Towards an integrated Baltic Sea Region:
Cities and Regions as drivers for spatial development and integration

Working Group 1

Appendix (part 2) *to the*
Final Report of the project work coordinated by Nordregio
in the framework of the East-West Window project.

edited by numerous WG 1 experts
(cf. annotation in the text)

BSR Interreg IIIB Neighborhood Programme –
TACIS strand

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Appendix:
BSR SMESTOs in the knowledge economy –
part 2: showcases

In the following a number of showcases are presented. As they should talk for themselves, they have not been edited further, so that the original texts provided by the national experts can be read below. Also their focus are partly extremely different, which shows on the one hand the great variety of different approaches across the BSR, on the other hand it makes it very difficult to structure them in a certain way or even to draw any universalised conclusion. Thus, the intention is here to demonstrate a large array of different SMESTOs in the BSR in order to illustrate how and why these cities have been able to build-up knowledge-based economic clusters to become strong competitors in their country, in the BSR or even beyond.

The national experts have been asked by Nordregio to consider the following key questions for their analysis:

- What kind of knowledge-intensive clusters of firms are to be found in the SMESTO at hand? What are the specific competencies/products/services? What is their size (here in terms of employees, firms etc.)?
- How have such clusters been established? What were the pre-conditions (e.g. R&D facilities, traditions in specific industries or specific procedures within certain production/value chains)? In how far have public and/or private institutions (or their initiatives respectively) been critical here?
- What kinds of policies have strengthened the entrepreneurial capabilities regarding these clusters?
- What is the territorial scope of those clusters? Are their any further functional relations/co-operations to other national or BSR cities and MEGAs (or even beyond)?

To guarantee a wide range of different showcases, the following ones cover a balanced set of SMESTOs in three different territorial situations:

- SMESTOs at the fringe of metropolitan regions;
- SMESTOs located within a relatively dense networks of SMESTOs;
- Isolated/peripheral SMESTOs.

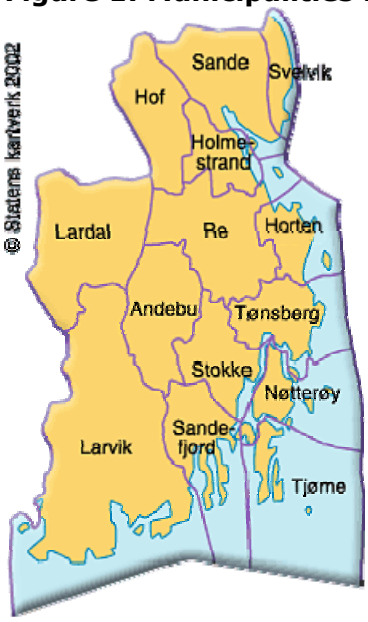
I. Nordic Countries

- ***Vestfold cities (Norway)***

Author: Jon Moxnes Steinecke (Nordregio)

Vestfold is a small county located on the west of the Oslo fjord. Some 60-100 kilometers south-west of Oslo, it hosts some 220.000 inhabitants in total. A large proportion of the population lives in a handful of coastal cities with 25.000-50.000 inhabitants (Holmestrand, Horten Tønsberg, Sandefjord, Larvik). North-south, these constitute a polycentric functional region.

Figure 1: Municipalities in county of Vestfold



The business community is characterised by mainly SMEs, and several local industrial clusters have currently been identified in the region – in light metals, food production, chemical/composite production, and electronics. We will focus on the last of these clusters.

Local cluster history

The electronics industry in Vestfold today consists of around 95 enterprises, encompassing some 2.500 employees. Its development started with a single enterprise in 1964, and its growth during the first 30 years was dominated by spin-offs. Over the last 10-15 years there have been some modest ups and downs, with close to zero growth in the number of enterprises and employees over the period as a whole. Some enterprises have gone bankrupt, but nearly all have re-emerged in a changed, reduced

form. There have also been a few spin-offs. In the 2000s, some small new start-up enterprises have emerged.

The enterprises are mainly sub-suppliers, their rate of export is around 90%, and competition is strong and global. These firms constitute a modern high-technology research-intensive industry. Up to 20% of the business is research initiated, and the academic level of the engineers is high.

The end products require a long, complex, expensive and demanding process of development. Many of the enterprises are influenced by electronics components becoming smaller and smaller, into micro-technology and nano-technology. The technical competence of the employees is good. All the enterprises are classified as SMEs, with the number of employees varying from 2 to 250.

In the 1980s several of the electronics SMEs initiated an informal collaboration, based on shared ownerships of the enterprises. At the same time, Horten became gradually apparent as a national hub in the electronics industry. Local stakeholders, such as Rotary and the National Federation of Engineers ensured that the regional Graduate School of Engineering became more involved in cooperating with the local electronics industry. The Graduate School of Engineering (later merging with the Vestfold University College) introduced courses in electronics in close collaboration with local firms. The regional electronics initiative was branded Electronic Coast, but lost steam into the 1990s.

In 1997 the Norwegian Research Council attempted to kick-start Electronic Coast again, this time within the context of the REGINN research programme. This initiative was by then also formally backed up by the Vestfold county administration as well as Vestfold University College, two major regional stakeholders in the public sector. By the year 2000, Electronic Coast involved 30 member enterprises with a total of 2000 employees.

Although the REGINN programme came to an end already in 2001, in the last decade the electronics industry in Vestfold in general (and Horten in particular) have benefitted from support from several additional programmes specifically aimed at boosting the Vestfold regional innovation system in general, and what has been identified as a local microsystems or electronics cluster in particular. The awareness of these systems is also due to the activities of and within the Electronics Coast network, which have sustained local triple helix initiatives to a considerable degree. Two of the

most significant programmes are the Arena Programme and the Norwegian Centres of Expertise programme (NCE).

Arena is a programme owned by Innovation Norway, the Research Council of Norway and the Industrial Development Corporation of Norway (SIVA), with Innovation Norway as the main operator designed to promote increased innovation by engaging in cooperation and setting up networks between business participants, R&D participants and the authorities. The programme is directed at regional business communities where clusters of companies operate within one value chain, at the relevant knowledge suppliers, and where the potential exists for increasing cooperation and teamwork between these participants. One of the first Arena initiatives, Inno-Tech, was 2003-2006 based in Vestfold and aimed at strengthening the regional innovation system in the ICT and electronic industry. Its aims included to increase value creation and competitiveness through competence development and cooperation between enterprises as well as strengthening interactions between R&D institutions and the local business community. The Inno-Tech project was devoted to supporting new enterprises and spin-offs from established industry in accessing both technological know how, industrial and market competence and financial capital for research intensive and high risk projects in local enterprises. High risk projects are projects still in the early stage of a product innovation.

Norwegian Centres of Expertise (NCE) is a more recent programme starting in 2006 and seeks to strengthen clusters with an international orientation and potential for innovation-led growth by increasing value creation and initiating and enhancing co-operative innovation and internationalisation. Secondary objectives are to create interest in and commitment to cluster development, to generate concrete results at cluster and company levels and to provide greater insight into cooperative development processes. The programme is more selective than Arena as it targets the strongest clusters in the country. One of the original NCEs, the NCE Microsystems project in Vestfold aims at boosting the Electronic Coast network. even further.

13 of the 14 firms in the microsystems cluster core are located in the town of Horten. The core firms hold > 75% of the total number of employment in the cluster. Nearly all of the jobs can be described as manufacturing, whereas there are also a smaller number of jobs to be found in related knowledge-intensive business services. The cluster can still be described as knowledge-intensive:

Local knowledge-intensive cluster

More than 40% of the employees of the core firms in the microsystems cluster holds a university degree, which in the Norwegian context is fairly high, provided that there are no close universities.

The Vestfold microsystems cluster rely on formal knowledge though, a high level of R&D activities and collaboration with R&D institutions both locally and nationally (Isaksen, forthcoming). The firms in the cluster frequently find their strategic customers, suppliers and knowledge providers, i.e. their innovation partners, on an international level. This is particularly evident in a mature cluster such as that in the Vestfold electronics industry. In the microsystems cluster, the firms find strategic subcontractors internationally, and these international suppliers dominate the core firms strategically, as well.

Local cluster policies

As Isaksen (op.cit.) notes, an important local factor in developing the competitiveness of regional clusters in Norway has been the historically developed, unique competencies of local firms in the cluster. The competence development potentials have been strengthened by the fact that local university colleges and other public HEIs and R&D institutions have adapted their activity and course offerings to the requirements of key local industries. The collaboration between Vestfold University College and local enterprise in developing Electronic Coast and the microsystems industrial milieu in Vestfold is a case in point.

Territorial scope of current clusters

The territorial scope of the microsystems cluster is gradually expanding to include the neighbouring counties of Buskerud and Telemark as well. By including support industries such as ICTs, and R&D institutions in the greater Oslo region, the regional electronics/microsystems cluster is growing territorially.

Functional relations with MEGAs, other BSR cities

Infrastructure improvements are increasingly attaching the Vestfold string cities to the Greater Oslo Region. The northern part of the string city system on the western side of the Oslofjord, which also includes the regional centre of Buskerud county (Drammen-Horten-Tønsberg-Sandefjord) is already incorporated in the labour market area of the Norwegian capital, and several of the northernmost municipalities of Vestfold county take part in a strategic collaboration scheme aimed at developing the Greater Oslo region. The main MEGA relation is thus with the national capital region.

The functional relations between Vestfold and other cities abroad are closely linked to initiatives in the public sector. Vestfold University College has, for instance, established informal collaboration with Blekinge University of Technology, sharing experiences and promoting regional bench-learning between Vestfold and Karlskrona. In Vestfold, the electronics industry is clustered in Horten. Both Horten and Karlskrona are, accidentally, old naval headquarters that have undergone major economic restructurations and re-orientations due to the closure of naval yards and the phasing out of defence activities the last 30-50 years. This shared fate might have occasioned this rather extensive regional Norwegian-Swedish contacts to a significant extent. This extended collaboration has been further promoted by the fact that Karlskrona and Horten already had an up-and-going friendship city arrangement.

In Norway, cities' links to cities and towns in the BSR region are still mainly based on such friendship city arrangements. Major towns in Vestfold have traditionally made such arrangements with other Nordic counterparts in the 1970s and 1980s, but have lately taken up additional friendship arrangements albeit not with cities located in the greater BSR. The functional content of these arrangements are not as extensive as that displayed with Horten-Karlskrona. For the Vestfold cities, we have currently the following friendship city arrangements in the BSR:

- Horten (to Karlskrona (SE), Hillerød (DK), Lovisa (FI))
- Larvik (to Frederikshavn (DK), Borlänge (SE))
- Tønsberg (to Roskilde (DK), Linköping (SE), Joensuu (FI))
- Holmestrand (to Vänersborg (SE), Herning (DK), Kangasala (FI), Åland)

In addition to this, Vestfold county has itself established a regional friendship county arrangement with Kaunas (LIT).

References

Finsrud, H.D. (2007): "Electronic Coast – fra lærings- til innovasjonssystem?" [Electronic Coast – from learning to innovation system?] Regionale Trender no. 1 2007.

Gausdal, A.H. (2008): Network reflection – a road to regional learning, trust and innovation. PhD Dissertation, Bodø Graduate School of Business.

Isaksen, A. (forthcoming): "The innovation dynamics of global competitive regional clusters: the case of the Norwegian Centers of Expertise" Accepted for publication in Regional Studies.

Isaksen, A. (2003): "Learning, globalization, and the electronics cluster in Horten: discussing the local buzz-global pipeline argument". Paper presented at the 2003 DRUID Conference, Copenhagen June 12-14.

Stave, F. et al. (2005): En kartlegging av elektronikk- og IKT-industrien i Vestfold [A survey of the Vestfold electronics industry]. Bachelor Degree Paper, Vestfold University College/Electronic Coast (May).

- ***Karlskrona (Sweden)***

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Karlskrona is a municipality located at the south coast of Sweden, holding some 62,000 inhabitants (2007). Half of the population lives in the central town, which is also the administrative centre of Blekinge county, which is comprised by the five municipalities of Sölvesborg, Olofström, Karlshamn, Ronneby and Karlskrona (see map). Karlskrona and Ronneby constitute a distinct local labour market area, as do Olofström and Karlshamn. Best described as an isolated SMESTO, Karlskrona has positive net in-commuting, mainly from Ronneby, who with 28,000 inhabitants has less than half the population of Karlskrona.

Historically a naval port, a major part of the Karlskrona town centre was placed on the UNESCO World Heritage list in 1998. As a naval base, large parts of Karlskrona were restricted areas for foreigners until the late 1980s. A ferry line connecting Karlskrona with Gdynia in Poland was only opened in 1992. For the best part of the 20th century the Karlskrona shipyards was the main local employer. The last three decades has seen a decline in economic activities related to maritime activities, and new local initiatives have been explored to post the local economy.

In the 1970s and 1980s changes in Swedish defence policy and a shift towards fewer employees in major manufacturing plants led local Karlskrona companies to lay off workers. This resulted in high local unemployment and a shrinking population. In 1989 the Blekinge Institute of Technology was established, originally as a more modest university college. The university college, with campuses both in Karlskrona and neighbouring Ronneby, was initially not successful in attracting and retaining youth to any considerable extent. This put a great deal of pressure on public actors to be more proactive. Telecommunications was identified as promising avenue.

Local cluster history

The emerging telecommunications cluster has had several origins. In the early 1990s the Karlskrona company EP-Data (with LM Ericsson as a 50% owner) had 50 employees and a small software development division. The company collaborated extensively with the university college on educational programmes. In the early 1990s the firm Nordic Tel was awarded the permission to operate the third Swedish GSM network under the Europolitan brand. With several board members with roots in Blekinge, Nordic Tel decided to locate its headquarters to Karlskrona. The university college's focus on ICT as well as the municipality's ability to provide Nordic Tel with attractive locations nearby the university college also played a part.

Meanwhile, in the public sector, the local director of regional development in Karlskrona municipality had identified telecommunications as a focus area in terms of strategic business development. These diverse motivational factors unified 'civic entrepreneurs' at the university college, the telecommunications sector and the local municipality to create the Telecom City network in 1993. Since 1993, Telecom City has evolved into one of the more well-known triple helix initiatives in Sweden.

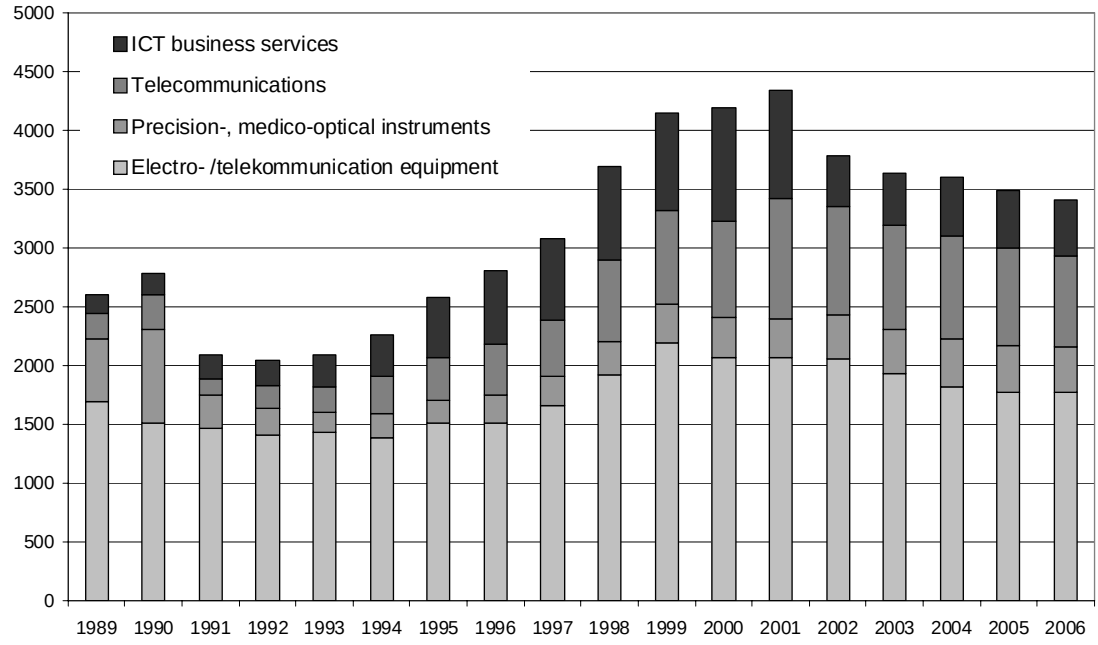
Telecom City is a membership organisation, with a progressive membership fee, depending on company size. The companies involved work with different tools to strengthen business activities and to develop new skills and competencies. The university college, which obtained PhD examination privileges and became Blekinge Institute of Technology, has a long-term commitment to strengthen Telecom City's development as a leading commercial environment in ICT and telecommunications. It continues to focus on ICT and telecoms, and has a large student body in the ICT/telecommunications areas. The Karlskrona municipality's commitment in the Telecom City network is mainly to create preconditions for an attractive business environment locally, to offer proper community services and infrastructures, and to encourage new business ventures in the ICT/ telecommunications field. Currently, the network is funded at about 60 per cent from the municipality and 40 per cent from private companies.

Local knowledge-intensive cluster

The vision for Telecom City quickly took root among both public individuals, agencies as well as the region's ICT companies, and the willingness to focus on cluster development grew stronger as the work progressed.

By the late 1990s, Karlskrona and the neighbouring municipality of Ronneby could boast rapid economic growth. The main driver of this expansion was a significant growth in the local ICT and telecommunications industry. The number of employees in the industry increased with 400% in the course of ten years, and by 2001 more than 4500 persons were employed in some 100 ICT and telecommunication companies, 3500 of them in Karlskrona alone:

Figure 2: Employment in the telecommunications cluster in Karlskrona/Ronneby 1989-2006



Source: Statistics Sweden, rAps database

As can be seen in figure 1, the telecommunications cluster boomed in the late 1990s, whereas the 2000s so far has seen something of a decline 2002-2006. This is also reflected in the student enrolment numbers of the Blekinge Institute of Technology, as the institution lately has struggled somewhat in maintaining its position as the number two institution in Sweden in terms of enrolled ICT students (Engstrand and Åhlander 2008).

The number of members of the Telecom City network increased steadily until the bursting of the ICT industry bubble in 2001-2002, but has recovered somewhat since then. In 2006, a total of 42 companies in the fields of hardware production, software, mobile phone operators, mobile internet and wireless services were members of Karlskrona's Telecom City. The public sector and the business community are jointly funding the Telecom City project. The project members fund core operations, whereas

other more strategic initiatives are financed with additional funds. A number of conferences, seminars and training-oriented activities are carried out each year.

The industry development of the last five years has seen massive layoffs in several of the main employers of the local ICT cluster. This has changed the priorities of the Telecom City member companies. From the outset, in the 1990s, Telecom City was mainly occupied in discussing the provision of skilled labour. Lately, with the scaling down of activities in several large ICT employers, the human capital challenge is not that urgent (Uhlin in Gustavsen ed. 2004). Large companies dominate the board of Telecom City, yet it is difficult to identify issues that motivate common, shared efforts.

In addition, the academic and public sector entrepreneurs that initiated the Telecom City network in the early 1990 are no longer maintaining their position in the local triple helix network. As a consequence, the political control of the Telecom City process is on the increase. A contributing factor has also been that the Karlskrona municipality's contribution to Telecom City has been on the increase, as well, lately.

Currently, the main challenge facing Telecom City is to ensure that the small- and medium sized member companies are able to reap benefits. One way forward is to create arenas where the SME members are better enabled to strengthen their collaboration and cooperation opportunities.

Local cluster policies

Telecom City is essentially a virtual network of actors, although the agglomeration of ICT actors in the proximity of the Institute of Technology's campus could be seen as such. There, Nordic Tel and a technology park were set up in 1990 in a deserted military area. Otherwise, the members of Telecom City are distributed all over the Karlskrona municipality, with a certain concentration to the city centre.

Telecom City is organised with a project management team and a large project board that includes member companies and representatives of the municipality, the Institute of Technology. The Swedish Agency for Economic and Regional Growth (NUTEK) as well as the Swedish Governmental Agency for Innovation Systems (VINNOVA) both present Telecom City as an example of a successful construction of a regional innovation system (see for instance NUTEK 2001, Christensen, Hallencreutz and Lundequist 2006).

A key to the Karlskrona narrative is the supposedly policy-enhancing observation that clustering need not be mysterious – apparently it can be designed and built form scratch, in this case in 10-15 years. The values of cooperation are strong in this environment, Blekinge is a small county spanning only five municipalities, and personal relations are strong (Cooke and de Marchi 2002). There is a strong regional identity around ICT and telecommunications, and a sense of pride in the local community that Karlskrona seemingly has succeeded in a regional transformation and the development of knowledge-based activities given that it was historically poor and only a generation back suffered from economic decline.

This assessment has lately come under criticism as being overly simplistic. Engstrand (2003) argues, for instance, that this presentation is not evidence-based. Instead, she maintains, the Telecom City story should be perceived of more as an example of successful place branding and image-building than as an illustration of successful knowledge-based economic restructuring. This argument is developed further in Engstrand and Åhlander (2008:499), who note that the local business policies of Karlskrona concerns both instrumental and symbolic regimes: "instrumental in the sense that the [Karlskrona] municipality [since 1999] initiated development projects, and symbolic in the sense that the municipality used Telekom city to enhance its image".

