s) sought.

2. Relationship between Firms

Competition and cooperation among clothing manufacturers play a minor role in establishing relationships, as most of them serve different markets through individual distribution channels and produce with different technologies.

Cooperation among the producers of embroidery is difficult to detect because of the strong competition that often divides them, particularly the high likelihood of product imitation and the independent mentality of the firms'

owners. But small firms under the greatest pressure of being thrown out of business do not consider cooperation as unimaginable as it was a decade ago. And, with the support of the Stickereiverband (a subgroup of the Vorarlberg Chamber of Commerce), cooperation in form of common product presentations at the most important textile fabrics fair – the PREMIERE VISION in Paris - is now thriving. Nonetheless, considerable room still remains for future expansion of beneficial cluster cooperation.

Textiles producers, more than the other sub-cluster firms, are vertically linked quite strongly with others. Without high quality producers of yarn, specialists in dyeing, weaving and finishing, and the high quality manufacturers of knitted and crocheted fabrics, the textile cluster could not produce its highly innovative and creative products. Thus, the textile cluster's highly specialized firms are strongly linked with each other through a strong value-added chain, its horizontal links remaining of comparatively minor importance. Production capacity is occasionally contracted from a competitor or minor contracts assigned outright to a competitor, although risks to a firm's market niching reduce substantially cooperative efforts to establish common distribution of product lines.

3. Support Services

Various different institutions (see next section) in the region provide a solid basis for the sustainable development of the textile industry cluster. The Location Agency Vorarlberg – a public regional industrial promotion agency – sees its goals as attracting new businesses to the region and in assisting the existing firms to enter new markets. The private equivalent of this public agency is the Innovative Management Concept Incorporation, which specializes in textile firm consultancy. The Vorarlberg Chamber of Commerce (WK Vorarlberg) supplies firms and government offices with useful information, engages in lobbying on behalf of cluster firms, and tries to establish cooperation among the different firms. Here again, related divisions of the WK play a more or less important role in supporting cooperation within the different sectors of the textile industry cluster. The Chamber of Labor (AK) offers seminars that aim at increasing cooperation among textile firms.

The Vorarlberg Technology Transfer Center (VTTZ) assists firms helping them apply for funds on the national and the European level. The RETEX program, which was launched in 1992 by the European Commission to assist areas heavily dependent on the textile industry, constitutes the single most important support program. The Vorarlberg Institute for Economic Development (WIFI) supports businesses through the provision of technical assistance. The textile school (HTL Textil Dornbirn) provides the much-needed skilled workers to the textile industry cluster. The curriculum of HTL Textil Dornbirn states clearly that the textile industry of the future is an innovative and demanding business, not necessarily an old outdated industry branch.

A dense network of banks and business services (not specifically oriented to cluster firms) forms a strong regional industrial support base. The textile

industry's high export performance is supported by a high density of extremely competent transport services in the region. The existing highway infrastructure in the region as well as in the bordering regions is of significant importance to the region: much of the business has to be done on a personal basis (three hours by car to Milan – the heart of fashion – is quite an advantage to local firms).

Governance

Vorarlberg Withdraws. By the end of the eighties and the beginning of the nineties, the Vorarlberg textile industry cluster was exposed to extremely strong competitive pressures and trade restrictions, which forced many old and traditional companies out of business. Because of the economy's strong dependence on the textile industry, these failures had very severe implications for Vorarlberg. One consequence was that certain interest groups (e.g. Chamber of Commerce) strongly advocated Austria's entry into the EU to overcome the existing disadvantages (unfavorable EU regulations regarding the passive finishing industry). Surviving firms were forced to restructure to stay competitive within new global markets. Reflecting on this experience gives perspective in how the textile industry cluster in Vorarlberg is governed: shock of serious and continued decline in the regional textile industry cluster actually reduced its support from the regional government. Vorarlberg sees ongoing restructuring away from the textile to the more promising metalworking industry as a natural and not undesirable trend, which would be obstructed with strong textile industry cluster support. Vorarlberg recognizes its minimal duties and obligations, helping the textile industry when necessary, but not paying as much attention as textile firms would obviously prefer.