Territorial scope of current clusters

The Telecom City network collaborates closely with the Softcenter science and technology park, which was set up in neighbouring Ronneby as early as in 1987. The administration of Softcenter was instrumental in developing the profile of the university college, which was established the year after. Softcenter's initial educational and training programmes and –activities were transferred to the new university college, whereas Softcenter became a hub in new business venturing. Only a handful of the current member companies of Telecom City are located in Ronneby.

In 2004, Karlskrona, Ronneby and Karlshamn municipalities embarked upon a common development project in order to boost regional economic development. The project Trådlösa förbindelser (wireless relations) aims at upgrading the three local innovation systems to a proper regional innovation system in the area of wireless communications. This represents an effort to expand the current scope of the telecommunications cluster.

Functional relations with MEGAs, other BSR cities

In Karlskrona, mergers and acquisitions has meant that the major firms of the telecommunications cluster have gradually lost much of their independence and their strategic role in the regional innovation systems. The most significant change was the aquisition of Nordic Tel - first by Vodafone (2003) and then by Telenor (2006). This has meant that the functional relations with Stockholm and Oslo have been strengthened, but at the cost of local and regional independence as the strategic decisions related to the GSM / cellular phone industry are no longer made in Karlskrona, but rather in Stockholm or even abroad (London, Oslo).

References

Christensen, L., D. Hallencreutz and P. Lundequist (2006). Policylärande i och av Vinnväxt [Policy learning in and by the Vinnväxt programme]

Cooke, P. and B. de Marci (2002): Generative Growth, Knowledge Economies and Sustainable Development: Implications for Regional Foresight Policy. Paper prepared for Directorate K, DG Research European Commission (May).

Engstrand, Å.-E. (2003): The road once taken: transformation of labour markets, politics, and place promotion in two Swedish cities, Karlskrona and Uddevalla 1930-2000. PhD Dissertation, Gothenburg University

Engstrand, Å.-K. and A.-M. Sätre Åhlander (2008): Collaboration for local economic development: business networks, politics and universities in two Swedish cities. European Planning Studies vol. 16 no. 4; 487-505.

Gustavsen, B. ed. (2004): Benchmarking av innovasjonsprosesser i Norden: arbeids- og utviklingsorganisasjon [Benchmarking of innovation processes in the Nordic countries: work- and development organisation] Pilot study report to Vinnova/ the Norwegian Research Council Stockholm/Oslo.

Hallencreutz, D, and P. Lundequist (2003): Spatial clustering and the potential for policy practice: experiences from cluster-building processes in Sweden. European Planning Studies vol. 11 no. 5; 533-547.

NUTEK (2001): Innovative clusters in Sweden – Practical lessons from regional cluster-building. Strategy report from the Swedish cluster focus group.

Parker, R. (2007): Networked governance or just networks? Local governance of the knowledge economy in Limerick (Ireland) and Karlskrona (Sweden). Political Studies vol. 55 no.1; 113-132.

▪ *Lahti (Finland)*

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The Lahti Region (Region of Päijät-Häme) is situated in the Province of Southern Finland, about 100 kilometres northeast from Helsinki. The region is constituted by twelve municipalities, and has about 200.000 inhabitants in total. The city municipality of Lahtis, together with four neighbouring municipalities, holds some 150.000 inhabitants. This makes it the fifth most populous urban region of Finland. Lahtis

municipality itself boasts some 100.000 inhabitants. There is only one other town in the region, Heinola, while the remaining part of the region is predominantly rural.

During the 2000s, the strategic, functional position of Lahtis have improved. Major investments in railway and highways have moved Lahtis into the urban fringe of the greater Helsinki region. A new railroad opened in 2006 has reduced the commuting time from Lahti to Helsinki from 80 minutes to 45 minutes (one-way).

Although not hosting a proper university of its own, Lahti has developed a strategy of networking by which it seeks to strengthen collaboration between different educational institutions that are located in the region. Several of these are departments or divisions of other universities (Harmaankorpi et al., var. years) Research and development is being carried out in the region at the Lahti Centre for University Expertise (consisting of Helsinki University of Technology Lahti Centre; Lappeenranta University of Technology; University of Helsinki, Palmenia Centre for Research and Continuing Education; and University of Helsinki, Department of Ecological and Environmental Sciences), at Lahti Polytechnic, at the technology centre Neopoli, in the Centre of Expertise Programme, and in the Plastics Development Centre in Nastola.

Figure 3: The Lahti region

The Lahti Region was affected strongly by the collapse of the Soviet Union and by the recession in the early 1990's. In 1990 there were 90,370 jobs in the region. The number of jobs diminished over the following couple of years, meaning that in 1993 there were fewer than 70,000 jobs in the Lahti Region and the unemployment rate stood at > 25%. Since then the number of jobs has slowly increased, and was 79,138 in 1999.

During the recession the value of production fell particularly strongly in the manufacturing industries, particularly in mechanical engineering and in furniture.

Local cluster history

The only industry that can be identified as a cluster – although only based on employment numbers – is the furniture industry. Employment in furniture production in the Lahti region was six times the national average in Finland in the early 2000s. Due to the lack of strong relations to HEIs, R&D institutions and local suppliers/customers we are, however, more talking of an industry concentration than of a regional cluster.

Local knowledge-intensive cluster: the university network

In a dynamic economic environment, the Lahtis region is attempting to integrate know-how to gain competitive advantage. In the case of the university network, the different university units will collaborate and compound their know-how in order to create new services and products, which they are unable to create alone.

With the contribution of the City of Lahti, four university units, belonging to three different universities, have been established in Lahti, that is the Helsinki University of Technology Lahti Center, Lappeenranta University of Technology Lahti Unit, Palmenia Centre for Research and Continuing Education at University of Helsinki, and University of Helsinki Department of Eco-logical and Environmental Sciences. This networked university entity is called the Lahti University Network. The university units operating in the Lahti region are affiliates of their main universities, and independent in their relation to the Lahti University Network. The agreement between the City of Lahti and the three universities to form the Lahti University Network was signed in November 2001.

Local cluster policies

In Lahti, the university units have so far concentrated mainly on continuing education programmes and specific regional development projects, aimed at servicing the working-age population. In addition, the region has invested a lot of resources in developing the regional innovation infrastructure further. The Lahti Science and Business Park (LSBP) was opened in 2003, to act as a knowledge broker between various R&D actors. In addition to provide business services to tenant firms, LSBP operates in tandem with the regional development programme, the Finnish Centre of Expertise programme and the subregional governance office in order to create a productive framework for business support at the regional level.

The combined effort has resulted in a core process focus and new methods to improve on five regional dynamic capabilities: leadership capabilities, visionary capability,

learning capability, networking capability and innovative capability. Dubbed the Regional Development Platform Method (RDPM) for regional innovation and development (see Harmaakorpi 2004), the strategic networking approach is proving productive in strengthening regional development strategies as well as strategies for strengthening regional HEIs.

Territorial scope of current clusters, and functional relations with MEGAs, other BSR cities

In terms of knowledge production, the main investments of financial and human resources is clearly in strengthening the higher education potential in the region, and by improving the skills, competencies and know-how of the general population. The functional relations, and the territorial scope of current industrial and sectoral development implies that Lahtis thus remain strongly directed towards strengthening the relations to the greater Helsinki area, and to neighbouring university cities such as Lappeenranta.

The city of Lahtis is currently on an internationalisation endeavour, seeking to brand itself as a major cultural and sports city. This has so far has little impact in promoting new functional relations to other BSR cities beyond the usual suspects (the Nordic friendship cities of Ålesund (NO) and Västerås (SE)).

References

Harmaakorpi, V. (2006): "Overview of the innovation system in Lahti – main actors, success factors and bottlenecks" Paper presentation (November 30).

Harmaakorpi, V. (2004): Building a competitive regional innovation environment – the regional development platform as a tool for regional innovation policy. PhD Dissertation, Department of Industrial Engineering and Management, Helsinki University of Technology.

Harmaakorpi, V. and T. Tura (2005): "Practice-based innovation activities and network-facilitating innovation policy"

Niukkanen, H., V. Harmaakorpi and L. Hennala (2002): "Increasing regional competitiveness by network strategy case. The strategy process of the Lahti University Network". Paper presented at the 42nd Congress of the European Regional Science Association (ERSA) Dortmund, August 27-31.

Pekkarinen, S., V. Harmaakorpi and H. Laakso (2002): "Lahti Region: Economics, Industrial Structure and Regional Development Organisations". Institute for Regional Economics and Business Strategy, Helsinki University of Technology (Lahti Centre).

- ***Triangle Region (Denmark)***

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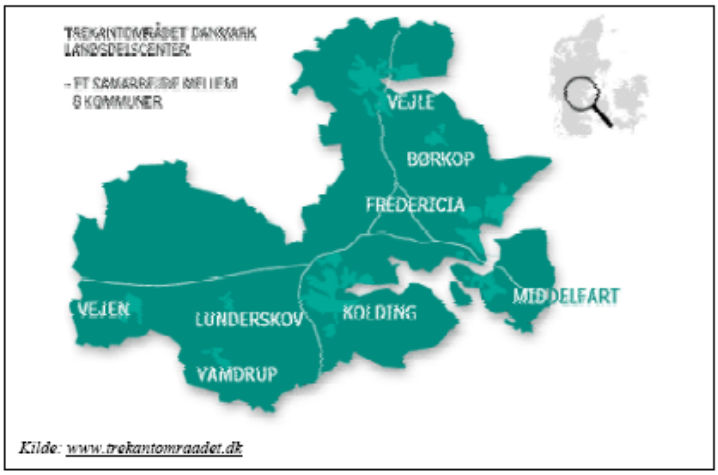
The triangle region is located at a road and railway hub west of Lillebælt. The proximity of motorways, harbours, airports and railways has made the region well connected to the rest if Denmark as well as to Germany and the rest of Northern Europe. As early as in the 1960s the concept of a triangle region (Kolding-Fredericia-Vejle) was launched as an urban planning concept describing an urban growth area in Southwestern Denmark to balance the dominating urban growth area of Copenhagen (Andersen 2002).

Until the late 1980s the regional collaboration in the emerging triangle region was mainly driven by local enterprises, as they faced increasing international competition. Collaboration in regional industry networks were developed in order to attract skilled manpower. In 1991 the mayor of Kolding municipality proposed to formalise an urban network collaboration between six neighbouring municipalities – Lunderskov, Vejen, Vamdrup, Kolding, Fredericia and Middelfart. The objective of this string city cooperation (*Båndbysamarbejdet*) was to harness economies of scale and to introduce the string city as a regional brand. The collaboration was formalised in 1992.

In the 1992 White Paper on Spatial Development, "Denmark towards the year 2018", the Danish Ministry of the Environment included the string city as one of eleven examples of metropolitan regions. In 1993 the Danish Minister of the Environment dubbed the string cities collaboration a national demonstration project in urban networking. The demonstration project was identified as 'The string city collaboration Triangle region 1993-1995' (Tolstrup 2006), and expanded to include the municipalities of Vejle and Børkop as well.

A separate Triangle region secretariat was set up in 1994 and in 1995 the document "The Development Perspective for the String City Co-operation" was presented, setting out the long-term objectives for the regional development of the territorially more inclusive Triangle region.

Figure 4: Map: the triangle region prior to the municipal mergers of 2007



The Triangle region collaboration culminated preliminarily with the presentation of a first common physical planning strategy for the eight municipalities in 2002: 'A strategy for the Triangle region as a regional centre 2002-2013'. It constitutes the foundation for territorial planning in the present Triangle region.

The Triangle region has currently evolved into a regional brand covering the historical inter-municipal collaboration between what by 2007 has expanded to eight municipalities - Vejen, Vamdrup, Lunderskov, Kolding, Fredericia, Middelfart, Børkop and Vejle. Since the municipal mergers following the regional reforms of 2007, the Triangle region today again covers six municipalities with a total population approaching 350,000. The three main towns are Vejle, Kolding and Fredericia which each in 2007 had a population in the vicinity of 50,000 inhabitants. As a result of the municipal reforms the population of Vejle municipality has grown significantly, as has Middelfart and Vejen.

In 2000, the Triangle region was identified as one of seven regional centres (akin to urban regions such as Århus and Aalborg) – the only proper polycentric region (network of SMESTOs) to obtain such a national status.

Local cluster history

The local cluster was incepted in the 1880s with the conjoint development of a process as well as a product invention: cooperative dairies and centrifucation technologies. During the last 120 years, process technology innovations and market developed has shaped the evolution of local production clusters and local cluster dynamics. From dairy produce thru foodstuffs to stainless steel process equipment, the local cluster has taken new shape. The cluster is thus characterised by a long history of local co-operation.

The stainless steel cluster in the Triangle region currently hosts some 220 firms with some 6.000 employees. The total annual turnover of these firms amounts to some DKR 4 billion (€ 550 million) annually. Most of the firms are small and medium-sized. 24 of the enterprises produce products for the professional market, whereas the remainder of the companies are sub-suppliers to these end producers in one way or another. Three multinational companies are present in the local cluster – GEA, APV Baher and Alfa Laval. Combined, these three companies hold almost 80% of the global market for dairy equipment. The main competitors in dairy equipment are located in Italy, the US and in Southern England

Local knowledge-intensive cluster

The triangle region constitutes a low-technology, densely located industrial cluster. It is bound together by a common technological system (process technology related to liquid foodstuffs) and an abundance of social capital. Several HEIs are located in the cluster, including Kolding College of Technology, Kolding Biotechnological Institute, Kolding design School and Fredericia School of machine Operators. Although the cluster is engineering-intensive, it also has well-functioning relations to knowledge producers located in other parts of Denmark, such as RISØ (National Laboratory of Sustainable Energy Research) and the Technical University of Denmark (DTU). RISØ is located in Roskilde and the DTU in Copenhagen.

Local cluster policies

While the Triangle region can boast a high concentration of firms in stainless steel equipment production, as well as transportation and distribution services, the region is under-represented in R&D, higher education institutions and creative industries. In order to broaden the economic base of the region, the local authorities are making a conscientious effort of improving the potential of the local and regional educational institutions. The triangle region is a region of large in-commuting, and is striving to become a unified functional labour market area. A central element of improving on current cluster policies is to transform the regional HEI profile, hopefully by being able to establish Kolding as a university town itself. Currently, many smaller institutions of higher education are located in Fredericia, Kolding, Middelfart and Vejle. These units are part of a network of HEIs that include units located outside the Triangle region itself, but which also is of significance as they produce candidates that might take up work in the Triangle region through commuting.

The Triangle region is also seeking to strengthen the cooperation with the Southern Danish University, which has HEI units in neighbouring municipalities in Southern Jutland and on Funen.

The triangle region has set up a long range of formal and informal fora to strengthen various dimensions of regional social and economic processes. Under the umbrella of the Triangle region five regional industry associations are in operation: the transportation forum, the IT forum, the foodstuffs club, the steel group and even a Danish Food Innovation Network. These association seek for their part, to improve the cooperation between specialised educational institutions, R&D units and the local business community.

Territorial scope of current clusters

The large in-commuting displays that the territorial scope of current clusters therefore expands the Triangle region proper, and includes/influences the neighbouring areas, as well.

Functional relations with MEGAs, other BSR cities

The triangle region has naturally strong functional relations with Århus and the Danish Capital region, not least due to the close links with the Technical University and RISØ.

With respect to other BSR cities, several of the municipalities of the Triangle regions have friendship city agreements with towns in the BRS region:

- Fredericia (with Kokkola (FI) and Siauliai (LIT))
- Vejle (Borås (SE), Mikkeli (FI) and Jelgava (LAT))
- Kolding (Örebro (SE), Lappeenranta (FI) and Panevézys (LIT))

The functional relations are typically more embedded with friendship towns in the other Nordic countries. Friendship town relations with cities in Latvia and Lithuania have, for instance been established as recently as in the 1990s.

References

Andersen, M. (2002), Trekantby, båndby og bycircel -en historie om kommunesamarbejdet I trekantområdet. [Triangle city, string city and circle city – the story of municipal cooperation in the Triangle region]. In B. Andersen et al. (eds.) Vejle Amts Årbog 2002.

Christensen, P.R., A. Cornett and K. Philipsen (1999), Innovations and innovation support for SMEs: the Triangle Region of Denmark. SMEPOL report no. 2 Centre for Small Business Studies, University of Southern Denmark.

Christensen, P.R. and K.B. Munksgaard (2002), Når mælk bliver til stål. Den rustfri stålindustri i Trekantområdet 1880-2002 [When milk is turned into steel. The stainless steel industry in the Triangle region 1880-2002]. Kolding: Trekantområdets Erhvervsudviklingsprogram.

Mahler, S. and M. Nordestgaard (2003), Udvikling og demokratisering af arbejdslivet i den rustfri stålindustri i Trekantområdet [Development and democratisation in labour relations in the stainless steel industry in the Triangle area] Student paper, Technology and Society course Roskilde University.

Santisteban, M.A. (2006), "Industrial clusters in Spain and Denmark: contextualized institutional strategies for endogenous development" Paper prepared for the 2006 European Urban and Regional Studies Conference in Roskilde (September).

Tolstrup, A. (2006), En finger på plankulturen [Taking the pulse of the planning culture]. Master thesis (Civic Engineering) Department of planning, Faculty of Natural Sciences and Technology University of Aalborg (July).

II. Southern Arc

- ***Teltow/Stahnsdorf (Germany)***

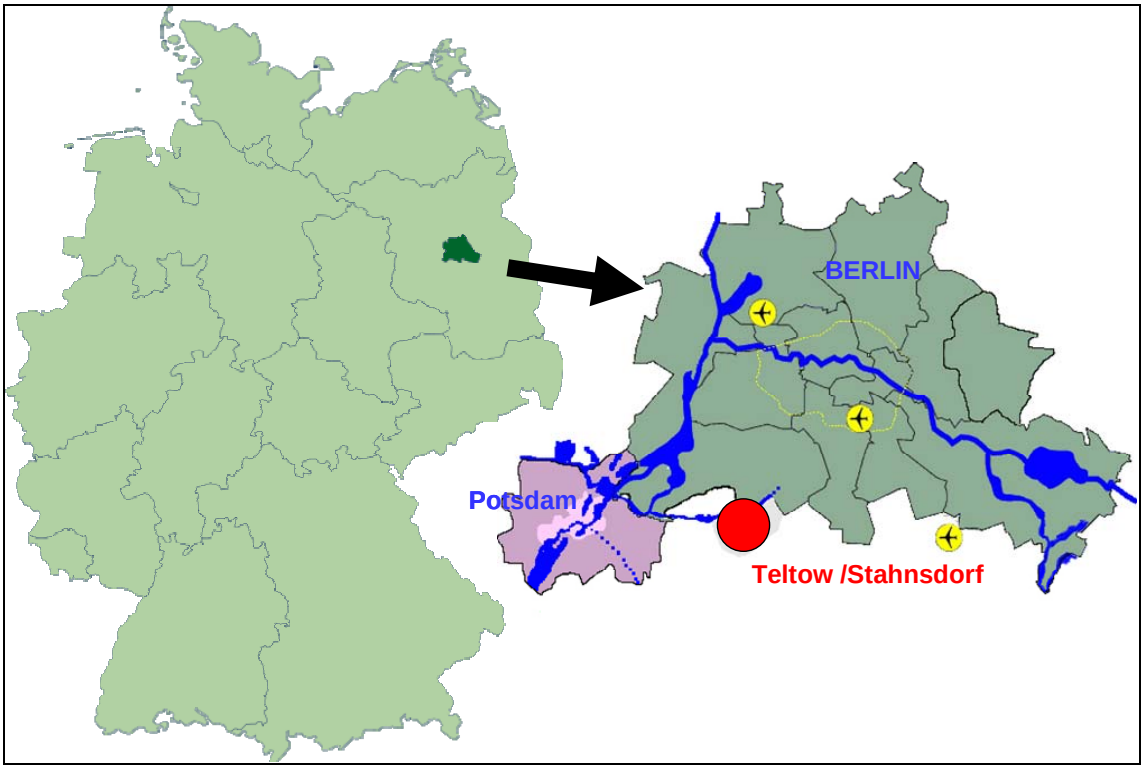
Author: Regionomica

on behalf of the Federal Office for Building and Regional Planning (BBR)

General Description and Economic Development

Teltow and Stahnsdorf are located in the southwest of Berlin in the State of Brandenburg. Teltow has 20.556 inhabitants (2007)[1] and Stahnsdorf 13.772 inhabitants. Since 1972, Teltow, Stahnsdorf and the community Kleinmachnow compose a local authority association. While Kleinmachnow is mainly known as a residential area, innovation orientated and skill-intensive technology companies have been established in Teltow and Stahnsdorf.

Figure 5: Location of Teltow-Stahnsdorf-Kleinmachnow in the southwest of Berlin



Source: www.wikipedia.org, edited and modified

The economic development of Teltow and Stahnsdorf started more than 100 years ago by the construction of the Teltow canal in 1906 which pushed the industrial development of the region, and particularly of Teltow. Furthermore a patent and

research institute for cellulose and polymer research was opened in 1921 in the city district Teltow-Seehof. The Institute of Fibre Research in Teltow, founded by the Academy for Science in 1949, was the basis for the later development of the chemical fibre industry in the German Democratic Republic.[2] After 1960, Teltow und Stahnsdorf became a location for micro and semi conductor companies of national importance with more than 12.000 jobholders. The biggest companies were the state combine for electronic devices "Carl von Ossietzki", the neighbouring control facility and the electronics semi conductor company in Stahnsdorf.[3]

After the reunification of Germany in 1989/90, the industrial development broke down due to the closure of large industrial firms. In the following years, the traditional industry location changed into a location for future-oriented technology branches. A number of companies and research institutes in the field of polymer and plastics settled down in the former industrial area. This economic development has led to an increasing number of jobs in both communities since 1990. The number of jobs in Teltow has been multiplied by ten, with the current unemployment rate being one of the lowest in East Germany.[4]

Current Economic Structure

Today, Teltow and Stahnsdorf are known for their research and economic institutions beyond regional borders. They have the highest concentration of innovative companies in Brandenburg[5] which can be seen in the above-average number of financially supported technology firms. A number of biotechnology and medical technology companies are located especially in Teltow. Furthermore, the Ministry of Economics of Brandenburg has identified some competence fields in Teltow / Stahnsdorf with special characteristics such as supra-regional or international orientation of companies, cooperation among companies and research institutes or universities, common development of new products and new markets as well as an above average linkage of enterprises at each stage of the value chain.[6] Many enterprises acting at international

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1 Population statistics, State Statistical Institute Berlin-Brandenburg, status 31. Oktober 2007

2 Märkische Allgemeine: Rund um den Kunststoff. Teil 21 /Tek km 13,70: Institute in Seehof. 08.02.2006

3 Schmidt, Thomas (2006): Eine Stadt braucht eine Mitte. In: Städtebauförderung aktuell. Newsletter für das Land Brandenburg. Ausgabe 12, 12.2006

4 There are no recent data of the unemployment rate at community level. However, the regional unemployment rate of 9,9 % of Potsdam-Mittelmark is lower than in other regions in East Germany (Source: Federal Employment Office). Further Information on www.teltow.de/wirtschaft/standort/ and www.wirtschaft-am-teltowkanal.de/start/ (Status 03.03.2008)

5 Statement of Minster of Economy of Brandenburg. Press release from 28. July 2004 of the Ministry of Economics of Brandenburg, see http://www.mw.brandenburg.de/cms/detail.php?id=169607&_siteid=20 (04. March 2008)

6 Ministerium für Wirtschaft des Landes Brandenburg (2005): Neuausrichtung der Wirtschaftsförderung im Land Brandenburg, September 2007 or Brandenburg Economic Development Board (2007): VBN InnoReg. Strengthening Via Baltica Nordica Macro-Region through transnational Cooperation for Regional Innovation Promotion INTERREG IIIB. Analysis of the Regional Innovation System of Brandenburg according to the joint VBN InnoReg framework. Final version. Potsdam.

and supra-regional level have been established in four branch competence fields: biotechnology /life science, media/ information /communication technology (ICT), metal production /metal working /metal processing /mechatronics and finally, optics. The most important enterprises are listed below: [7]

- **Biotechnology/ Life science**: Key sectors are genomics and proteomics, molecular diagnostics, minimal-invasive medicine, pharma and laser technology, optics and telemedicine: WITA GmbH, LAROVA GmbH, Celon AG Medical Instruments (2. European Research and Production Centre of Olympus with approx. 30 employees), SOMATEX® Medical Technologies GmbH, getemed Medical and Information Technology AG (approx. 40 employees) and Ferropharm GmbH in Teltow.
- **Media/ Information and communication technology (ICT)**: International companies as for instance Deutsche Telekom AG (branch Northeast) and Vodafone D2 GmbH in Stahnsdorf as well as O2 (Germany) GmbH & Co OHG and Ferrari electronic AG in Teltow.
- **Optics:** Focus on optical equipment and measurement technology, laser technology and micro system technology: GF Measurement Technology, SMI SensoMotoric Instruments GmbH, NLG New Laser Generation, ADLARES GmbH und Elight Laser Systems GmbH in Teltow as well as AKTIV SENSOR GmbH, Highyag Laser Technology GmbH and Spectra-Physics GmbH in Stahnsdorf. Overall, there are approx. 12 innovative companies in of the fields of laser, measurement and communication technology with a total of more than 200 employees in the region Teltow-Stahnsdorf-Kleinmachnow.
- **Metal production, working and processing/ mechatronics:** A number of particularly small and medium-sized enterprises of metal working industries.[8]

Furthermore, some research institutes, specialised in polymer and plastic research, have been established in the traditional science location Teltow-Seehof. This is the case for the Institute of Polymer Research in the GKSS-Research Centre, the branch of the Fraunhofer-Institute for Reliability and Micro Integration (IZM) specialised in Polymer Materials and Composite, the Institute of Thin Film Technology und MicroSensor Technology e.V. (IDM) and the Research Institute of Bioactive Polymer Systems (BIOPOS). Altogether more than 130 technical and scientific employees work in the these institutes.[9]

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[7] A complete inventory of companies and employees in the knowledge-based branches doesn't still exist. Actually an Integrated City Development Concept for Teltow and a Location Development Concept for Teltow / Stahnsdorf / Kleinmachnow are developed. The evaluation of the economic structure will be part of these concepts.

[8] Jens Klocksin und Sung-Ho Jeong (2006): Future of the region Teltow/ Kleinmachnow/ Stahnsdorf. A study of the profile, development potentials and chances of intermunicipal cooperation of the region. Teltow, Kleinmachnow, Stahnsdorf.

[9] Märkische Allgemeine: Rund um den Kunststoff. Teil 21 /Tek km 13,70: Institute in Seehof. 08.02.2006

Development Background

According to a statement of the economic development agency of Teltow, the change of Teltow from an industrial to a technology and science area was less the result of a specific economic development policy but rather the consequence of "fortunate circumstances" [10]and advantageous local conditions :

- **Start up- and innovation potentials**: Due to the shutdown of large enterprises after the reunification of Germany, a great number of engineers lost their jobs. They represented a potential for the development of knowledge-based economy and for fostering innovations. In comparison to other regions in East Germany, most of the unemployed qualified workers did not emigrate to other regions and did not continue working in other sectors. Most of them preferred to stay in Teltow /Stahnsdorf with some of them founding their own companies. The existing network structures and contacts between companies and research institutes were in favour of this development.
- **Traditional research location:** The economic development was supported by the proximity to and the cooperation with research institutions. Already in the German Democratic Republic, the Institute for Polymer Chemistry of the Academy of Sciences had traditionally good relations to the local companies. After the reunification, it has been integrated into the German research environment and other research institutes have been established nearby.
- **Geographical advantages:** Teltow and Stahnsdorf are located close to the German capital Berlin,[11] to Potsdam, the capital of the State of Brandenburg and to Ludwigsfelde, famous for biotechnology[12]. Both cities benefit from a good connection with Berlin by public transportation (S-Bahn) and motorways. Companies and inhabitants profit at the same time from the economic and scientific infrastructure of Berlin as well as from the high recreational value of the region. The number of commuters between Berlin and Brandenburg clarifies that a lot of people living in Berlin and Potsdam work actually in Teltow/Stahnsdorf. Altogether, the entire region Potsdam-Mittelmark, has the highest rate of commuters (45 %) travelling from Berlin to Brandenburg which notably is due to the number of people coming to Teltow /Stahnsdorf, [13]

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[10] Statement of Sören Kosanke, Economic Developer of Teltow, telephone interview on 10. March 2008

[11] Teltow is the nearest located community to Berlin of all commnunites in Brandenburg. Therefore it is called "suburb" of Berlin (Sören Kosanke, Economic Developer of Teltow)

[12] Schmidt, Thomas (2006): Eine Stadt braucht eine Mitte. In: Städtebauförderungaktuell. Newsletter für das Land Brandenburg. Ausgabe 12, 12.2006

[13] Bogai, Dieter; Seibert, Holger und Doris Wiethölter (2007): Pendlerbericht Berlin-Brandenburg 2006. Arbeitskräftemobilität in den gemeinsamen Branchenkompetenzfeldern Berlin Brandenburgs. IAB Berlin-Brandenburg 02/2007.

Economic Development Policy

As mentioned before, the positive economic development has not been caused by specific settlement policies. However, the economic development of Teltow/ Stahnsdorf was supported by public activities. Foundations and business start-ups have been supported in Teltow by technology-oriented new business centres (Gründerzentren). In 1991, the first innovation and new business centre on technology in Brandenburg was created: The Technology Centre Teltow (TZT). The TZT supports more than 60 companies in the fields of information and communication technology, automation technology and electronics, biotechnology and environmental technology. By now, 300 jobs have been created. Moreover, approximately15 technology firms in laser technology, optics, biotechnology and computer interaction have been established on an area of ca. 6.500 sqm. In addition, 200 jobs have been produced in the new ELIGHT-Technology-Center. Since 1992, enterprises located in one of these new business centres were repeatedly awarded the prize for innovation of the region Berlin-Brandenburg.[14]

Since 1st September 2007, financial incentives from the Ministry of Economics of the State Brandenburg were offered to investments and locations of companies in the four local branch competence fields (biotechnology, optics, metal production, metal working and metal processing/ mechatronics and ICT). The new development strategy also supports the networking of enterprises and research institutes in Berlin and Brandenburg in the described competence fields.[15] Currently, there are cluster initiatives specialised in optical technology (OpTecBB e.V), media (Medienboard Berlin-Brandenburg), biotechnology and medical technology (BioTOP) as well as in solar technology (research field of GKSS) in which enterprises from Teltow and Stahnsdorf are members. The development of a further branch network for laser and laser application is under preparation.[16]

Conclusion

Finally, the change of Teltow/Stahnsdorf from an industry-based to a knowledge- and technology-intensive location in the past 20 years mainly results from a traditionally strong economic development:

- The construction of the Teltow canal in 1906 was the main precondition for the regional industrial development. In the German Democratic Republic, Teltow

[14] Information on www.teltow.de/wirtschaft/standort/ and www.wirtschaft-am-teltowkanal.de/start/ (status 03.03.2008)

[15] See Ministry of Economics of the State Brandenburg (2005): Neuausrichtung der Wirtschaftsförderung im Land Brandenburg. September 2007.

[16] Informations of ZukunftsAgentur Brandenburg GmbH: http://www.zab-brandenburg.de

/Stahnsdorf were of national importance for their role in micro and semi conductor technology, employing qualified workers.

- At the same time, a research institute of cellulose and chemical fibre was opened in Teltow laying the fundament of further development.. After the end of the German Democratic Republic, the existing Academy of Science was integrated into the German research environment. The research has been continued within other notable research institutions in the field of polymer and plastics (e.g. Frauenhofer Institut).
- After reunification, the economic development was strengthened by the proximity to Berlin and to the state capital Potsdam, the existing network structures, the availability of qualified workers and resettlement aid for innovative companies and start ups.

- ***Lüneburg (Germany)***

Author: Holger Manthey, Regierungsvertretung Lüneburg, translated by Isabelle Manz (Federal Office for Building and Regional Planning, BBR)

Historical Evolution

Lüneburg is a medium sized city with approximately 72 000 inhabitants, situated in the north of Germany, more precisely in Lower Saxony. It is located 50km southeast of the German metropolis Hamburg. Lüneburg is the centre of public administration of the rural district of Lüneburg having about 176 000 inhabitants (including the City of Lüneburg). From 2007 to 2013, Lüneburg will be entitled to EU-funding within the Objective 1 programme covering the former government region Lüneburg with a total of 1.8 m inhabitants at the NUTS 2-level. Lüneburg is thus the only territory in West Germany which has been defined as regional convergence area.

In the 16th century, Lüneburg gained wealth due to its salt production and its salt exportation to the Baltic Sea region. That time, Lüneburg was a big city in former times, counting approximately 14 000 inhabitants. Today, the city's historical floor plan and numerous buildings of cultural and historical importance testify its past importance such as for instance the medieval town hall, the picturesque dockland area, the monastery Lüne and three churches of brick gothic architecture. By 1700, when the salt production became subject to competition, the economic development of Lüneburg began to stagnate.

In 1847, the construction of a new railroad track from Celle to Harburg, passing by Lüneburg, fostered economic development again; in the year 1872, the railroad track - crossing the Elbe River - was prolonged to Hamburg. Before WWII, Lüneburg was a small-sized town possessing a small and medium industry, representing a central place for administration, justice and education. Moreover, Lüneburg hosted numerous caserns. Population development was relatively low: in 1939, Lüneburg counted only approximately 35 000 inhabitants.

Following WWII, population development increased due to the immigration of refugees and German re-settlers. Lüneburg had 57 000 inhabitants in 1956. This number remained relatively stable until the end of the 1980s (1987: 59 000 inhabitants). In this period, new companies were created, partly by company holders from Central and East Germany. However, the role of Lüneburg remained unchanged. The Regional Planning Law of Lower Saxony defined Lüneburg as a centre of middle order.

Economic Development After 1989

After the fall of the Berlin Wall and the reunification of Germany in 1989/1990, a new chapter of economic development began for Lüneburg. In 1989, the college of education established in 1946 with a total of ca. 2000 students became a university possessing faculties of educational sciences, economics and cultural sciences. In 2005, the university was combined with the college of education Nordostniedersachsen (North East Lower Saxony) located in Lüneburg since 1978. Thus in 2008, the number of students of this recently founded university accounts for 9 000 students. The Leuphana University, as it is called, has faculties of Education, Cultural and Social Sciences (I), Economics, Law and Behavioural Sciences (II) and Environment and Technology (III).
Two third of the caserns were transformed within the framework of conversion processes, ie. an industrial park was built in the area of the former Lüner casern. The area of the former Scharnhorst casern was also transformed, hosting i.a. the Leuphana University. Today, a part of the former Schlieffen casern is used by several public authorities. This is why there are only 1 800 soldiers stationed in Lüneburg whereas in former times, there were about 5000. Furthermore, new area for building and industry was available.

The industrial area at the docklands of the Elbe side canal which exists for a long time was also settled by new companies. From 1990 on, Lüneburg has changed from a town of garrison and administration to a town characterised by service and industry. This evolution is notably due to the shutdown of caserns, the creation of new industrial real estates, the extension of the university as well as the conservation, concentration and

extension of service and industry structures. In addition to excursions and city tourism, a new kind of tourism has developed in Lüneburg: seminar tourism. In 1994, Lüneburg was defined as a centre of upper order by the Regional Development Programme of Lower Saxony.

Development of Industry, Knowledge Based Economy Fields and Infrastructure

Traditionally, Lüneburg has a role of service and supply for a middle-sized and large area. Furthermore, it possesses business, industry and tourism. These fields have been developed successively and are partly linked to each other. In the 1980s and 1990s, some traditional industrial companies shut down or reduced their activity significantly. This was the case for a 1000 year-old saline shut down in 1980, an iron and metal foundry and the Kronenbrauerei (brewery).

The pre-existing administrative services - such as for instance those of the rural district, the (higher) administration court, federal and regional public authorities - were both expanded physically and strengthened in their competences. Additionally, there are synergies between the technological branches of the University of Applied Sciences forming part of the Leuphana University and companies of engineering, electronics etc. in Lüneburg. The companies of food have been consolidated and cooperate with other companies throughout Germany. This is also partly true for the two companies of fashion business. Furthermore, new companies were created while existing companies were developed. These companies cooperate with each other in Lüneburg and its surrounding area. Moreover, they collaborate with the respective technological faculty of the Leuphana University and are integrated in a nation- or world-wide network of economic relations.

Specific advantages of Lüneburg and its surrounding area are notably the geographical proximity of Hamburg and the good transport connection. The port of Hamburg was in favour of the development and settlement of food producers as it offers a high performing service infrastructure which enables the access to markets of exportation and commodities. The University of Applied Sciences Lüneburg (at present, forming part of the Leuphana University) and the University Hamburg-Harburg (Hafen City University) contributed also to the locations of companies specialised in automation engineering and mechanical engineering.

Examples for the three main industrial production sectors mechanical engineering/ automotive supply industry/ automation technology/ clothing trade/ food industry are as follows:

Clothing trade

- Roy Robson, an international life- style brand for men wear, settled to Lüneburg in 1944.
- The Lucia Corporation is an internationally operating fashion company. Although having its head office in Lüneburg, the company produces abroad. Some of their brands are LeComte, clasen.

As they belong to an "old" industry, these enterprises need to adapt regularly to new developments, implying the change of ownership and periods of economic weakness in the past years.

Mechanical engineering/ automative supply industry/automation

- Lüneburg is a location of Johnson Controls. The manufacturer produces interior trims and electronics as well as supplies these automotive parts to companies all over the world.
- The H.B Fuller manufacture in Lüneburg is one of two factories located in Germany, producing hot melt adhesives. The H.B. Fuller Company is present in more than forty countries.
- The Impreglon Corporation, having its headquarter in Lüneburg, holds 15 manufactures in ten countries and is specialised in surface coating employed for automobiles, machines and manufacturing facilities.
- The Sieb & Meyer Corporation produces drive and control technology. The company's headquarter is in Lüneburg; several subsidiaries are in the USA and Asia.
- The Werum Software & System Corporation has been in business for more than forty years, developing software in the company's headquarter Lüneburg and in their German and American subsidiaries.
- PEDEU-TC being part of Panasonic Electronic Devices manufactures communication and high frequency technology. The company was founded in Lüneburg in 2000 and thus continued the tradition of the Panasonic (Matsushita) factory, producing and selling electro mechanical and high frequency technology

Lüneburg is too small to develop big clusters. All industrial branches form part of a larger trading area. In particular, the proximity of the Volkswagen factory in Wolfsburg

(ca. 100 km) plays an important role for the automotive supply industry. Mechanical engineering, vehicle manufacturing - automotive supply industry and automation respectively - are key industries of outstanding performance. Cluster management in Lüneburg is being developed. The promotion of economic development in the region of Lüneburg is closely related to the Süderelbe Corporation.

Food industry

- The DeVauGe Gesundkostwerk GmbH, founded in Magdeburg in 1899, is specialised in producing vegetarian food. The company's headquarter is in Lüneburg, another factory is located in Fulda.
- The Hochwald Nahrungsmittel-Werke GmbH is present in eleven locations in Germany with Lüneburg being one of them, producing the so-called Lünebest joghurt.
- The Pickenpack-Hussmann & Hahn GmbH is a company for refrigerated fish which operates throughout Europe.

A further field in which an approach for the development of clusters is observable is the food industry. Directed by the Süderelbe Corporation and associated with the rural districts of Lüneburg, Harburg, Stade and Lüchow-Dannenberg- all located in Lower Saxony- a regional cluster organisation has been created. Within the regional boundaries, about 80 food companies employ approximately 17 000 people, with one enterprise employing 20- 250 people. Companies employing less than 20 people have not been considered. The cooperation between these companies is primarily due to common issues such as the development of common facilities, energy prices, the concentration of food retailing, the common reaction on new legislative acts influencing the guarantee of origin and quality.
Common interests of involved companies are process optimisation and product development through an improved and cheaper access to special knowledge. This includes information used in information technology, packaging technology, and the handling of substances and additives.
However, the number of enterprises in this field is insufficient for long-term clusters. The creation of clusters thus implies cooperating with the city of Hamburg and its enterprises.

Working Together

Local services, public authorities, associations and enterprises are integrated into a dense network of personal and more or less institutionalised relations which shall foster the development of the city and the region. The most important networks are as follows:

- The metropolitan area of Hamburg is one of eleven metropolitan areas In Germany. It is composed of the Länder Hamburg, Lower Saxony, and Schleswig-Holstein. More precisely, it consists on the Free and Hanseatic City of Hamburg, eight rural districts situated in the south of the River Elbe in Lower Saxony and six districts situated in the north of the River Elbe in Schleswig-Holstein. The city of Lüneburg also forms part of this cooperation. The metropolitan area of Hamburg focuses on an internationalising strategy in order to meet international competition. Numerous projects in economy, logistics, tourism and further fields of spatial development shall help to achieve these goals.
- The Süderelbe AG is part of the metropolitan area of Hamburg. It consists on the district of Harburg, the Free and Hanseatic City of Hamburg and the rural districts of Stade, Harburg and Lüneburg in Lower Saxony. Furthermore, the city of Lüneburg is shareholder of the Süderelbe AG. The Süderelbe AG executes projects with growth potential as for instance, the network of regional enterprises and institutions, cluster and cross-section projects. Location policy, land use management, innovation, education, further education and qualification are fostered and coordinated at regional level - in the fields of logistics, mechanical and automotive engineering, maritime systems, food and chemistry.
- Since 1999, the RITTS (Regional Innovation and Technology Transfer Strategy) Lüneburg encourages cooperation in the former administrative district of Lüneburg including: the Chamber of Commerce and Industry of Lüneburg-Wolfsburg and Stade, the regional government representation Lüneburg, the European Office of Lüneburg, the Chamber of Crafts of Lüneburg-Stade, the Leuphana University of Lüneburg, the NBank (business development and investment bank), representations of rural districts and cities, job agencies, representations of communal business development and individual entrepreneurs.