Chamber and Firms Advance. In consequence, the Chamber of Commerce and individual firms are left to initiate and support something like a textile cluster in Vorarlberg. Numerous small projects launched by the Chamber of Commerce were designed to establish better cooperation between certain firms. For example, under the project named Piz Buin, the Chamber of Commerce brought together different firms that form a value chain with the goal of shortening the time-to-market. Even though the project was conducted by the Chamber of Commerce, the ideas spilled across various cluster members such that many other textile firms in Vorarlberg now carry out the same procedures to shorten the time to market through strong links within the supplier-buyer-chain. Increasing degrees of vertical cooperation are clearly visible.

Firm-led Initiatives. On a horizontal level, different firms joined to start a textile school initiative designed to attract students who would become future specialists in the rapidly restructuring textile industry cluster. This is done by providing grants for good students and a workplace guarantee. In addition, leading employees of certain firms – inspired through a workshop on the Italian textile industry – worked together to create the cluster trademark "Made in Vorarlberg". This successful workshop was initiated by the chamber of Labor (more information below). The group contacted the manager of a private business consultant (IMC) to develop their ideas with professional support. He

was already engaged in a related project aimed at promoting the Austrian textile industry abroad under a common heading (like "Made in Austria"). The outcome of this project is not yet foreseen. However, it is the firms' voluntary activities that lie clearly at the heart of governance. Some business leaders who are most supportive of the cluster regard it as undesirable to institutionalize something like "cluster governance" beyond the firm level.

Organized Embroidery. However, this does not hold true for the small producers of embroideries, for which circumstances are far less pleasant. Here the pressure on the individual firms to become more competitive through cooperation is very intensive. But because of native distrust, necessary steps are often not undertaken. As a consequence there is much room for institutions that aim to develop cooperation. The Stickereiverband – a subgroup of the Chamber of Commerce – is assuming this role. The Stickereiverband unites different high quality producers of embroidery under the label 'Austrian Embroideries' and acts parallel with client firms as their collective representative at the international level (e.g. at the PREMIERE VISION PARIS). As the representative of Austrian Embroideries, they rent their own box at different international fairs and produce a high quality image magazine. Thus, in this sense the institution's aims are to force cooperation by acting as a representative on the international stage. The Stickereiverband also takes responsibility for managing 'capacity sharing' arrangements; this arises when one firm temporarily requires the additional production capacity of another firm that has excess capacity at the moment, thereby increasing the overall efficiency of the regional production system. In terms of the limited governance measures attempted, the Stickereiverband helps to increase the competitiveness of the embroidery industry by acting upon behalf of members at the international level and assisting them at the regional level.

Institutions

Chamber of Commerce (WK Vorarlberg)/Stickereiverband

<http://www.wkv.at>

<http://www.vrz.net/textil/sticker5.html>

The Chamber of Commerce represents the concerns of its members (every company is obliged by law to join the WK). The WK also sees as its task the responsibility to collect new ideas on regional development and push them further if regarded as desirable. Thus, the WK plays a key role in initiating cluster projects. One important subgroup of the WK – the Stickereiverband - and its role has been discussed in the sections above.

Key Contact: Ing. Hödl and Mr. Kazil (Textile), phone: 05522/305-421 and 05577/8141, Mag. Walch (Embroidery), phone: 05577/83234

Chamber of Labour (AK)

<http://www2.vol.at/Arbeiterkammer>

The Chamber of Labour assumed responsible for the organization of a workshop on the innovation process in the textile industry. Business leaders and representatives of various institutions (e.g. Istituto Europeo di Design) from Italy were invited to talk about the

successful restructuring of the Italian textile industry some 10 years ago and to assist the participants by working out a regional strategy for the textile industry in Vorarlberg. The results of this unique project were published in book form by the Istituto Europeo di Design (Title: Innovation Process in Textile Industry). Key Contact: Ms. Hehle, phone: 05522/3551-0

Technology Transfer Center Vorarlberg (VTTZ)

<http://www.vttz.at>

The Vorarlberg Technology Transfer Center (division of the Austrian Innovation Relay Centre) supports firms in the fields of research and technology. The VTTZ provides firms with useful information regarding patents, cooperation partners, financial aid at the European level (the RETEX program advocates the modernization of the textile industry in the EU), etc. and assists them with various projects. Key Contact: Dr. Krüger, phone: 05572/389470

Vorarlberg Location Agency (Wirtschaftsstandort)

<http://www.vorarlberg.at/Landesregierung/englisch/wcomeng.html>

The Vorarlberg Location Agency is a public corporation financed and controlled by the province of Vorarlberg. Its tasks are to attract new investors to the province and to provide services to existing local firms.