RITTS offers events, projects and processes. At present, RITTS projects are the RITTS cooperation of communal business development, information and monitoring of the European Structural Funds period 2007-2013, the organisation of a round table on the issue of innovation and business development consulting, a series of conferences called "curious", and finally European Information organised by Europe Direct Lüneburg.

- E.novum is a university affiliated innovation and start-up centre offering large space for leasing or for events including service for young and innovative entrepreneurs.
- The Leuphana University Lüneburg is member of Gründercampus Niedersachsen (Lower Saxony). Gründercampus Niedersachsen consults academic company founder allowed to use university institutions after their start-up and to get fundings for their current activity.

- Lüneburg participates also in two Interreg Programmes - "North Sea Region" and "Baltic Sea Region" - funded by the European Union. Lüneburg is in particular associated with the following projects: FLOWS (Living with Flood Risk in a Changing Climate), Urbal (Cooperation between urban and rural development), BSME (Baltic Spatial Development Measures for Enterprise), the European Route of Brick Gothic (tourism project), Crossing Fences (valorisation of garden and parcs)
- Only recently, the city of Lüneburg has been re-labelled "Hanseatic City of Lüneburg" implying a new engagement in the Hanseatic League which aims at promoting the "new old" Hanseatic Cities as tourist destinations.
- Wirtschaftsförderung Lüneburg (business development) is a company and competence centre, specialised in consulting, for the rural und urban district of Lüneburg.
- Last but not least, Lüneburg has various international relations through its twin cities Scunthorpe (England), Naruto (Japan), Clamart (France), Ivrea (Italy), Viborg (Denmark) and Tartu (Estonia).

Perspectives

Cooperative activities are concentrated on the metropolitan area of Hamburg. In food industry, the focus is on cooperation with Lübeck. This cooperation could possibly become a cluster project in the Baltic Sea region. An impetus for such cooperation is e.g. an Interreg project on regional "Culinary Heritage" initiated by Sweden.

Further topics for cooperation may be: Transportation Logistics, Valorisation of the Lüneburg Inland Port, the development of city and nature tourism, education and continued education. The latter attempt to cooperate with Swedish middle level centres.

The existing network in food industry, automation technology and computer sciences might be developed as well. The existing e.novum might also be used as basis for the extension of university affiliated technology and start-up centres.

The project "Innovationsinkubator" has been conceived at Leuphana University but not been realised yet. It shall aim at developing the Leuphana- University Foundation as a core of innovation. Financed by the European Social Funds (ESF), Objective 1, it shall integrate the Leuphana University to an economic network at regional and international level. Finally, application oriented research and transfer projects between science, economics and administration are to be fostered in the area of technology, education, environment and Culture/Society.

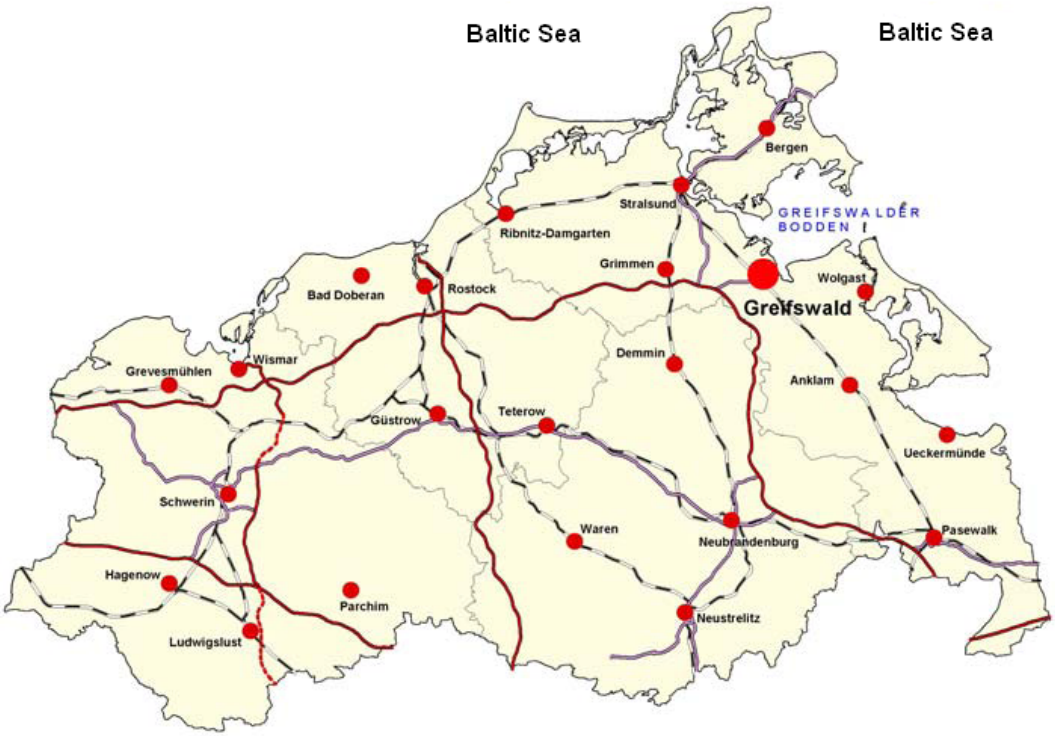
- ***Greifswald (Germany)***

Author: Jörn Hollenbach, Ministry for Transport, Building and Regional Development of Mecklenburg-Vorpommern, Schwerin, translated by Isabelle Manz (Federal Office for Building and Regional Planning, BBR)

"Tertiarisation defined as secular transition to a knowledge based society needs to be comprehended in the context of globalisation and revolutionised information technology at the beginning of the 21st century. The new hierarchy of international division of labour is gradually defined by the capacity of actors from the same economic area to create networks and to organise collective learning processes (translation into English Braun 2003, p.222)." Knowledge becomes the most important location factor. The identification of areas possessing such resources determines economic performance and societal development within a region.

In the SMESTOs project, success models for small and medium sized towns as actors of a knowledge society are examined and illustrated by concrete examples. The Hanseatic Town of Greifswald may be regarded as such an example. The Hanseatic Town of Greifswald is situated in the North East of Mecklenburg-Vorpommern, a federal state. At present, approximately 53 000 inhabitants live in Greifswald (data from 2006).

Figure 6: Location of the University and Hanseatic Town of Greifswald within Mecklenburg-Vorpommern



In 2007, the consulting group Prognos elaborated the *Atlas of the Future 2007* on behalf of the magazine "Handelsblatt". This *Atlas of the Future 2007* listed the competitiveness of the entirety of rural (439) and urban districts in Germany. This study showed that some towns in East Germany are particularly dynamic with Greifswald, Leipzig and Magdeburg being top climbers. In 2004, Greifswald scored best with regard to growth, innovation potential, demographic development and decline of unemployment. Greifswald advanced in this ranking from position 325 to 101. This development is said to be due to the considerable increase of medical research and development. Furthermore, the Max-Planck-Institute of Plasma Physics has been extended and the most modern university hospital in Germany has been built.

The positive development is thus caused by knowledge intensive economy based on the local university. The University of Greifswald was founded in 1456. The regional science can be an impetus for the development of knowledge based clusters. With 11 499 students of five faculties, the University indeed forms the back bone of the knowledge based enterprises in Greifswald.

In a first step, we shall demonstrate the economic relevance of the university and its impact on the Hanseatic Town of Greifswald by using some indicators. May the university be regarded as the core of a network between producers, providers, research institutions etc.? Which structures have been developed in research? Is it possible to quantify this process? Another relevant point in this context is the construction of the nuclear power station "Bruno Leuschner" in Lubmin, near Greifswald. The construction was started in 1967. Eight generating units of Soviet series construction, having a capacity of 440 megawatt each, should be built. In the years 1989/90, the shutdown of the power generation was decided with block 1 of the nuclear power station in Greifswald being the last unit which was off-net (on 18 December 1990). Today, more than thousand employees of Energiewerke Nord still work on the deconstruction of the nuclear power station.
The nuclear power station impacts on a knowledge based economy as it generated the setup of scientific capacity in plasma physics.

The statistic of employees liable for social insurance working in the urban district of Greifswald shows the importance of the university:

- Number of employees at work place: 21,314 (June 2006)
- Total number of employees at the University of Greifswald (UoG): 4,945 (December 2006)
- Number of Scientists and artists at UoG: 2,271 (December 2006)

Consequently, every fourth is employed at the University of Greifswald and approximately 10% of employees belong to knowledge based activities. This data may thus be considered as an indicator for knowledge based society. Furthermore, the University influences local knowledge intensive clusters and is integrated in a network with partner of the Hanseatic Town of Greifswald, as illustrated below:

Biotechnikum Greifswald

Biotechnikum offers laboratories and offices to innovative companies in biotechnology or biomedical sciences. At present, the Biotechnikum hosts approximately 30 enterprises, research institutes and consulting firms (ie. Biometic GmbH). The Biotechnikum forms part of Biocon Valley® Initiative, an intersectoral network in modern life science and health industry. Within the framework of Clustermanagement Gesundheitswirtschaft Mecklenburg-Vorpommern (Clustermanagement Health Industry), Biocon Valley® coordinates a pilot project in Greifswald integrated in the Masterplan Gesundheitswirtschaft (health industry) Mecklenburg- Vorpommern 2010. TransferNetzwerk Community Medicine supports this initiative and promotes the transfer of competence, experience and results, going from the scientific branch of demographic health research to health industry. Epidemiologic analysis provides information about the health situation and the need for prevention of a specific population group in Mecklenburg- Vorpommern.

Technologiezentrum Vorpommern (TZV)

Technologiezentrum Fördergesellschaft mbH Vorpommern (Technology Centre of Western Pomerania) supports companies in their settlement by providing modern infrastructures and competent consulting. At present, 54 companies, operating ia. in research and development, energy and environmental services and sensor technology, are represented in TZV. TZV is creating a national network promoting application-oriented research and development activities as well as technology transfer in plasma technology (Balticnet-Plasmatec), with the target being the creation of jobs in this field. The federal state of Mecklenburg- Vorpommern also supports technology oriented business start-ups by the project "TechnoStartup MV".

Leipzig Institut für Plasmaforschung und Technologie e.V. (INP)

The INP is one of the leading institutes of applied basic research in low temperature plasma and their technological application. Plasma sources, micro and nano- dispersed materials or environmentally relevant plasma processes are chosen as major priority. A complete value chain (idea→prototype→product→market) was first cooperated in

cooperation with hived enterprises. Meanwhile third-party funds of almost three million Euros have been raised. INP employs 120 people at present.

Max-Planck-Institute of Plasma Physics (IPP)

IPP investigates the physical basis for a nuclear fusion power plant. IPP's work is integrated in the European fusion programme. IPP employs 433 people in Greifswald.

International Max-Planck-Research-School

In association with IPP and the Institute of Physics at the University of Greifswald, International Max-Planck-Research-School has been founded as an interdisciplinary school with a focus in plasma physics.

Stiftung Alfred-Krupp-Kolleg Greifwald

Etablished by Alfred Kupp von Bohlen and Halbach Stiftung, the federal state of Mecklenburg-Vopommern and the University of Greifswald, the foundation aims at fostering science and research. The foundation runs the Alfred-Krupp Kolleg in order to support the exploratory focus and interdisciplinary cooperation at the University of Greifswald.

Friedrich-Loeffler-Institute (FLI) - Federal Research Institute for Animal Health

FLI is an independent federal office supervised by the Federal Ministry of Food, Agriculture and Consumer Protection. At present ca. 500 employees do research in the area of infectious disease of agricultural animals and related sciences. In this context, we may also consider Riemser Arzneimittel AG, a medium sized pharmaceutical company. Riemser Arzneimittel AG collaborates with INP and FLI. It employs currently 420 people and has a turnover of 56 million Euros.

Institute of Marine Biotechnology e.V. (IMaB)

IMaB was founded by members of the University of Greifswald. Its aim is to promote research and development of marine biotechnology. The research approach is highly complex, containing i.e. the development of active substances on the basis of marine natural products.

Consequently, it is justified to speak of knowledge based clusters in Greifswald. However, it is the involved actors that determine if and how such a cluster works. A cluster can only unfold its full potential if all components work together. In other words, university and research institutions (science), innovative enterprises

(economy), practical oriented education (foundations) and economic development need to cooperate with each other. Positive examples in health industry have been illustrated throughout the report.

References

Braun, G: *Theoretische Grundlagen des Tertiarisierungsprozesses und seine raumstrukturellen Konsequenzen für den Nordosten Deutschlands*, In: Braun, G. (ed.) et al. Der Dienstleistungssektor in Norddeutschland-Entwicklungsproblem oder Zukunftschance, Arbeitsmaterial der Akademie für Raumforschung und Landesplanung No. 304, Hannover, 2003.

Prognos- Zukunftsatlast 2007 (Prognose Future Atlas) in Zusammenarbeit mit dem Handelsblatt - Total ranking: www.prognos.com/zukunftsatlas/07/zukunftsatlas07_ranking.php

▪ *The Pomeranian Special Economic Zone (Poland)*

Author: Marek Dutkowski (University of Szczecin)

General chraracteristics

The Pomeranian Special Economic Zone (PSEZ) has been created from joining the "Żarnowiec" Special Economic Zone and the "Tczew" Special Economic Zone which were established pursuant to the regulations of the Council of Ministers in September 1997 for the period of twenty years. The Manager of the Zone is the Pomeranian Special Economic Zone limited liability company with its headquarter in Sopot. The Pomeranian Special Economic Zone covers seventeen investment areas: 448,3 ha in the voivodship Pomorskie and 459,5 ha in the voivodship Kujawsko-Pomorskie, as well as 150 ha in the voivodship Zachodniopomorskie. Business on those areas may be run on preferential conditions.

PSEZ encourages to invest on the attractive industrial areas in the rural communes of Krokowa, Gniewino, Chojnice, Człuchów, Kowalewo Pomorskie, Łysomice and Tczew and in the urban communes (towns and cities) of Gdańsk, Grudziądz, Tczew, Kwidzyn, Starogard Gdański, Malbork, Sztum, Świecie and Stargard Szczeciński. Some of these sites are situated in the proximity to each other, in the south-eastern part of the voivodship Pomorskie (Fig. 1): Tczew, Kwidzyn, Starogard Gdański, Malbork, Sztum. These five cities and additionally two small towns Pelplin and Gniew are marked out to become a network of co-operating SMESTOs. Such a co-operation was already suggested in 2000 in the Regional Development Strategy of the Voivodship Pomorskie. The number of inhabitants of this network amounts ca 250 thousands.

The investment areas of PSEZ are located in the region with rich industrial traditions, well developed and complex transport infrastructure as concerns the sea, railway, road and air transport. They guarantee the proximity of large seaports in Gdańsk and Gdynia as well as Gdańsk Lech Walesa Airport which, according to many foreign investors, is a greatly positve feature of locations in PSEZ. There are following areas in the network:

CZATKOWY area

- Location: city of Tczew,
- Total area: 63,70 ha
- Area to manage: **lack**

ROKITKI area

- Location: city and rural community of Tczew
- Total area: 39 ha
- Area to manage: **lack**.

KWIDZYN area

- Location: city of Kwidzyn
- Total area: 65,8 ha
- Area to manage: **8,0 ha**

STAROGARD GDAŃSKI area

- Location: city of Starogard Gdański
- Total area: 59,6 ha
- Area to manage: 20 ha

MALBORK area

- Location: city of Malbork
- Total area: 8,2 ha
- Area to manage: **lack**

SZTUM area

- Location: town and rural community of Sztum
- Total area: 12,5 ha
- Area to manage: **lack**

The following companies invested in the particular areas of PSEZ:

Kwidzyn

Fabryka Plastików Pomerania sp. z o.o. - France, http://www.fpk.pl

International Paper - Kwidzyn S.A. - USA, http://www.ipaper.com.pl

Jabil Circuit Poland sp. z o.o. - USA, http://www.jabil.com

Lemahieu Polska sp. z o.o. - Belgium, http://www.lemahieu.pl

Malbork

Biopaliwa S.A. - Poland, http://www.elstaroils.pl

Starogard Gdański

Zakłady Farmaceutyczne "Polpharma" S.A. - Poland, http://www.polpharma.pl

Tczew

Cartondruck Polska sp. zo.o. Germany, http://www.cartondruck.de/cartondruck_start.html

Fabryka Opakowań Różnych FORCAN S.A. - Poland, http://www.forcan.com.pl

Flextronics International Poland sp. z o.o. - USA, http://www.flextronics.com/

Gemplus Pologne sp. z o.o. - France, http://www.gemplus.com

MBF sp. z o.o. - Belgium, http://www.belbal.com.pl

Molex Premise Networks sp. z o.o. - USA, http://www.modtap.com.pl

Nefab Packaging Poland sp z o.o. - Sweden, http://poland.nefab.com/

Press-Glas S.A. - Poland, http://www.press-glas.com.pl/

Tczew Tapflo sp. z o.o. - Sweden, http://www.tapflo.com.pl/

Vetrex sp. z o.o. - Poland, http://www.vetrex.com.pl

All of them are growing, successful companies, some operating worldwide. They belong to the most innovative branches, like electronics, pharmaceuticals, paper production, glass and plastic processing, biofuel production, packaging. The research potential is concentrated in the MEGA Trójmiasto (Gdańsk, Gdynia, Sopot). Only common action of all cities can in the future provide conditions for location of some specific research facilities in the network. First attempts were already made by the PSEZ Office, but they failed due to lack of political willingness of municipalities to co-operate. The State policy, especially some financial incentives, may change this approach.

- ***Nowy Sącz (Poland)***

Author: Marek Dutkowski (University of Szczecin)

General characteristics

Nowy Sącz is the capital of the area known as the Polish "Tuscany" with a 700 year cultural heritage, three mountain ranges covered with forests, three mountain rivers - Dunajec, Poprad and Kamienica, many health resorts and ski lifts. Nowy Sącz lies in the heart of the Beskid Sadecki Mountains - one of the most attractive tourist regions of Poland, famous for therapeutic waters, a refreshing climate and wonderful scenery. The city is the "tourist Mecca" of the Beskid Mountains where Karol Wojtyla, later to become the Pope, loved to wander.

The county seat of two counties (urban and rural), during the years 1975-1998 the capital of the Nowosądeckie voivodship (province), is considered to be a cultural, tourist and economical center of southern Poland. It is characterized by its: educated youth and hard-working entrepreneurs, with a total of about 8,000 businesses. It also has numerous friends and associates including unusual organizations such as - The Club of the Friends of Nowy Sącz (e-mail contact: kpzs@nowySącz.pl), associations of well-known politicians, socialites, scientists and businessmen whose identity is related to Nowy Sącz and are found all over Poland and even the world, from Warsaw and Krakow to Chicago and Tel Aviv. The calling card of the city is the representative orchestra of the Border Guards which has played more than once for the Pope in the Vatican. See: http://www.orkiestra.sg.gov.pl

Location

Nowy Sącz lies at a northern latitude of 49.4 and at an eastern longitude of 20.4, in the heart of the Nowy Sącz valley, between Gorlice and Limanowa, not far from the border with the Slovakian Republic. Population of the city amounts ca 85,000. Good bus, train and city transportation make it easy to take trips to attractive places in the nearby Beskid Mountains, including the well known resorts of Krynica, Muszyna and Piwniczna. There are 45 city and suburb bus lines. The PKS bus service ensures traveling ease and pleasure and offers bus connections to Warsaw, Lublin, Łódź, Kraków, Katowice, Rzeszów. In the city there are two helicopter landing fields. Nowy Sącz has direct railway connections with the largest cities of Poland (Warsaw, Kraków, Gdynia), and also with Budapest (Hungary) and Kosice (Slovakia).

Economy

Nowy Sącz is a mid-size industrial town, where numerous companies of national importance have their seat. They operate within production and repair of railway vehicles (NEWAG), production of carbon electrodes (Carbon), building industry (Fakro, Dako, Wiśniowski), food industry (Konspol Holding, Koral), new technologies (Optimus joint-stock company, Novitus joint-stock company - former Optimus IC) and many other. Nowy Sącz is also an excellent basis for profitable investments, especially within tourism, modern and pro-ecological industry of various branches and food processing. Nowy Sącz is also a town of craftsmen who specialize in making leather accessories and regional souvenirs, mainly made of wood.

History of NEWAG:

1876 Technical and repair workshop of the name Royal Railway Workshop (today NEVAG) was founded to provide maintenance for a newly opened railway route.
1880 -1912 continuous growth of the workshop. The plant had not been destroyed during the World War I and right after its end continued to work for independent Poland.
1918 The first locomotive renovated in the free country was a car of the 308 series.
1945 Production started right after rubble clearance and slight reconstruction of the workshop. The first steam engine series Ty2 was put to exploitation on April 19, 1945.
1967 ZNTK "Nowy Sącz" started to repair diesel locomotives of the SM30 series.
1972 In June the last TKt48-166 steam engine left the workshop. In the same year the first diesel locomotive of the SM42 series was repaired.
1991 ZNTK "Nowy Sącz" were again transformed into an independent state enterprise controlled by the Ministry of Transportation.
1995 Shares of the Company were brought into State Investment Funds, majority to X NFI Foksal
Beginning of 2001 was marked by a difficult situation at the plant, including financial shortcomings, small number of orders, and social-political turmoil.
2003 Company's shares were acquired by a private domestic investor. In the same year the Company implemented quality assurance system compatible with another standard and obtained QUALITY CERTIFICATE PN-EN ISO 9001: 2001
2004 EN57 No. 1806, the first Electric Multiple Unit repaired and modernized by the Company, was ready for exploitation.
2005 Company's name was changed to NEWAG Ltd.
2005 The first EMU EN71 repaired by the Company was officially handed over for exploitation. 14WE No. 01, an Electric Multiple Unit first built by the Company, was handed over to the Fast City Railway in Warszawa during an official ceremony.

To attract new investors and create new work places ''Nowy Sącz Sub-Zone of the Kraków Technological Park'' was created in town on September 18, 2007. It covers the area of ca 12 ha. On the initiative of the President of Nowy Sącz the works connected with introducing a free-of-charge wireless local area network (WLAN) have been started. The town hosts also A Building Exhibition and An Exhibition of Building Woodwork/Joinery. The Higher School of Business-National Louis University and the

town of Nowy Sącz held annually World Economic Forum for the Youth (parallel to the Economic Forum in Krynica). 1958 - 1975 " Nowy Sącz experiment", i.e. times of execution of the Resolution no 151 passed by the Council of Ministers on May 9 1958 concerning the economic development of Nowy Sącz and its region as well as vesting local authorities with more powers.

We Create a University of New Generation!

‘’An American, Richard Magner, Ph.D. - will become a new rector of our University – was officially announced by Krzysztof Pawłowski, Ph.D. a founder and present rector of the National Louis University in Nowy Sącz. That means that the University in Nowy Sącz is THE FIRST and THE ONLY University in Poland managed by a foreigner. That is a next step towards building the University of New Generation. The University of New Generation will rebuild its environment in such a way that it will enhance its development and will allow to compete with the best schools in the world. The indispensable element of WSB – NLU is a ‘’Multimedia Town”. The concept of the ‘’Multimedia Town” is an innovative idea of building for the first time in Poland an effective and fast means for transfer of knowledge, technologies, and innovations from the sector of higher education into economy.

National-Louis University – Wyższa Szkoła Biznesu (Higher School of Business)

This is a private school of higher education with its seat in Nowy Sącz, comprising 4500 students in four Departments:

- Department of Enterprise and Management
- Department of Computer Science and IT
- Department of Political Sciences
- Department of Psychology

1991 Higher School of Business (Wyższa Szkoła Biznesu) started its activity as a Sadecko-Podhalańska School of Business. Number of students: 64.
1992 agreement with National-Louis University in the vicinity of Chicago and since October that year the school has taken on a name of Wyższej Szkoły Biznesu (Higher School of Business) – National-Louis University.
1993 Polish Chamber of Commerce bought a six-storey building for the school.
Since the English language was the requirement of the co-founder of the School (NLU), an additional course (academic study year, the so called 'preparatory year') was created for those candidates who come to school with insufficient knowledge of English and do not meet the requirements for a three-year study. Furthermore, extramural studies at the Department of Management and Marketing have been introduced as well as special studies within business for the officers of the Polish Armed Forces that are transferred to the reserve.
1994 first graduates. Foundation of the Sadeckie Association of WSB-NLU Graduates. Post-graduate studies within the area of Company Management got started.
1995 WSB-NLU signed the contract with the Maastricht School of Management on common execution of the programme Master of Business Administration.
1996 WSB became a co-organizer of the Krakow Institute of Strategic Research - H. Dzielski's Centre
1998 M.A. studies within Management and Marketing
1999 MBA programme: Financial Management common enterprise with the Hull University, Great Britain. New faculty: Computer Science and IT - B.A.studies.
1999 agreement between Wyższa Szkoła Biznesu (Higher School of Business) and the National-Louis University. Graduates in addition to the Polish title of Bachelor of Arts obtain also its American equivalent.
2001 join the group of universities/schools obtaining a certificate Microsoft Certified Professional.
2003 building of a Sports Hall.
2003 cooperation with DePaul University (Chicago). 2-year long studies within Computer Science, graduates receive Master of Sciences in Computer Science granted by School of Computer Science, Telecommunications and Information Sciences of DePaul University.
2007 cooperation with Google.

Mission which guaranteed success to the School was preparing managerial staff for a free-market economy based on the best models of American business education system. Since 1995 WSB-NLU is a leader of the ''Wprost" ranking in the category of the non-state-owned schools of business and management. It also tops the rankings of business schools ''Home & Market", ''Rzeczypospolita" I ''Polityka".

Cluster of Multimedia and Information Systems

Cluster of Multimedia and Information Systems was set up on the initiative of Wyższa Szkoła Biznesu (Higher School of Business) - National-Louis University on the 28th of August, 2006 as one of the key elements of the project Multimedia Town. Within the framework of the project it was planned to create an organizational system comprising principles and concepts of functioning of several instruments which have so far existed separately in the economic reality: system of the cluster, scientific-technological park, research-developmental centre, enterprise mine, investment fund, educational system and a multimedia company.

At present Clusters comprise more than 50 pro-developmental, pro-innovative and highly specialized small and mid-size companies within the branch of modern technologies and new media from the whole of Poland.

Due to highly specialized and creative people with a vast array of competences of cluster firms the obtained synergic effect being the result of cooperation of more than 50 firms having at their disposal about 2000 IT specialists is impossible to predict. Firms that form the Cluster compete with one another, but within the Cluster create a network of commonly connected cooperating units. The cooperation within the Cluster takes place not only among the firms/companies but also with all the actors on the market of innovations, i.e. research-developmental centres, university, and financial institutions. Combining so many sources of knowledge alongside the principle of the market competitiveness through cooperation -''coopetition''- promotes synergic effects, results of which within innovations are unpredictable.

The Cluster with its competences and potential in connection with many other elements of the Multimedia Town, will become a kind of platform, bridge connecting businessmen with the scientists and students, the practitioners with the theoreticians. The Cluster is a breeding ground for innovative ideas being a result of the transfer of knowledge, know-how, convergence of ideas, technologies and seemingly distant application areas of multimedia solutions and information systems meeting business, education and entertainment. That can only result in unique products and services, which surely have a chance to revolutionize the world of technology.

The Cluster's Competences

Companies forming the Cluster are very much diversified not only geographically, but also within the profile of their activity. They operate mainly within creative and free-time industries. The range of competences exceeds decisively these areas of activity covering also TV-movie studios (spots, clips, commercials, classical animation, 2D and 3D computer animation post-production) , producers and suppliers of mobile solutions, software for enterprises, advanced applications of internet, intranet, and extranet; printing houses, consulting and e-learning firms, interactive marketing agencies and business web portals. The Cluster is surrounded with many national and international companies and supporting institutions, other World-leading clusters, innovative centres, which role is to internationalize the Cluster as well as mutual support within marketing-promotion activities.

The Cluster's Goals

Transfer of know-how, wide-spreading knowledge, common research-developmental projects, marketing-promotion activities, distribution and sales limit the transactional costs and influence the innovativeness of companies associated in the Cluster. It also allows for increasing the companies' competing position and therefore increasing the effectiveness of their expansion on/in the European markets.

Benefits for the Cluster's companies:

- Access to new achievements created by the Cluster
- Wide-spreading of knowledge
- Transfer of know-how
- Obtaining the effect of synergy of resources
- Execution of common projects
- Obtaining EU funds for research-developmental works, innovative activities, etc.
- Intensification of the existing relations in the innovative process (cooperation with other companies); positive effects in a form of improved products and services
- Promotion of a company
- The increased credibility of a company for its business partners
- Common recruitment of personnel
- Participation in the educational system of the Multimedia Town – trainings, post-graduate studies
- Participation in the prestigious business exhibitions (CeBIT), international conferences and workshops
- Reduction of costs throughout cooperation with other companies within marketing, export, supplies, B&R, re-engineering and benchmarking
- Reduction of transactional costs (trust)

Multimedia Town/Centre

Extra-regional centre of innovation combining goals and tasks of a scientific-technological park, research-developmental centre, a breeding ground for enterprise, a system of the Cluster, an investment fund, an educational system, and a multimedia company.

To make a good start the Association of the Multimedia and Information Systems Cluster has been set up. At present, it comprises 51 small and mid-size enterprises operating within modern technologies and new media from all over Poland. While those companies compete with one another in the market conditions, they do form a network of commonly related and cooperating units within the framework of the Cluster. As the owners of the portal podatki.pl explain, they count on synergy in cooperation with the portal plagiat.pl to build a common mechanism of a full-text search.

The cost of setting up and developing infrastructure of the Multimedia Town in the years 2007 till 2014 (convergence with the EU budget isn't accidental) is estimated for about 55 mln euro, while the total cost of the investment equals about 126 mln euro. The Higher School of Business intends to apply for financing of 40% of the investment to the Regional Operation Programme of the voivodship (province) Małopolskie, and for

the remaining 60% of the investment to the Operational Programme Innovative Economy. The first part of the project related to education, trainings and research is evaluated for above 48 mln euro – The Operation Programme Human Capital is meant to be the main financing source. The originators assume that the Multimedia Town will get to the self-financing level in 5 years since the beginning of its activity, the latest in 2014. According to the business assumptions within three years since the start of the Town, 100 workplaces will be created and additionally 400 fully equipped.

References:

http://multiklaster.pl

- ***Gloeniǫw (Poland)***

Author: Marek Dutkowski (University of Szczecin)

The Goleniów Industrial Park (GIP) – as an potentially innovative industrial cluster in a SMESTO at the fringe of a large agglomeration

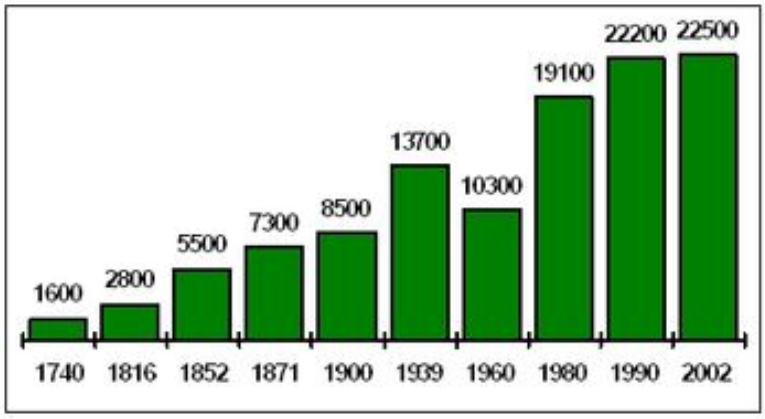
Goleniów (Kashubian: Gòlnowò; German: Gollnow) is a rural commune and town situated in northwestern Poland, 35 km from Szczecin and 65 km from the Port of Świnoujście. It belongs to the voivodship (province) Zachodniopomorskie (since 1999, previously to the voivodship Szczecińskie (1975-1998). It is the capital of Goleniów County. The commune and town are situated in the centre of Goleniów Forests. Now, the population of the Goleniów town is about 23 000 inhabitants, of the commune altogether about 33 000 ones. For long time it was as small town with industrial activities like the furniture and wood processing, cardboard and tin packages, and chemical, textile and food branches. The main growth factor and potential innovation source is the Goleniów Industrial Park; situated in the proximity to the old town Goleniów and the International (but of regional importance)Airport Szczecin-Goleniów "Solidarność" (see Fig. 1). The systemic transformation caused locally and regionally high level of unemployment. The commune and town Goleniów are part of the Szczecin Metropolitan Area. The Szczecin Metropolitan Area is not officially accepted yet, but discussed, locally and nationally supported, and treated as a distinct planning area in the regional spatial plan.

Historical roots of economic activity

Goleniów is an very old town. The first settlers came to this area already in the 10th century. Gollnow was founded in 1190. In 1268 Duke of Pomerania Barnim I granted the town charter. The town became the member of the League of Hansa and due to advantageous location at the river Ihna reached a high level of development and richness. Until the 18th century the grain, timber, and salt trade were the dominating economic activities. The Pomerania came into the possession of Prussia in 1720, having belonged to Sweden since 1648. The economy started toflourish again. Importatnt growrth factor was the connetion to railway in 1882 and 1892. In the year 1905 the population of Gollnow amounts 8 539 inhabitants. It possessed two Evangelical churches, a synagogue and some small manufactures: mainly textile, paper, and wood processing.

Goleniów became Polish in 1945, after the Allies decided about the new boundaries of the Polish State and displacing of German population from the eastern part of the province Pommern (Pommerania). The town was heavily destroyed by the military activity. In 1946 only 1700 inhabitants lived in Goleniów.

Figure 7: The population in Goleniów (1740-2002)



The Goleniów Industrial Park

The first attempt at improving the investment conditions and acceleration of the economic growth was made in Goleniów already in the nineties of the 20th century. The municipal investment zone was created. Due to several reasons, mainly of juridical and organizational nature, this idea failed. The Goleniów Industrial Park (GIP) was created in 2003 and now it is a fully developed area of 305 ha, designed for needs of industrial production and services. In the GIP a Special Economic Zone is located, which is a sub zone of the Kostrzyń-Słubice Special Economic Zone (www.kssse.pl).

In the GIP investments of more than 25 companies have been located. They represent a variety of industrial branches, for example: agricultural processing, food production, leather processing, decorative stone production and processing, production of carpet

yarn, packaging, wallpapers, trailers and transport semi trailers, and blades for propellers for wind power plants. This diversity makes creation of production clusters difficult, but may favor the spread of technological innovation (Fig. 2 and 3).

Among investors there are companies from Denmark, Belgium, the Netherlands, Germany, Korea, Pakistan, USA, and Poland. This fact influenced positively the social atmosphere in this previously rather provincial area. The international competences of the municipal office and local institutions have to be improved as well. The Goleniów Industrial Park with the Special Economic Zone is managed directly by the Mayor of the Commune and Town Goleniów, and every works connected with its development, investments and operation are led by office workers of the Commune and Town Goleniów.

The companies investing in Goleniów made use of:

- quick and professional support of our Commune and Town Office,
- perfect logistic location of the GIP,
- the Regional Support Programme for Business Investing in Goleniów.

The Commune and Town Office Goleniów facilitate investors in reaching demanded information and ensure wide range of organizational and technical support.
The quality and efficiency of working of our Commune is confirmed by obtaining:

- the Certificate of Quality Management in conformance with the International Standard ISO 9001:2000 obtained in 2004,
- the Certificate of Investments Location "Gmina Fair Play 2003",
- the "Pearls of Business" award in a contest organized by the World of Business monthly for 2006,
- a nomination for the award of " Poland Now" contest for 2007.

The Commune and Town Goleniów is opened for international co-operation, close relations among nations and propagation of the idea of common Europe, which was perceived by the Council of Europe of Strasbourg, awarding Goleniów with the European Diploma in 2001, and the Europe Flag of Honor in 2003.
The excellent logistic situation and well developed infrastructure ensure fast and cheap flow of goods and services in the country and Europe. Economic attractiveness of the GIP is raised first of all because of:

- high level of education of local labour force (because of rich science and educational base of close Szczecin, Koszalin and on the spot),

- well developed infrastructure of the commune and town (road network, banks, wire telecommunications, etc.) ,
- direct location by the national roads No 3 and No 6 (leading to Gdańsk and next to the Baltic Sea countries),
- direct location by the Szczecin-Świnoujście railway line; there are possibilities of building a railway siding,
- proximity to the modern International Airport Szczecin-Goleniów, situated 5 km from the town of Goleniów,
- availability of the technical infrastructure in Szczecin and Świnoujście, especially ports and ferry connections to Scandinavian countries,
- proximity to Polish-German border crossings in Kołbaskowo, Lubieszyn and Rosówek, situated about 50 km from the town, and Berlin (about 200 km from Goleniów),
- the close distance to the national center Szczecin - 35 km, and important regional centers: Świnoujście - 65 km, Stargard Szczeciński - 30 km, which ensure unlimited accessibility to their labour markets and potential acquiring of employees also from there,
- dynamic development of services and small business (there are about 3400 companies registered in the Goleniów commune and town).

The Goleniów Industrial Park is promoted by the state Polish Information and Foreign Investment Agency as one of the best national investment offers. The Regional Support Programme for Business Investing in Goleniów was worked out and carried into effect. The main aim of the Programme is regional aid for supporting of new investments and new places of employment creation connected with new investments. The new investments mean capital expenditure borne for:

- establishing a new company,
- development of an already existing company,
- making changes of production, manufacturing process or products,
- a purchase of an company which is in condition of liquidation,
- a purchase of a patent, a license, know-how or not patented technical knowledge.

The property tax exemptions are entitled for the period of:

- 1 year - if as a result of a new investment the sum exceeding an equivalent of Euro 50 000 was invested,
- 2 years - if as a result of a new investment the sum exceeding an equivalent of Euro 150 000 was invested,
- 3 years - if as a result of a new investment the sum exceeding an equivalent of Euro 300 000 was invested,

- 4 years - if as a result of a new investment the sum exceeding an equivalent of Euro 1 000 000 was invested,
- 5 years - if as a result of a new investment the sum exceeding an equivalent of Euro 2 000 000 was invested.

Leading the activity inside the Special Economic Zone means the necessity of obtaining a permission given by the Managing Company. The permission is allowed if formal requirements connected with the application procedure and the purchase of plots are fulfilled.

Companies undertaking their business activity in the Goleniów Subzone (a part of GIP areas) of the Kostrzyń-Słubice Special Economic Zone are entitled to using regional support in the form of the CIT income tax exemption due to two reasons: because of borne capital expenditure or because of creating new places of employment.
Small business subjects undertaking the business activity in the area the Kostrzyń-Słubice Special Economic Zone are able to use the CIT income tax exemption up to the sum of 60% of the borne capital expenditure, or of 60% of the of the two years' work expenses (costs of gross wages and other obligatory payments connected with employing new employees). The average business subjects are able to use the up to 50 % CIT income tax exemption, while the large ones the up to 40 % exemption.
In the Goleniów Subzone of the Kostrzyń-Słubice Special Economic Zone the companies are entitled to use temporary 100% exemption of local taxes, which are in force in the area of the Commune and Town Goleniów. The necessary condition of obtaining the support due to borne capital expenditure is leading the economic activity connected with the created investment for at least 5 years. The necessary condition of obtaining the support due to creating new places of employment is keeping them for at least 5 years. To invest in the Goleniów Subzone of the Kostrzyń-Słubice Special Economic Zone it is necessary to obtain a K-SSEZ permit for running business activity in the Zone, and bearing the capital expenditure of minimum Euro 100 000 .

First results in context of innovative policy

Since the creation of GIP the income of the commune and town Goleniów grew from ca 44,2 millions of PLN in 2004 to 76,5 millions of PLN in 2008 (planed). Hundreds of jobs were created. Goleniów became an innovative, dynamic town with bright perspectives. GIP is one of the most important industrial sites in the Szczecin Metropolitan Area. The policy of the State is rather oriented towards new investments and creating new jobs than towards the support of technological innovation. Some companies located in GIP have a high innovative potential and undoubtedly are sources of innovation at the local and regional level. The links to the R&D and research facilities in Szczecin are not

notified yet, but very likely in the future. Goleniów Industrial Park as a new industrial cluster at the fringe of the Szczecin Metropolitan Area is completely different from the "old industry" in the port of Szczecin (shipbuilding, textile, paper). Off course, some of the plants represent rather medium level of technology, but nevertheless it is higher than in the traditional, economically devastated factories in Szczecin.

References

http://www.goleniow.pl/gol/index.php

- ***Berezovka (Belarus)***

Author: Dimitri Semenkevich

(Institute for Regional and Urban Planning, IRUP, Minsk)

General characteristics

Berezovka is urban settlement of Grodno region and is considered according to the National plan of territorial arrangement of the Republic of Belarus as a town of Lida Administrative District. The town was founded in XIX in Lida Uezd (District) of Vilensky Province basing on glass-blowing factories ("Neman –A" and "Neman – B"). Development of the settlement has been closely connecting with activity of above mentioned enterprises. From 1959 Berezovka has been human settlement for workers, but later, in 1990, thankful to glass industry, the settlement has got its status of a town. Nowadays Berezovka is called as "crystal capital" of Belarus.

Location

Berezovka Town is only one urban settlement in Lida District, excluding Lida town itself. It is located in the western part of Belarus in the picturesque countryside on the left bank of the Neman River and it extends by 1,5 km along. The town is placed 27 km to South-East from Lida City, 138 km from Grodno City and 8 km from railway station Neman. In spite of insignificant remoteness from railway station the town has good bus accessibility with nearby settlements. Berezovka is connected with Lida, Novogrudok and Dyatlovo through the roads.

Planning arrangement

The town has a compact planning structure with high share of multi-family middle-storied buildings.

Economy and forms of activity

Berezovka is small-sized industrial mono-branches town (so called "mono town"). The main specialization of the industry in the town is glass production. The main enterprise is glass factory "Neman". The number of workers amounts more than 25% of the total population of the town. During the USSR Berezovka glass factory was the third (by the size) glass enterprise in the country. At present it is modern well-equipped enterprise that produces goods from crystal, colorful and colorless glass with wide variety of decoration. The enterprise imports its production to Russian Federation, Holland, Belgium, Greece, Italy, France, USA, Canada, Kazahstan, Lithuania, Latvia, Estonia and other countries. Besides Berezovka is one of the popular tourists places in the republic thankful to its ancient glass industry, amazing countryside and river. The town has high potential for rural tourism development.