Key Contact: Mag. Rüdissler, phone: 05574/511-2610

Vorarlberg Institute for Economic Development (WIFI)

<http://www.vorarlberg.at/Landesregierung/englisch/wcomeng.html>

The WIFI is a division of WK that supplies technical assistance in form of information and advanced training programs.

HTL Textil Dornbirn

The textile school trains much-needed skilled worker for textile firms, but also serves as a research institute and potential partner to the textile industry.

Key Contact: DI Mayer, phone 05572/3883-0

Innovative Management Concept Incorporation (IMC)

The IMC is a private consultant agency with its focus on internationalization. They also assist applications to various financial aid programs, thus enhancing chances of implementation.

Key Contact: Mr. Vallaster, phone: 05522/45813

Funds

Vorarlberg grants financial support in various fields. The most important grants are the those that aim at enhancing private R&D, restructuring, and supporting business start-ups. However,

in comparison with national grant sources, they are quite small and often allocated to supplement national grants.

Austrian Research Fund (FFF)

<http://www2.telecom.at/fff/home.htm>

The research promotion fund for commercial enterprises (FFF) finances research projects of natural and legal persons in the field of application-oriented and technology-oriented research through contributions or loans. For research projects that result in immediate economic benefits for the applicant, fair cost contribution are assessed to the applicant. It is the essential task of the RPF to raise business-related research in Austria to the EU-level. Companies are expected to participate in cross-border cooperation in research and development, and in projects that could otherwise not be carried out or only with difficulties. Since the beginning of 1995, this fund has been supervised by the Ministry of Economic Affairs.

BÜRGES

<http://www.buerges.co.at/buerges/survey.html>

The BÜRGES defines its goal in supporting the foundation of new businesses. The costs involved in setting up a new business are partly subsidized by the fund. The BÜRGES development bank provides surety for credits earmarked for investment.

ERP-Fund

<http://www.erp-fonds.gv.at/erp/richtlinien/index.htm>

http://www.erp-fonds.gv.at/erp/richtlinien/erp_wach.htm

The ERP technology and innovation program was set into place to reduce risks associated with innovative projects and to foster co-operation between firms and research institutes. Support works by granting loans to firms and projects with generally favorable conditions.

Innovation and Technology Fund (ITF)

<http://www.bmwf.gv.at/7forsch/f&eoe/712finan.htm>

The innovation and technology fund (ITF), a strategic instrument for the federal technology policy was installed with money received by the privatization of energy production enterprises in 1988. A ministerial committee decides on the use of promotion funds for research, development and quick application of new technologies in the Austrian economy. The technological renewal of the Austrian economy shall thus be promoted, priority for applied research intensified, and the competitiveness of Austrian enterprises raised. Beyond the promotion of projects in the fields of research and technological development, ITF also helps diffuse technologies through financial assistance and counseling to stimulate high-tech enterprise formation.

K-Plus

Program in preparation. This program aims at improving the links between public sector research and the industrial sector. The Austrian Ministry of Science and Transport (BMWf) will promote academic-industrial collaboration through setting up competence centers. As defined by the BMWf competence centers are collaborative research institutions aimed at high-quality, pre-competitive and industrial basic R&D activities that fulfill the needs of the industrial sector and preserve high academic standards. It is planned that a maximum of 60% of a competence center's budget will be provided through public funds.