Demographic situation and housing

At present the number of population of the settlement amounts 11.7 thousand inhabitants which is 3 times as much comparing to the year 1960. However beginning from 1995 there is a trend of reduction of the population. The town occupies the territory of 4.4 sq.km. The average supply with housing in the town is 22,9 sq.m per 1 inhabitant that is higher than in bigger cities. Berezovka has quite high maintenance of housing stock with necessary housing utilities: 82% of total housing stock is provided with water and sewerage, 93,4% has central heating, 76,5% has hot water and 89,9% -- gas.

Culture

The two-storied building of town administration, that was built in 1925, is one of the architectural monuments saved in the town. Museum of glass that presents variety of glass is very attractive for tourists and some of the items indeed are considered like masterpieces. The Church of Holy Spirit as well as the House of culture is one of the place of the common attraction as well.

Ways of development

Reconstruction and modernization of glass industry is one of the most important investment project included into the National comprehensive program of development of regions, medium- and middle-sized urban settlements for the years 2007-2010. It is planned to modernize the main enterprise - glass factory "Neman". Above mentioned investment project has been included into the following documents: "Program of glass industry development in the Republic of Belarus 2006-2010"(2006), Decree of the President of the Republic of Belarus N141, 7.03.2006 "On measures on state support

of glass factory "Neman". According to these documents it is planned to improve the industry which will include technical renewal and innovational mechanisms of development.

- ***Zaslavl (Belarus)***

Author: Dimitri Semenkevich
(Institute for Regional and Urban Planning, IRUP, Minsk)

General characteristics

Zaslavl is an urban settlement of regional subordination. It got its status in 1985 according to the National plan of territorial arrangement of the Republic of Belarus. It is one of the most ancient urban settlements in Belarus. First Zaslavl was mentioned in 985 when it had been being a part of Polotsk Princedom. In the first part of XII century it was known as the centre of Independent Izjaslavl Princedom. From the end of II century it had been belonging to the Great Lithuanian Duchy. In XVI the printing-house was opened and in 1574 the Bible was published. In 1569 Zaslavl became a part of Minsk Povet (District). Later during XVII – XVIII the settlement had been the centre of Zaslavl County. From 1924 to 1959 it had the status of the centre of administrative district. In the period of 1985- 2006 Zaslavl have been included into regional subordination of Minsk. And since 2007 it is the town of district subordination (Minsk Administrative District).

Location

The town is located 27 km north-west from Minsk City in the one of the most picturesque countryside at the bank of Svisloch river. It has 25 minutes transport accessibility with Minsk City by the road Minsk-Molodechno and by the railway. Average time consumption to assess a working place within the boundaries of the town is 20 minutes. Extension of roads with hard surface – 25,8 km or 49% from the total extension of roads. Zaslavl Reservoir adjoins to the town from South-East; coniferous forest of the recreation area "Minsk sea" adjoins to the town from the South.

Economy and forms of activity

Industrial potential of the town is presented by 7 enterprises where work 1,1 thousand workers. Leading branches of the town are construction industry and light industry. There is also unique enterprise working in the field of poultry farming development

Demographic situation and housingThe number of population of town amounts 14 thousand inhabitants. Positive dynamic of the population growth started in 1980 and since then the population number increased 1,6 times. The town occupies the territory of 14,3 sq.km.

The average supply with housing in the town is 25,9 sq.m per 1 inhabitant. Zaslavl has good maintenance of housing stock with necessary housing utilities: 72% of total housing stock is provided with water and sewerage, 97,8% has central heating, 49,2% has hot water and 77,2% -- gas. The phone station maintains 5000 numbers. Besides there are 3 providers of mobile connection. The level of automobilization is 21 cars per 1000 persons.

Planning arrangement

Town has a dispersed planning structure because it is crossed by transport links, the rivers and the Vileyka-Minsk canal of the water system. Main planning directions were defined by historically formed streets.

Factors for development

Zaslavl has a number of advantages, such as favorable geographical location; convenience of transport communications; allocation within the borders of Minsk agglomeration; rich historical-cultural heritage; efficient industrial potential; developed construction industry; valued landscape of territories surrounded the town. Recently the main role of Zaslavl was determined. Because of small remoteness of Zaslavl from Minsk City, its excellent transport connection to Minsk (roads and railway) and efficient social infrastructure Zaslavl is considered as one of the most attractive places for housing construction for needy inhabitants of Minsk city which are included into "waiting list for housing" at the city's administrations. It is planned to develop the series of residential areas of multy-stored housing. Thus it would provide efficient use of spatial resources with maximum profit as for population as well for municipal economy. By its function Zaslavl remains to the group of tourist, recreational and nature protection urban settlement. Therefore, development of its tourist function is also important.

Proposed ways for development and priority measures

- selling of non-used industrial premises;
- efficient use of existing industrial premises and equipment;
- creation of foundation to support of high schools and colleges graduates, which were directed to the town for work. Provision them with housing;
- intensification of individual housing construction;

- usage of favorable location of Zaslavl within the borders of Minsk agglomeration to develop complex residential areas of multy-stored housing for inhabitants of Minsk City. It will provide efficient use of spatial resources with maximum profit as for population as well as for municipal economy;
- construction of sport centre with swimming pool;
- construction of children's art centre, house of culture, centre of social service for the population, parking, etc.
- reconstruction of treatment plants; construction of the station on biological sewage treatment and stations on disinfection and deferrization;
- displacement of non-ecologically friendly enterprises out of the town (petrochemical enterprise and asphalt plant);
- replacement of solid fuel by ecologically friendly gas for boiler-furnace equipment; modernization of old boiler-furnace units and construction of modular units;
- construction of centralized sewerage for the area of individual housing;
- maintenance of streets (covering with hard surface up to 60% from the total extension as a social standard);
- accomplishment of yards within residential areas;
- accomplishment of streets within areas of individual housing;
- restoration and rebuilding of historical core of the town, particular saved monuments;
- accomplishment of recreation places near the Zaslavl Reservoir and other surrounding water fronts.

Measures included into the list of main investment projects

Within the framework of the National comprehensive program of development of regions, medium- and middle-sized urban settlements for the years 2007-2010 it was planned to make technical re-equipment of existent manufactory during the years 2007-2008 and to implement reconstruction of rowing canal of the National olympic centre of the water sport by 2007. This investment project was also included in the State investment program for 2007.

III. Latvia and NW Russia

- ***Jelgava (Latvia)***

Author: Laila Kule
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Jelgava City is a two tier municipality performing responsibilities of regional and local municipal level and located in the central part of Latvia at the south west of Riga city functional region on the low lying valley of River Lielupe. Jelgava is located 42 km from Riga City and only 34 km from the Latvian-Lithuanian border. The closest other district centre from Jelgava is Dobele Town that is located 28 km in the west direction. Jelgava is located some 50 km from the sea and sea resort Jurmala. Jelgava City municipality has 66 thousand inhabitants in 2006. In the end of 1980ties the city reached highest number of the population – 74 thousands, that was gradually decreased due to out-migration (mainly Russian population) and unfavourable natural growth. After 2000 Jelgava City has negative natural population increase and a positive surplus of migration that together with Jurmala City are only large cities in Latvia that has a positive one. The adjacent rural municipality Ozolnieki novads with some 8 thousand inhabitants (2006) that is rapidly increasing due to suburbanization process is a functional part of larger Jelgava urban area.

Table 1: Number of inhabitants in Jelgava City

Year	Number of inhabitants in Jelgava City
1642	3000
1757	9948
1897	35131
1914	45700
1925	28321
1935	34099
1945	15800
1959	36270
1979	67333
1989	74105
1992	71399
1994	67026
2001	63652
2005	66136
2006	66087

Data source: Jelgava City and the Central Statistical Bureau of Latvia

Jelgava is the fourth largest city in Latvia and has dual role – 1) it is a part of Riga City functional region and it is largest satellite city, 2) Jelgava City plays the significant role for the region located south of the Capital City Riga. Jelgava is a administrative centre in the Zemgale Planning Region although functionally the central place for the Zemgale is Riga City that dominates in all economical and social aspects, including commuting.

Jelgava obtained city rights in 1573. From 1617 to 1795 Jelgava was an administrative centre of the Courland Duchy; later until 1918 the city was an administrative centre of the Russian Empire's administrative region (guberna). In the interwar period Jelgava was regional centre. In Soviet period the city has the status of republican city that means it performed both local and district functions. Besides that Jelgava City was centre of the rural district that surrounds it - Jelgava district (rayon). As since 1998 administrative-territorial reform is still underway in Latvia, at this moment Jelgava City administrative status did not change. Additionally since 2002 it is also the centre of the Zemgale planning region.

The number of employees increased from 19 600 in 2001 to 22 400 in 2005 that is due to the fact that young and previously unemployed are entering the labour market. At the same time the process of suburbanization then city inhabitants are moving to newly built single family residential housing areas in adjacent rural municipalities are taking place particularly after 2000.

The major success of Jelgava City is the decrease of the unemployment rate – yet in 2002 it was still 10,1% high and in 2006 only 5,5% average number per year. That is one of the sharpest drops of unemployment rate in Latvian cities and now it is lower than national average (in 2006 - 7%). Similar process was observed also in another industrial medium size city – Liepāja that has a drop in unemployment rate from 13,7% to 7,3% in the same period.

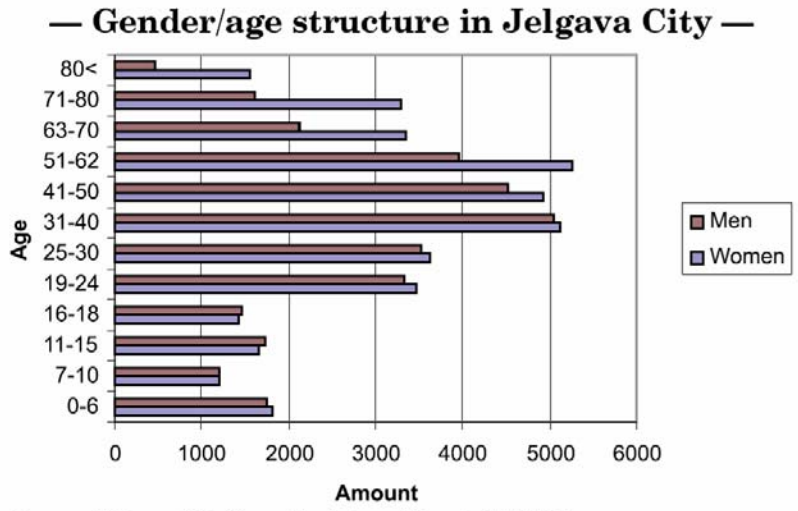
Jelgava situation can be explained by the close proximity to Riga. Jelgava inhabitants always can find job in Riga city and it's Region. Also spill-over process facilitates that new employment places are created in Jelgava that can offer lower land prices and labour costs than Riga

In 2006 13 942 or 32% of all working age population of Jelgava worked in Rīga and only 15 287 or 35% in Jelgava itself. The rest 13 % Jelgava labour force worked in districts of Bauska, Dobele, Jelgava and Rīga. The information on working place of the rest 20 % is not obtainable. Jelgava City as well as adjacent Ozolnieki rural

municipality is a part of Riga labour force market and is located in daily commuting area. Jelgava has been a functional part of Riga city-region and due to its size can stop commuting flows from the western part of the Zemgale Planning Region.

Jelgava City is multi-ethical community 55% are Latvians and 30% are Russians among all inhabitants of the municipality in 2006. The share of Latvians slightly increased while Russians decreased since 1990ties. Before the First World War there lived some 10 thousands Baltic Germans that after the Second World War were almost all emigrated.

Figure 8: Gender/age structure in Jelgava City



Source: Jelgava City Council, data on March 15, 2007

Territorial scope of current clusters

Total territory of Jelgava is 60,3 km², out of which 1,74 km² are open waters, 1,62 km² – parks and 10,75 km² – forests. Population density is 1100 per 1 km². There were 26501 apartments and 7680 residential buildings in 2005 in total. The highest percentage - 29% is residential buildings with more than 50 apartments and 21% of all residential buildings are with 3–9 apartments. The price of housing has been tripled since 2004. The city has a need for water supply and canalization and road infrastructure reconstruction Jelgava has centralized heating supply using natural gas that is slit by the River Lielupe in two independent units. The urban infrastructure is gradually improved with the EU funds.

Majority of industrial enterprises are located in compact industrial zones close to the railway transit corridors - not all available land is used, some 45 ha are vacant, there also a few that are located scattered among the residential buildings. Despite the industrial and transport character city's air quality is the best from Latvian large cities.

Jelgava City is located on a lowland with absolute height from 2,5 to 4,5 m. During flood periods River Lielupe can overflow large areas and the water level can increase up to 2,6 m above sea level. In 1979 the floods increased up to 3,5 m above the sea level. 34% of the Jelgava's territory is under the risk of flooding. With the expected water level increase due to climate changes the potential flooding is considered as the risk to the urban development. There were plans (in 1963, 1980, 1983) to improve the situation and in 1987 the construction of the flood protection dyke started although it was not finalized due to political changes and up to now this anti-flooding measures remain one of the most important tasks by the city government that try to attract various financial resources. In the flood lands of River Lielupe within the urban borders the state nature reserve (NATURA 2000) "Lielupes palienes pļavas" was established in 2004 on 353 ha as valuable habitat and site for birds. Since 2007 wild horses are released for both ecological and recreational purposes.

Transport

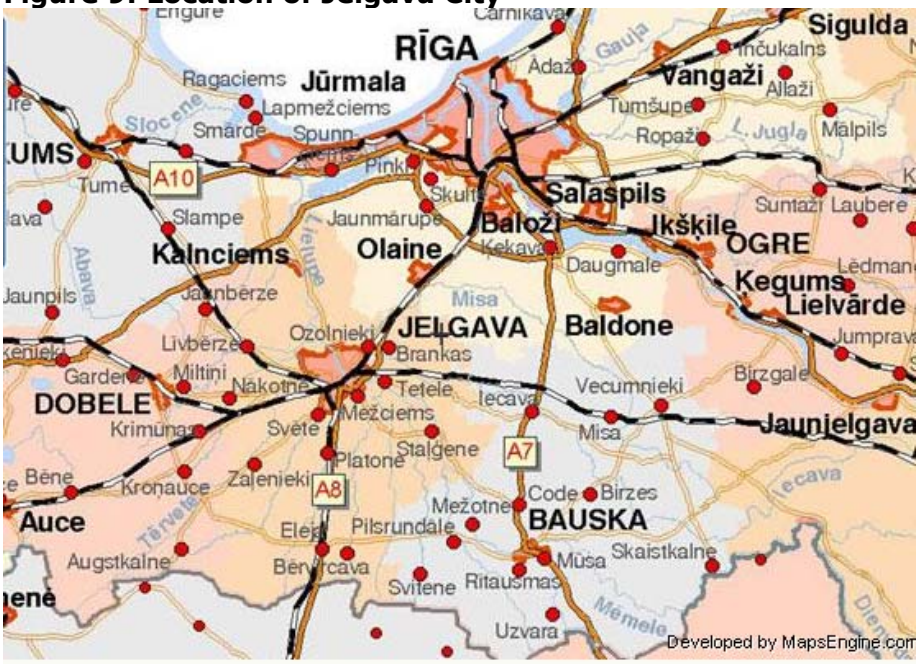
The castle and later the Jelgava city were established on the place where historically River Lielupe was crossed by the merchants. The river is navigable up to Emburga but now days almost not used for the transportation. Old postal road from Russia to Western Europe and the transit road Riga-Lithuania passed this area. In 1830-39 the highway Riga-Jelgava-Königsberg (Kaliningrad) was built. After 1991 the efforts to develop the international corridor Via Hanseatica (E77) St. Petersburg – Pskov - Riga-Jelgava-Kaunas-Berlin has been significant by Jelgava planners.

Currently Jelgava is the junction of five railway lines and six major roads. Railway lines are constructed in industrialization period - Riga-Jelgava-Mažeikai in 1873, Venstpils - Jelgava- Krustpils (Jekabpils) in 1904 and Jelgava-Šaulai in 1916. Since 1902 there are located railway repairs workshops in Jelgava and this activity is continued up till now. Jelgava railway station is a part of the East-West transit corridor for oil, oil products and chemical products transportation. The railway transportation activity creates an increased risk for the city and its inhabitants.

Closest international airport is located in Riga District on the edge of Riga City. In the north part of the city the large airfield is located that currently used only for small and sport airplanes. There was an airport before WWII that was destroyed in 1941. In 1947 Jelgava airfield was established as Soviet Army reserve airport (339 ha), later privatized and up till now are not used in its original capacity. Jelgava passenger bus terminal is an important one having 800 buses per day. There is a need to move bus

terminal closer to railway stations in thus facilitating inter-modality of passenger transport.

Figure 9: Location of Jelgava City



Source: Jelgava City Council, 2008

Local cluster history

Jelgava City was developed as a regional administrative centre, as a traffic node and as an alternative place to Riga but still a central place for a country due to political reasons. In 13th-14th the Livonian Order constructed a castle on the coast of the River Lielupe. In 14th century twice Lithuanian forces captured the castle. In 1565 the Duke of Courland and Semigallia chooses Jelgava as a residence and in 1617 the city became the main administrative centre for the Duchy (Ducatus Curlandiae et Semigalliae). Jelgava received the city rights in 1573. The historical name of the city in German was Mitau, or Mitawa – in Polish and Mintauja – in Lithuanian.

Being on the crossroad, Jelgava City has one of the Latvian cities that are suffered most from numerous wars through centuries but particularly from both World Wars. In Polish-Swedish war (1600-1629) Jelgava and its surroundings have been devastated numerous times. In 1648 Jelgava was walled and fortified and still in 1658 it capture by Swedes and in 1659 by Polish-Lithuanian forces. In 1918 defeated German forces burned Jelgava castle and other historical and important buildings. On 27.07.1944 almost 90% of Jelgava's territory was bombed by Soviet aviation and almost completely burned. The battlefront is in the city's surroundings up to 10.10.1944. Jelgava city lost thousands of its inhabitants due to Soviet and Nazi occupations. After

the wars the inhabitants each time had the capacity to rebuild the city and its traditions that included the aspiration to knowledge.

Courland Duchy governors and regional administrators through centuries were eager to compete with Riga City in thus facilitated innovative activities. The governing of the Duke Jacob (1638-1681) is characterized with innovations in manufacturing and good trading relations worldwide. Jesuit Mission in Jelgava (1670-1773) had certain role in the development of the city. In 1667 the largest publishing house in Baltics was located in Jelgava where they publish a half of all books printed in Latvian in 18th-19th centuries. Italian architect Francesco Bartolomeo Rastrelli, who later becomes famous in St Petersburg, is building a new castle in 1737. In 1775 higher educational institution Academia Petrina is opened in Jelgava. In 1795 Jelgava had first population census – 9948 inhabitants and 630 houses are counted. In Jelgava the first public library in Latvian territory was established in 1785; the first museum was opened (Courland Provincial Museum) in 1818; the school for girls is opened in 1819; the first Latvian newspaper was published (1822-1915); the Courland Agricultural Society was established in 1839 that facilitated the innovations in agriculture; and the Latvian Society was established in 1880 that facilitated the first uprising of the Latvian nation. The hospital for mental illnesses was established in 1887. In 1939 the national government renovated the burned Jelgava castle and in the premises the Jelgava University was established.

Industrial activities were embarked in 1770ties when the starch factory was opened in Jelgava. The Courland's peasant liberation in 1818 facilitated the development of industry. In 1821 the flax factory was opened that still is functioning as only one with such profile in Latvia. Now it's producing under the company name "Larelini" and has 350 employees. There is an expectation that the Zemgale Region's farmers that were specialized in sugar beets after closure of the factory in 2007 will turn its production profile to flax besides rape or grain also. The plant of building materials and the company „Latvijas keramika" are using local natural resources and the latter is the biggest manufacturer of ceramics products in the Baltic States (founded in 1963) and became a limited company in 2000.

Jelgava Engineering Plant is continuing the industrial metal production traditions that started in 1875 with the Kramer hardware workshop activities. Since then Jelgava is showing continuing interest in metalwork and machine building. In Soviet period Jelgava became industrial centre as a part of production was targeted from rapidly growing Riga City to its surroundings, including Jelgava. Machine building is a

challenging industrial branch with particular recent history that was created by the RAF vans known all around Soviet Union and other countries of socialistic orientation. Due to the RAF production line Jelgava as a part of the brand name RAF Jelgava was well known in socialistic world as vans were simple but durable for various geographical conditions.