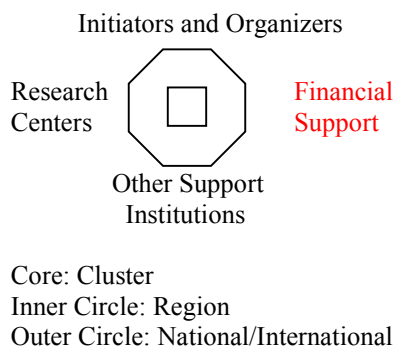
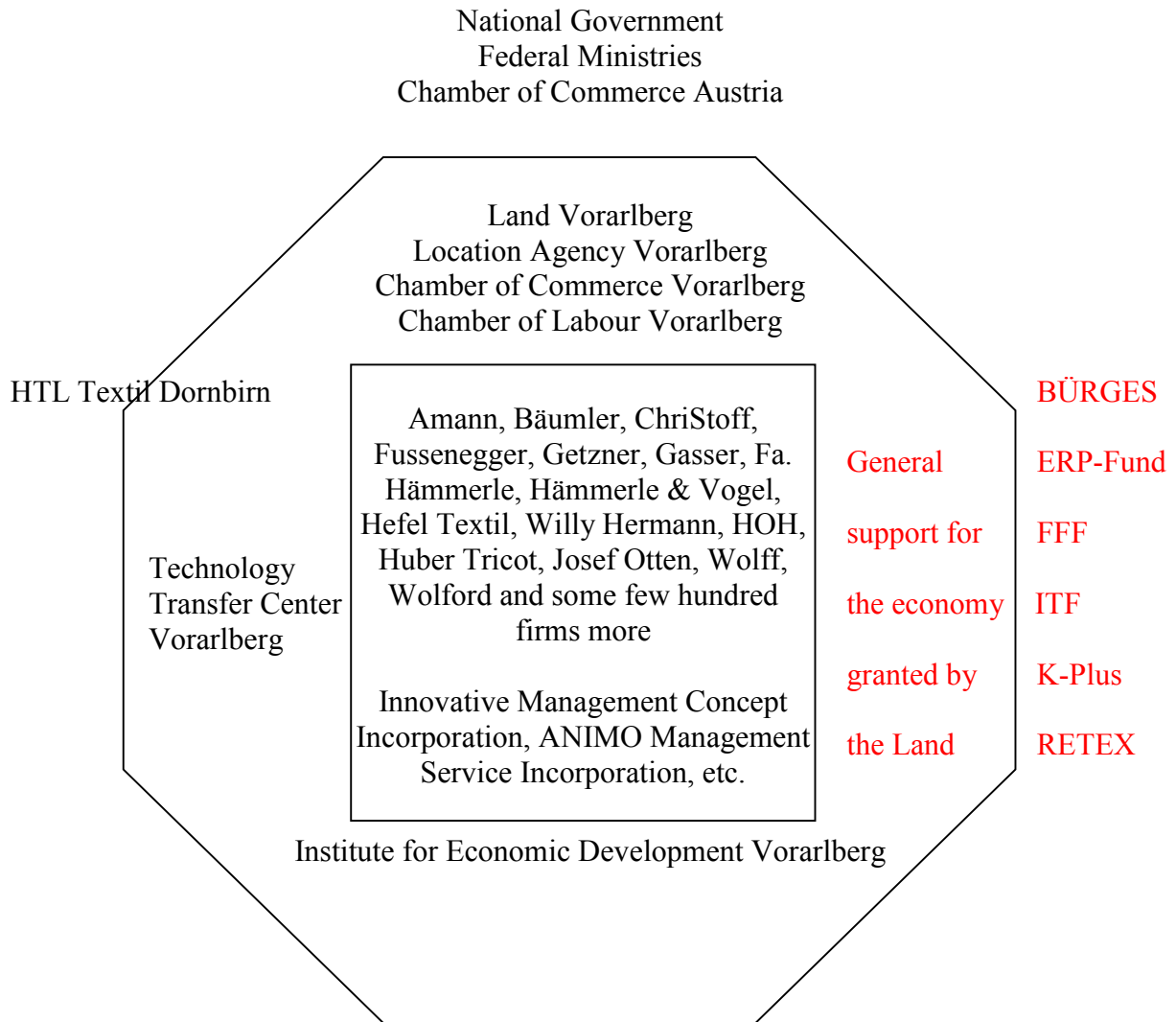
Key Contact: Dr. Stampfer, phone: 01/53464-3412

RETEX

<http://europa.eu.int/en/comm/dgiii/publicat/textile/en/index.htm>

The RETEX program is designed to assist regions or areas that are heavily dependent on a declining industry (objective 2 area). The program goal is to make these affected regions less dependent on the declining textile industry and to improve its overall performance. Special attention is given to the improvements in the qualifications of the workforce through adoption of new technologies and to cooperation between training centers and firms.

Textile Industry



Reference List

Hutschenreiter, Gernot, (1994), "Cluster innovativer Aktivitäten in der österreichischen Industrie"; tip, Wien

Keller, Wolfgang (1997), "Trade and the Transmission of Technology," Working Paper 6113, National Bureau of Economic Research, Cambridge, MA

Peneder, Michael (1994), "Clusteranalyse und sektorale Wettbewerbsfähigkeit der österreichischen Industrie"; tip, Wien

Weiss, Andreas (1994), "Österreich als Standort international kompetitiver Cluster"; Industriewissenschaftliches Institut, Wien



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