RAF was established in 1947 in Riga on the basis of experimental auto repair workshops. The first RAF minibus was assembled in 1954 out of GAZ. In 1955 it was renamed the Riga Experimental Bus Factory (Rīgas Autobusu Fabrika, abbreviated RAF) and in 1957 the first van produced. The first assembly line with several RAF models was operating since 1960 (up to 1500 units per year) at site in Riga. The Riga Technical University researchers were a part of the research and development unit of the factory. Some of models were industrially produced in Erevan, Armenia as site in Riga was too small. In 1976, the construction of a new factory in Jelgava was finished, designed to produce 17,000 vehicles per year. The research and development and some other units were left in its Riga site. In 1982 in Jelgava site there were produced 15 thousand vans from them 36% were ambulances. Supply parts for assembly line came from 243 enterprises from all over the Soviet Union. In the 1990s, the RAF model was outdated and the factory started to design a new model and was looking for Western European cooperation. After the collapse of the USSR, the new borders and the new economical regime broke the supply chains and production fell drastically. There were interest from both Eastern and Western European and Asian investors although the factory was not considered well enough for investments. In 1997 production of vans was terminated and in 1998 the factory went to bankrupt - 4,5 thousand of employees of RAF plant in Jelgava became unemployed. Jelgava economy was undergoing one of the most unpleasant period in its history.

Thus any activity to reactivate metal and machine producing industry are warmly welcomed by the both Jelgava and Latvia inhabitants. By the snapshots in 2007 of Latvian inhabitants they associate Jelgava by its 1) education activities, 2) projects in arts and culture and 3) industry. In 19.02.2000 daily newspaper "Diena" wrote that "Jelgava is lost in its gloomy past" and only students make city vivacious with its decay of industry, unarranged infrastructure and expensive public services". In 2008 situation is improved – it is still the student city, but it is also the regional centre of education, science and culture, and the industry and public infrastructure is developing. "One of the merits of Jelgava is the Latvia University of Agriculture. It has scientific potential, highly qualified workforce, possibility to create link scientist-entrepreneur, thus in future it is possible to head towards products with high value added"

(Magazine"Kapitāls", July, 2006). The specialization of the University to food, wood products processing and agricultural machinery and construction materials, was facilitating the development of these industries. The metal processing and machinery production only partly can rely on research and education basis of the Jelgava City, the majority of students and researchers in this field are located in Riga and connected to the Riga Technical University. As in Jelgava is located the only one higher education and research centre for wood and food production and it is close to the main agriculture region in Latvia Jelgava is becoming after 1991 increasingly specialized in the wood and food production.

Local knowledge-intensive cluster

Gross domestic product of the Jelgava City increases constantly in last years and in 2004 reached 129528 thousand LVL from which larger part is created by industrial output (C-E sectors by NACE ed.1.1) – 31 993 thousand LVL, by commerce (G sector) 21 152 thousand LVL, transport and communications (I-K sectors) 21 606 thousand LVL, education, health and social care (M and N sectors) 18 549 thousand LVL, governmental services (L sector) 15789 thousand LVL, tourism services (H) 2297 thousand LVL, other services (O sector) – 6085 thousand LVL, construction (F sector) 7788 thousand LVL and primary sector (A and B) - 4269 thousand LVL.

Investments between 2001 and 2005 increased almost four times in the Jelgava City and in 2005 it reached 63,4 million LVL that is one of the highest increases in the country. The annual average investments in Jelgava are still lower (in 2005 per capita – 959 LVL) than national average (in 2005 per capita – 1723 LVL). Between 2001 and 2005 construction volumes in the city has increased by almost six times.

The inflow of financial resources caused the increase of labour force costs – in 2006 for one third, salaries increased also in 2007 similar to developments in whole Latvia. Although the Jelgava's employees are paid less than Riga's – in 2005 employees in public sector in working places in Riga had in average 237 LVL salary then in Jelgava only 188 LVL. Even lower salaries are to public sector employees in rural areas that surrounds Jelgava City.

Average unemployment level (5,5% in 2006) in the Jelgava City is lower than national average and also in surrounding rural area. Number of employed is increasing constantly. In 2006 there were 20 264 employees from them 15 287 was from Jelgava City, 1397 from Riga city , 399 from Riga District, 439 form Bauska District and 889 from Dobeles district. Relatively low unemployment level are caused by new

employment places in new industrial enterprises in the city as well due to lower unemployment level in Riga City – 13 942 Jelgava residents worked in Riga City in 2006, in 2005 – the number was higher – 14 217, in 2004 – 13 544, in 2003 – 12 949 and in 2002 – 12 024 (source: State Revenue Service of Latvia).

1563 employers are registered in the Jelgava City in 2006 that produced industrial commodities for 75 935 thousand LVL from which 26% are exported. Industrial production is increasing in the last years however the city is still overcoming the consequences of transition period of 1990ties when both population number and industrial activities reduced remarkably. In 2006 there were only 7 large enterprises, 49 medium and 234 small size enterprises in Jelgava. More than 11% of enterprises are industrial by NACE classification. In 2005 only 51 enterprises of 1139 were with foreign capital and this share is twice lower than in average in Latvia.

In 2006 food and drinks production made up to 46% of all industrial out put in Jelgava city. This share is expected to decrease as the largest food production enterprise – Jelgava sugar factory that was established in 1926 had 344 employees in 2006, is closed in 2007 as a part of the EU agricultural policy restructuring.

There is guess that similar Danish food producing company will replace closed Latvian company and will take advantage of local skills and knowledge in food production. Food and drinks industry has strong position in the Jelgava due to the proximity to the best agricultural area (Zemgale plain with fertile soil) in Latvia –due to the only higher establishment specialized in food, agriculture, forestry and rural issues that is located since 1939 in Jelgava - the Latvian Agricultural University. There are Meat Jelgava Production Plant (151 employees), bread products enterprises "JLM Grupa" (360 employees) and "Zelta Vārpa", grain production plant "Jelgavas Dzirnavas" (110 employees) and the Milk Factory "Zemgales piens" (82 employees).

Non-metallic production made up 10% metals and metallic products 6,4% and textiles 2,7% in 2006. Last two branches have tendency to decrease in the last years due to increase in labour costs and inability to compete with production costs in Asia. Other traditional industrial branches of Jelgava City like wood industry, plastics industry and printing and publishing industry are increasing and made up respectively - 8,6%, 4,8% and 1,9% in 2006. Wood processing and furniture industry due to close connection with Agricultural University and research units are characterized with a high added value. For instance, SIA „Flora" (140 employees) producing wood building materials and details that 90% are exported to Germany, SIA „Eibe" (130 employees) producing

furniture – 95% for export, „Zemgales tehnoloģiskais centrs" (24 employees) – log buildings that are 60% for export, SIA "OAK" (60 employees) – wood furniture, from them 10% for export and AS "Dialogs" (103 employees) – soft furniture that are 30% for export.

Table 2: Employees in industrial branches in Jelgava

Industrial branches in Jelgava	Employees	
	2005	2006
Food and drinks industry	1101	1177
Non-metallic products	332	258
Metals and metallic products	321	267
Textiles	689	478
Wood industry	390	135
Printing and publishing industry	210	139

Source: Central Statistical Bureau of Latvia, 2007

Table 3: Industrial enterprises in Jelgava with highest turnover, year 2006 in LVL,

Enterprises	**turnover, year 2006 in L**VL
Latraps, Co-op – agricultural equipment	26 288 350
Jelgava sugar factory, Inc(closed in 2007) – food	21 516 120
Flora, SIA – wood and building materials	3 555 770
State Psycho-neurological Hospital "Ģintermuiža"	2 877 491
Jelgavas MB, Ltd. – building materials	2718489
Zemgales piens, Inc – milk products	2 522594
Rimts, Ltd. – building materials	21 40934
Madara, Ltd. – metal products and processing	1 817798
Marks M, Ltd. – furniture	1 649658
Jelgava engineering Plant Co. – metal products	1 596816
Salta BM, Ltd. – retail	1 529845
Signum, Ltd. – metal products	1 303251
Juneka montāža, Ltd. – building materials	1131599
F-TEX, Ltd. – textiles	1 031391
Rialto, Ltd. – furniture	766148
Nests, Ltd. – food	763702
KLLT, Ltd. – textiles (closed in 2007)	585537
VT East, Ltd. – metal products	503637

Source: Lursoft

Jelgava city has long tradition in metalwork and machine building. In total in 2006 metal and metal products industrial enterprises produced products for 4,5 million LVL and has 267 employees. In Zemgale Planning Region this branch had growth remarkably higher then in other parts of the country. This industry branch is characteristic with its orientation toward the export – up to 80% of products are exported. Some examples are as follows:

Jelgava engineering Plant Co. (Jelgava Mašīnbūves Rūpnīca) was established in 1875 as Kramer hardware workshop. Its current title the plant obtained since its reestablishment in 1950; in 1996 it was denationalized. 4,4 million EUR turnover in 2007, in 2005 turnover was higher - 5,1 million EUR. It has 210 employees from them 40 engineers. The plant is manufacturing of lubrication equipment, block brakes, containers, agriculture machinery, disk brakes, steel constructions and fences. Main

markets are Kazakhstan, Russia, Belarus, and Ukraine. Signum was established in 1994 and has 35 employees. Its business profile is design and manufacturing of traffic signs, road equipment and other metal accessories. Turnover was 1,8 million EUR in 2006. Main markets are Latvia and Estonia.

Smurfit Kappa Packaging with the strong business profile in paper-based packaging and its operating in over 30 countries worldwide. Smurf it Kappa Packaging entered the Latvian market by exporting its products to Latvia from a plant in neighbouring Lithuania. However, once the potential of the Latvian market's booming economy was realised, the decision to establish a packaging solutions production plant in Latvia was made to take advantage of the countries growing needs. Operating under, Smurfit Kappa Denmark a subsidiary of the Smurfit Kappa Group, the company built a factory to provide in Jelgava with customised, high quality and innovative packaging solutions. The purpose of this new facility is specifically to supply the rapidly expanding domestic Latvian market. In 2007 Kappa Packaging had launched its operations on the leased site of 2600 m2 of production space in NP Jelgava Business Park.

Norwegian metalworking company Torgy Baltic was established in 2005 by investing 500,000 EUR and has 61 employees. 2,1 million turnover in 2007. The plant is producing pipe clamps for Norwegian oil offshore industry and its main markets are Europe and Asia. The company visited Latvia for the first time in November 2004, and after a sequence of 6 consecutive visits, a decision was made to establish a daughter company Torgy Baltic for the company to operate in Latvia. Torgy Mek Industry selected Jelgava known for its strong metalworking traditions, to set up its first production site by renting 1500 square meters of manufacturing space. While the facilities were being renovated, the welders employed by Torgy Mek Industry were trained at the company's production plants in Norway. After its expansion to Latvia, Torgy Mek Industry has been able to become a much more competitive supplier in the global market, reducing its production costs by taking advantage of the local skilled labour found in Latvia (source: LIAA).

As a result of successful cooperation among the Latvian Investment Agency, the German-Baltic Chamber of Commerce in Latvia, and the Jelgava City, AKG invested 3 million EUR in a new production plant in Jelgava. Private, family-owned, German company that already have 11 plants world wide opened production plant SIA "AKG Thermotechnik Lettland" in 2006 and started to produce heat exchangers in 4.6 ha large production site in Jelgava City. Its employs 80 metalworking specialists and it is anticipated that this number will be increased in the near future. In addition, AKG also

benefited from Jelgava's developed metalworking sector which provided an abundance of highly skilled metalworkers. Latvia became the first country in Eastern Europe to receive investment from AKG. The plant is currently operating at the capacity of 80,000 cooler and heat exchanger units a year and the final products are mainly exported to the EU, where they are used as production components by such companies as Daimler Chrysler, Audi, Porsche, and Ferrari.

In 2003 Swedish enterprise „Stram" was established that had 48 employees and produced metal consumer products mainly for the export. In 2008 Swedish enterprise EuroMaint Rail on the premises of the former Agriculture Machinery Plant opened the first industrial site outside Sweden. It is expected that there will be 35 employees. In relation with the opening of the plant the Swedish Ambassador informed that in Latvia there are around 500 Swedish enterprises and Jelgava was chosen due to good geographical position, industrial production traditions and skilled labour force. As well important factor the Swedish Embassy has good cooperation contacts with Jelgava City Council in other fields, for instance the Ice Sculpture Festival in Jelgava is represented by Swedish artists. The new director informed that there were no problems to attract skilled personnel and a few of them were former employees of closed sugar plant.

Russian-Latvian AMO Plant (established in 2005) were shares having both Moscow and Jelgava City Governments and Private Company AS „Ferrus", is an effort to re-establish car production in Jelgava. It is plan to produce and assembly light trucks and buses by cooperating with Russian company „ZIL" (planned to begin in 2009) with main markets in CIS, Baltic States. Currently the company has 26 are employees. It is expected that investments will reach 30 million EUR; the assembly line is expected to produce 1500 trucks and buses annually. It is expected that some 300 new employment places will be created.

There are large metal processing enterprises on the fringe of the City Jelgava – in Ozolnieki rural municipality - where Jelgava's inhabitants are having jobs - DINEX Latvia, GEOR and ELK PLUS. DINEX Latvia was established in 2000 and has 325 employees. The company is producing exhaust systems for trucks, busses and light commercial vehicles both for the aftermarket and for original automobile industries. Its turnover in 2005 was 8 million EUR and in 2007 already 17,5 million EUR. DINEX Latvia SIA is a part of DINEX Group with base in Denmark. DINEX Latvia's main markets are EU and USA.GEOR is established in 1991 and has 80 employees. It is also located in Ozolnieki rural municipality on the fringe of Jelgava City. The plant is manufacturing various metal products from the metal sheets, wire and tubes. Main

markets are Denmark, Norway, Switzerland and Latvia. GEOR turnover in 2007 was 2,9 million EUR. The company ELK PLUS was founded in 2003 and has 29 employees. The company is manufacturing of polyurethane articles (PUR) for automotive and mechanical engineering industry. Its main markets are Denmark, Lithuania, Latvia and Germany. Its turnover in 2006 was more than 1,2 million EUR.

Table 4: Foreign investments in Jelgava City and Jelgava District enterprises, data on 28.06.2006

Country	Number of investments	Total amount of investments in thousand LVL
Denmark	48	3168438
Germany	22	2252080
UK	6	1036250
Lithuania	19	541025
British Virginia	1	170214
Ireland	3	161800
USA	6	94170
Estonia	10	86620
Cyprus	1	86000
Russia	39	84303
Finland	5	76500
Seychelles	1	33078
Norway	13	23000
Belgium	1	13800
Belarus	12	6475
Netherlands	6	6400
France	3	6167
Sweden	3	6000
Italy	4	6000

Source: Lursoft

After 1991 the service sector was developing rapidly – particularly retail (large supermarkets are built after 2003) and consumer services, transport services (62 companies). 43 enterprises (mostly small ones) are specialized in design, architecture and various consultations. 19 companies are specialized in information technologies consultations. City has numerous branches of banking and insurance companies. Jelgava has premises for conferences and seminars although there is lack of places in accommodations. In 2007 there were five establishments with total 262 places in total. In 2006 in total 16 424 guests were served in Jelgava accommodations – this number is one of the lowest among Latvian cities, only Rezekne has lower number. In 2005 all Jelgava City municipal and state institutions were quipped and used with Internet, 56,7% of all employees used computers and internet - 42,2%. Since 2004 all 15 schools in Jelgava had Internet connection. In 2006 in Jelgava there were 14 Internet services providers.

42% of all employees in Jelgava City are working in public sector and this share is higher then national average due to educational establishments as well as due to public institutions of regional importance that are located in the city. Education and research are dominated in Jelgava by the Latvia University of Agriculture that was

established in 1939 as a first national effort to regionalize higher education in Latvia. In 2006/2007 there were 364 permanent employees with scientific degree from them 164 with PhD. There were in total 8,5 thousand students, 1012 students in postgraduate studies, 193 doctorate students, 12 new PhD holders in the university in 2007. Latvia University of Agriculture has study programs in agriculture, economics, engineering, veterinary medicine, rural building and infrastructure, landscape architecture, food technologies, forestry and since 1999 in social sciences and since 2000 in information technologies. University has created the Jelgava Science Technological Park that has an agro-biotechnology centre, an environmental technologies centre, the centre "Forest and Wood" and an information technologies centre. There were in total 544 persons involved in research and development in Jelgava City. In the Zemgale Planning Region in both 2006 and 2007 seven patents were registered yearly by the Patent Office of the Republic of Latvia – these are related to Jelgava City as it is the only one large size education and research centre in Zemgale, and it can be considered as second largest centre after Riga. Also as Jelgava is in close proximity to Riga it gains from and mutually interacts with the research and education institutions located in the capital.

From graduates of the schools (form 12) in Jelgava that are continuing their studies (in total 565) in school year 2006/2007 - 85% did that in higher educational establishments and 168 graduates or 30% did not leave Jelgava and continued their studies in Latvia University of Agriculture (source: Jelgava City Council). Jelgava Scientific Library is a main public library in Zemgale Planning region and has 154 thousands units. In 2006 Jelgava City spent 125 thousand LVL for 272 culture events that had in total 151 thousand visitors.

For vocational education in Jelgava in the recent years the import role is for the Adult Education Centre of Jelgava Region that has in total 3054 trainees in 2006 and 102 programs in 2007 in fourth directions – languages, information technologies, communication and management and the Metalworking Training Unit that for instance prepares such specialists as welders, computer-aided design draftsmen and computer-aided manufacturing technicians in mechanical engineering; CNC programmers, operators and service technicians. Jelgava has 3 vocational schools and there were in total 1326 pupils in 2007, for instance Jelgava Trade Secondary Scholl prepares also metalworking specialists. As in higher education Jelgava pupils are studying in the vocational establishments of Riga are in larger variety of directions – there are 26 vocational schools in Riga with total 15903 pupils in 2007, as well as there are also

vocational schools in other parts of Riga region – for instance in Jurmala there is 2 with 1075 pupils.

Investment and Development Agency of Latvia (LIAA)'s research on Latvia small and medium enterprises needs for innovations show that companies are increasingly more motivated to take part in innovative and research activities. The assistance that is used most - LIAA, professional associations and trade and industry chamber and innovation centres. Higher education establishments are in the last position, and for instance the Latvia University of Agriculture were ranked in as 21st least important assistance provider. Two major barriers were mentioned – a lack of information and a passivity of scientists.

Jelgava Business Incubator is established in 2007 with the support of the European Structural funds with the aim to assist the beginners and new enterprises (not older than 3 years). The assistance cannot exceed 15000 LVL. The following branches are supported – industrial production (NACE D), except drink (NACE 15.19) and tobacco (NACE 16) production; computers and activities related with them (NACE 72); scientific activities (NACE 73); architectural and design, technical assessment and analyses (NACE 74.20, 74.30) and design services (NACE 74.84).

In the old site of the former RAF factory the company "NP Properties" created the NP Business Park Jelgava that is the largest industrial park in Latvia at the moment by investing 6,1 million EUR. It is expected that until 2009 when re-construction and improvement of technical infrastructure will be completed total investments can reached 20 million EUR. NP Properties has aim to create it as the biggest and most state-of-the-art business park in the Baltic States as it has „a favourable business environment, excellent infrastructure and strategic location make the park a perfect place for both light and heavy industry and logistics companies". It is expected that there can be created 1000 working places. Total size of area is 23 ha, space available for rent - industrial and warehouse premises – 97 thousand m2, offices - 13 thousand m2. At the moment 18 thousand of premises already rented and activities launched 10 enterprises. For instance, in 2007 in the Jelgava Industrial Park the new plant was opened by the "Mārupes metālmeistars" by co- financing of the EU funds, total investment is 657 thousand LVL from them 361 thousands LVL are national and EU structural funds co-financing. It is expected that 14 new working places will be created. Company "Mārupes Metālmeistars" is established in 1999 and has 50 employees. Business profile is manufacture of steel constructions for hangars, steel

roof and wall coverings and elements as well as sheet metal parts. Main markets are in Sweden and Baltic States.

The project of the Zemgale Technological Park is under implementation in area of 11 ha. In 2007 the Building Material Innovation and Testing Centre was opened in the technological park, The Centre has laboratories most advanced among Baltic States and it will focus on the Baltic States and wider European market. The centre was created by the cooperation among the Jelgava City Council, Latvia University of Agriculture, Riga Technical University and three associations of the industry – the Technology Development Forum, the Association of Mechanical Engineering and Metalworking Industries, and the Association of Building Materials and Technical Experts. The project's funding reached 3,44 million EUR, it received funding from the EU 2,84 million EUR and 600 thousands EUR from the Latvian government applied research funding. It is expected that this centre can increased the production of building materials in Latvia by 15-20%.

The future projects are planned in Jelgava as follows: support to Latvia University of Agriculture in the fields of ICT, biotechnology, organic syntheses in pharmacy, new material technologies, engineering sciences, wood production sciences and technologies; activities towards supporting innovations and the creation of new products by collaborating between the university, entrepreneurs and municipalities, and a pilot model implementation of the system of gasification and cogeneration of wood waste by the university staff for a local wood production enterprise.

Latvian Ministry of Economics continues provide support within the program "Innovation centers and business incubators" that has a aim to promote innovation infrastructure by strengthening the capacity for the cooperation of municipalities, higher educational establishments and research institutes, to support the initiatives of universities and regional municipalities to establish business incubators, as well as supporting innovation centers and services of the business incubators for establishment and development of the new innovative enterprises . In 2007 it was approved by the Latvian Council of Ministers that 1628212 LVL will be spend for the eleven projects of innovation centers and business incubators. In 2008 respectively 1641594 LVL is foreseen for this purpose. Among these eleven approved are two from Jelgava – Latvia University of Agriculture's Business and Technology Incubator ZTP „Valdeka" (address: Rīgas iela 22 Jelgava, LV-3004) and Jelgava City Council project "Establishment of Business Incubator" (address: Svētes iela 33, Jelgava, LV-3001). Other projects are located in two in Riga (Riga Technical University and Stradins

University) and two in Venstpils (projects by the City Council and the Ventspils University) as well as one in Livani, Ogre, Valmiera, Tukums and Rezekne.

Functional relations with MEGAs, other BSR cities

Jelgava City has close links to the Latvian capital city Riga as Jelgava is a part of Riga functional region. This proximity is used by Jelgava inhabitants and enterprises although Jelgava and Zemgale Planning Region strategic documents somehow ignores the proximity to the capital city and focuses on its own resources both human and natural and opportunities. Like possibility to intensify cross-border cooperation due to close proximity to Lithuania and to gain more from the favourable location on the conjunction of the roads and railway lines.

References

Jelgavas pilsētas attīstības stratēģija [Jelgava City development strategy] 2004 – 2010: Gala redakcija, Jelgavas dome, 2004

Jelgavas pašvaldības 2006.gada publiskais pārskats [Jelgava Municipality Annual Report], Jelgavas dome, 2007

Jelgavas pilsētas integrētās attīstības programma [Jelgava City Integrated Development Strrategy] 2007. – 2013.gadam, Jelgavas dome, 2007

Zemgales plānošanas reģiona Attīstības Stratēģija 2003-2010 [Zemgale Planning Region Development Strategy], Zemgales plānošanas reģiona padome, Zemgales attīstības aģentūra, 2003, www.jelgava.lv/index.php?cmd=get&cid=17348 , accessed 03.2008

Zemgales plānošanas reģiona darbības plāns 2004.-2007. gadam [Zemgale Planning Region Action Plan], Zemgales plānošanas reģiona padome 2004

Zemgales uzņēmējdarbības attīstības programma [Zemgale Entrepreneurship Development program] (2006-2011), Zemgales attīstības aģentūra un Pohl Consulting & Associates, 2005

Jelgavas rajona plānojums un stratēģiskās attīstības programma [Jelgava District Spatial Plan and strategic Development program], Jelgava, 2003

Jelgava in figures - 2007 www.jelgava.lv/index.php?cmd=get&cid=24793, accessed 03.2008

Jelgava City Council website www.jelgava.lv, accessed 03.2008

NP Jelgava Business Park www.industrial-park.lv/index.php?pid=0215 accessed 03.2008

Jelgava Business Incubator www.jic.lv , accessed 03.2008

Euroregion "Saule" Regional marketing, http://www.eureg-saule.jrp.lv/lv?l=en , accessed 03.2008

Investment and Development Agency of Latvia (LIAA) www.liaa.gov.lv , accessed 03.2008

Association of Mechanical Engineering and Metalworking Industries, www.masoc.lv , accessed 03.2008

- ***Svetly (Russian Federation/Kalingrad)***

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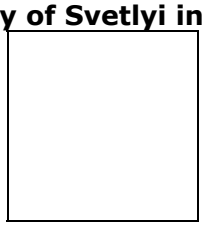
Background information

The municipality «Svetly urban district» is located in the western part of Kaliningrad region, on the southern edge of Sambian peninsula, which is adjacent to the coast of Kaliningrad Lagoon. The maximal length of the territory of the district is 16 km from west to east, and 8 km from north to south. In the west the district borders on Baltiysk urban district, in the north - on Zelenogradsk district, in the east – on Kaliningrad city, from south and southwest the territory of the district is bounded by water area of Kaliningrad sea channel and Kaliningrad Lagoon (Primorskaya buxta/the Seaside bay). The town of Svetly (2640 hectares or 33% of the territory of the district) together with its coastal settlements forms agglomeration, consisting of industrial and housing zones, which are continuously stretching almost 14 km along the Kaliningrad sea channel.

Figure 10: The location of the city of Svetlyi in the Kaliningrad region



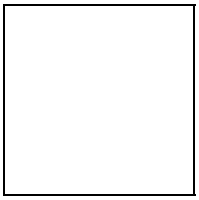
The square of the district is 8023 hectares. Settlement land and agricultural land (46, 0 % and 24, 4 % accordingly) occupy the main part of the territory of the municipality. However at the present day the largest part of lands has limitation in terms of practical use. Large tracts of land of the district are occupied by forests (14.6%) and military-oriented lands (8.0%).

The district has well-developed transport infrastructure. There is a branching network of motor roads of regional and local importance on the territory of the district. Motor roads with solid surface connect all settlements of the district between each other and the regional center. Railway Kaliningrad – Baltiysk passes through the territory of the district (the railway has several railway stations). It has also the branch to the town of Svetly, the station "Baltiysky les", the terminal OOO "Lukoil – Kaliningradmorneft", state district electric power station-2, OAO «Balko», and 3AO «Sodruzestvo–Soya». Several motor roads of regional importance connect the district with the settlements of resort zone of Kaliningrad seashore (the settlement of Primorsk and the town of Baltiysk). The airport is located within 38 km from Svetly.

Location along the Kaliningrad sea channel (that is the main component of infrastructure of transport complex of Kaliningrad region), the shortest outlet to the Baltic Sea, availability of developed berthages, wide variety of transport connections (water, railway, and motor roads), availability of well-developed transport infrastructure and several sea terminals – every point gives preferences the district in comparison with other municipalities.

As of 01.01.2006, 747 subjects of economic activity were registered on the territory of Svetly urban district (1,6% out of the total number of economic entities registered in Kaliningrad region). The picture 3.1 shows the dynamics of specific weight of enterprises and organizations registered in Svetly urban district in total number of legal bodies in Kaliningrad region in 2001- 2005. The rate of growth of enterprises amounted 8% per year on average (in the region it was of 10, 6%).

Figure 11: Change of share of legal bodies registered in Svetly urban district in total number of legal bodies in Kaliningrad region in 2001-2005.



The economy of the district is rather diversified. There are various enterprises of machinery, electric power, wood-working, furniture, food, and light industry, building industry, transport complex, agriculture and fishing enterprises, as well as enterprises of trade, catering and service. Manufacturing activities and transport take the dominating place in the structure of production and rendering of services. Thus on the share of manufacturing activities 65, 6 % fall but transport and communication take 20,8 %, out of total volume of production.

In existing territorial division of labour the economy of the district has expressive industry-and-transport specialization.

Enterprises

The main directions of industry specialization which form economic base of its development are as follows:

- fishing industry (about 1/3 of fish products of the region is produced in Svetly);
- ship-repairing and steel construction industry, airplanes repairing;
- woodworking and furniture industry;
- food industry;

- cargo transportation and port activity.

The important tendency of development of town economy is creation of new, non-traditional (for regional economy) manufactures based on use of advantages of special economic zone as well as benefits of transport-and-geographical location if the district. At the same time investment activity is one of the most significant components of economic development of Svetly municipality.

However, because of a number of reasons, municipal support and regulation of investment activity on the territory of Svetly urban district have limited temper. It is explained by the fact that federal and regional legislation limit opportunities for investment privileges for municipalities. On the other hand, obligation to fulfill various social liabilities does not provide for any special measures on stimulating of investors. Investments in transport infrastructure and manufacturing activities are the basis for development of local economy.

Own funds of enterprises and organizations are the main sources of financing of investments into economy of Svetly urban district. Beside already implemented projects the district has a number of perspectives, commercially and socially important investment projects. These projects can make good effect on the socio-economic situation in the municipality. One of the biggest investment projects is ЗАО "Sodruzestvo-Soya" (already mentioned in the article), which was organized in 2007. The number of workers is 700. The main activity of the enterprise is deep processing of oil content crops. State and local authorities greatly assisted in paper work and today contribute to development of the enterprise.

Institutions of education

State Educational Establishment «Vocational school №3».

International cooperation

Administration of the town has twin agreement with Polish town Kenshin and is being implemented a couple of international projects financed by Interreg programmes.

Perspectives for development

Among the perspectives for development of the town we can also consider socio-economic cooperation with Kaliningrad city, as well as the Russian and Polish settlements adjacent to Vistula Lagoon. In its mission the district is aimed at formation of modern industrial urban center with dominating role of industrial-and-port and transport-and-cargo complex. In the future, Svetly urban district (as well as Baltiysk,

Svetlogorsk, Gurievsk, Mamonovo, and Bagrationovsk urban districts – the western part of Kaliningrad region) could enter the agglomeration centered by Kaliningrad city.

- ***Sovetsk (Russian Federation/Kalingrad)***

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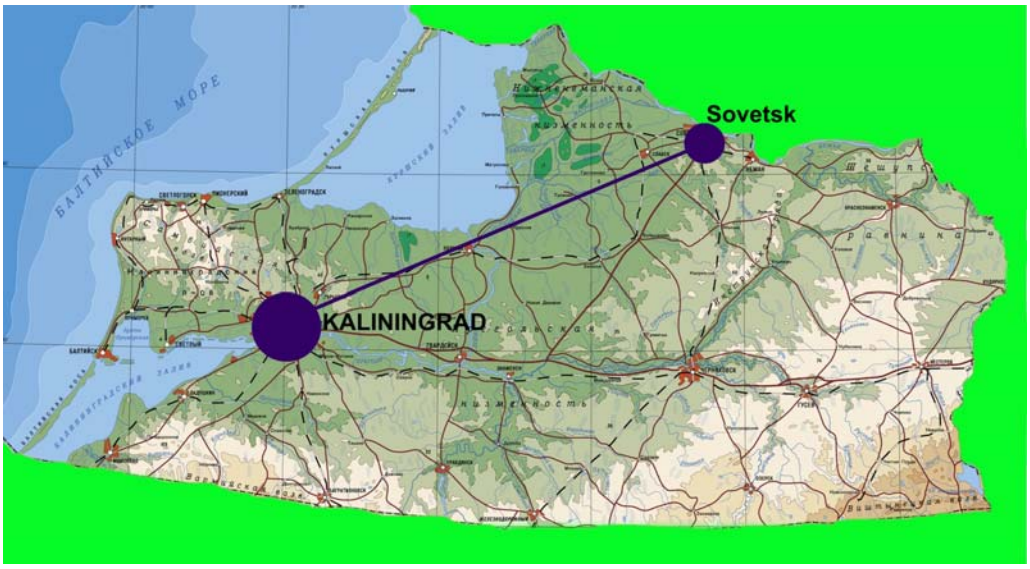
The municipality "Sovetsk urban district" is situated in the north of Kaliningrad region on the left bank of the river Neman.

Figure 12: The location of the city of Sovetsk in the Kaliningrad region



The total area of the municipality makes 43,75 km2, where 2,62 km2 are comprised by forest resources and 0,48 km2 by water pools. The population of the municipality is 43.7 thousand people, 33.9 thousand people of which are able bodied. Official unemployment rate is 4%.

Sovetsk (former Tilzit) is the town of oblast subordination. It is the third after Kaliningrad and Chernyakhovsk on population and economic development. It is situated 123km to the north-east from the regional centre-Kaliningrad. In the north it borders on Lithuania, in the north-east- on Neman district, on the north-west - on Slavsk district.

Today having multifunctional economic base, developed socio-and-cultural sphere (higher education institutions and high schools, theatre, administrative institution), border crossing points with Lithuania, one the main external economic partners, and being the transport nodal point (railway station, road and railway bridge over the river Neman), the town acts as an informal interregional centre.

The town has road and railroad connections with the regional centre. In the centre of Sovetsk there is a twenty-four-hour road and railroad border crossing point connecting Kaliningrad regions with Lithuania. The most developed fields of industry are: pulp-and-paper industry (wallpapers, cardboard, paper, market cellulose), food industry (cooked meats, tinned meat, bakery, mayonnaise, ketchup, sweets, crab sticks, convenience fish, mineral water of 4 types (including «Tilzitskaya»), macaroni products, alcohol production and etc.), mechanical engineering and metal processing (high pressure hoses, abrasive rings for railroad grinding machines, cable-household-mounting conducting products , television equipment assembly (more than 10 titles), and other products), light industry (top children's and adult jersey outwear, top women outwear, hosiery, gloves, hats and other products), transportation and other services.
"Sovetsk urban district" has beneficial economic-and-geographical location. For the neighboring areas the town of Sovetsk acts practically as informal interregional centre in terms of crossborder, international, both external and internal economic, social and cultural activity.

Culture

Sovetsk is the town of historical significance. It became popular after Tilzit peace treaty concluded here in 1807 by Alexander I and French emperor Napoleon Bonaparte. There remained a house where Alexander I used to live at the time of signing the treaty and in 1992 there was a memorable plate installed in honor of Tilzit peace treaty. We can name some other historical monuments that are of interest to us such as: memorable stone and oak in honor of Prussia victory over France in 1871; Queen Louise bridge (the beginning of the XX century); WWI soldiers' cemetery; WWII soviet warriors' memorial complex; monument to warrior-liberator (the copy of the famous monument installed in Treptower Park in Berlin). The theatre of Sovetsk "Tilzit teart" is also very famous in Kaliningrad region and Russia.

Enterprises

A list of basic enterprises acting on the territory of the town comprises the following:

- Fuel-energy complex:
  - Eastern electric networks of OAO «Yantarenergo»,
  - Sovetsk interdistrict branch «Energosbyt»;
- Timber processing complex:
  - AOOT «Sovetsk pulp and paper mill»,
  - OOO «Sota»,
  - OOO «Amber»,
  - OOO «Forest industrial company»
  - and others;
- Communication:
  - OAO «Elektrosvyaz», the branch of Sovetsk (Zone Center),
  - Sovetsk interregional postal communication centre;
- Construction industry:
  - OOO «Sandorgas»,
  - OOO «Novy zamok»,
  - Municipal undertaking «Mong»,
  - OOO «Vostochnaya stroitelnaya kompaniya»
  - and others;
- Food industry:
  - OAO Meat-processing plant «Sovetskiy»,
  - Production enterprise «Sovetskiy Piscekombinat»,
  - ЗАО «Tipek»,
  - OOO «Novaya Ruta»,
  - OOO «Notomas»,
  - OOO «Sovlit»,
  - and other;
- Industrial production:
  - Associated public unitary enterprise experimental plant «Metallist»,
  - «Baltgasstroicomplect», the branch of Neman ЗАО;
- Agriculture:
  - Sovetsk veterinary laboratory,
  - Public institution «Vetstanciya»
  - and other.

Each field has its own more or less vivid specialization:

- Fuel-energy complex: delivery of electric power, electric power selling to physical and legal persons;
- Timber processing complex: market cellulose, paper, cardboard, wallpapers, construction details production (door and sash), lumber;
- Communication: providing common usage communication services: local and innerzone telephone communication, telegraphy, data communication and telematic; wire broadcasting of sound programs; providing postal service, modern communication services, pension delivery, subscriptions and delivery of newspapers, magazines, serial publications;
- Construction: assembly, finishing and sanitary-engineering works, line construction, building construction and etc.;
- Food industry: meat, cooked meat and bakery products, caramel, ketchup, mayonnaise, mineral water and etc.;
- Industrial production: railroad maintenance track machines, fishing, fish-processing and refrigerator ships, bedroom suites, hall furniture sets;
- Agriculture: providing veterinary service;
- Others: outwear tailoring, children tricot tailoring, hose production.

Figure 13: SWOT–analysis of town competitiveness

Strategic directions	Internal factors		External factors	
	Strong sides	**Weak sides**	**Strong sides**	**Weak sides**
Economic and finances	1. Border proximity and presence of border crossing, availability of external resources.	1. The town depends on all types of energy resources.	1. Investments attraction for development of manufacture, tourism, system of life-support and realization of social programs.	1. Outstripping growth of economy and living standards Kaliningrad.
	2. The town has well-developed multibranch industrial infrastructure.	2. High wear rate of basic urban economy funds.	2. Introduction of innovation technologies.	2. Growth of tariffs on energy resources.
	3. Participation of Sovetsk urban district in Euroregion "Saule" and international projects on various topics.	3. High prices for energy resources.	3. Increase of contact function of the border and cross-border cooperation.	3. Lagging behind the European level of development of technologies of township-forming enterprise.
	4. The town has tourist potential and historical popularity.	4. Weak positioning of the town in the system of economic relations, absence of brands.	4. Increase of global inflow of direct foreign investments in Kaliningrad region, including the town of Sovetsk.	4. Insufficient level of integration into economic environment of Russia.
	5. High level of retail goods turnover and high level of its growth.	5. Deficiency of qualified work and administrative staff.	5. Fastening of local manpower and attraction of additional one at the expense of neighbouring	5. Insufficient finances volume.
				6. Imperfection of interbudget relations.

	6. Policy directed on support and development of small business.		districts.	

Strategic directions	Internal factors		External factors	
	Strong sides	**Weak sides**	**Strong sides**	**Weak sides**
Spatial development of urban district	1. Geographical location in transport system of Kaliningrad region, perspective international corridors.	1. Insufficient use of main transport ways and the border.	1. There are perspective platforms for future construction of houses and industrial complexes on the territory of the town.	1. Aggravation of ecological problems.
		2. Environment pollution by industrial wastes.		2. The underdeveloped land market and real estate market.
	2. Availability of the program of gasification of dwelling stock and industrial objects.	3. Absence of long-term town-planning policy.	2. the municipality «Sovetsk town» is situated on the left bank of the river Neman (international water-way)	3. Absence of state and private investments into development of housing and communal services and infrastructure.
	3. Developed system of communication and telecommunications.	4. Insufficiency of urban transport communications.	3. Reforming of housing and communal services and social sphere.	4. Lack of housing stock, slow construction and updating of housing stock.
	4. The external road network is well-developed; there is railway in direction Sovetsk - Moscow.	5. The underdeveloped branch of garbage processing.	4. Maintenance of reconstructed transport corridor (shipping, warehouse, logistic and other services).	5. Worn out and unprofitable engineering infrastructure.
				6. Essential drawbacks of street-road network structure.

	5. Presence of urban recreational zone.	6. Undeveloped mortgage lending system in housing sphere.	5. Attraction of credits and loans under guarantees of the budget for solving of issues of housing and communal services reforming, realization of investment projects.	7. Raw and power dependence of the town.
Social sphere	1. High provision by educational establishments, including initial, secondary, and higher education institutions.	1. Low birth rate (per 1000 people). 2. Deterioration of general demographic situation parameters.	1. Growth of population income and final consumption (including increase of the personal savings)	1. Inflow of senior age migrants. 2. Absence of the appropriate level of system of cultural-and-educational establishments.
Strategic directions	**Internal factors**		**External factors**	
	Strong sides	**Weak sides**		**Strong sides**
Social sphere	2.Low unemployment rate 3. Significant rates of development of social support system.	3. High number of the pensioners registered in organizations of social protection. 4. Low provision with hospital beds. 5. Population decrease, high rate of mortality, ageing.	2. Increase of address subsidizing at the expense of the federal and regional budgets.	3. Aggravation of social problems, social stratification.

		6. Lack of experts in the field of education and public health services.		
Improvement of social cooperation system	1. Development of effective interaction between business and authority.	1. Rather low civil initiative of separate population layers.	1. Attraction of citizens to solving of local problems.	1. Insufficient activity of public organizations and institutions (trade unions, parties, association, communities, clubs).

The SWOT-analysis shows that Sovetsk owns the required potential for gradual development of urban area and sustainable development of the municipality. However it is necessary to concentrate as much as possible on several strategic directions, on which it is possible to carry out breakout, qualitative leap in urban area development. A level of innovations in economy is very low. Finances on research and development as well as funds for development of infrastructure required for innovation potential increase of the town are not stipulated.

Institutions of education

State educational establishment "Trade-and-technologic vocational school №12» (resource centre of food industry);

State educational establishment "Sovetsk movie technical college";

State educational establishment "Kaliningrad regional college of Art and Culture";

Filial of St.Petersburg State University of Art and Culture";

Filial of Russian international Academy of Tourism.

International cooperation

Administration of the town has twin agreements with the towns of Kiel (Germany), Taurage, Pagegiai and Shelali (Lithuania), Lidzbark and Belchatov (Poland).

Conclusion

In the strategy of town development Sovetsk urban district points proximity of the border, presence of border crossing and availability of external resources as well as developed multibranch industrial infrastructure, participation in Euroregion "Saule" and

international projects on various problems, tourist potential and historical reputation of the territory, geographic location in transport system of Kaliningrad region and perspective international corridors as the strong internal points on the territory of the district. Among the external opportunities of the district we can emphasize attraction of investments (including foreign ones) for development of production, tourism, life support system and implementation of social programmes; increase of transboundary cooperation and contact function of the border; location of the left side of Neman river (international water way) and rendering of shipping, storage, logistic and other services within maintenance of new constructed transport corridor.

- ***Gusev (Russian Federation/Kalingrad)***

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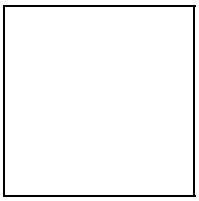
Background information

Gusev urban district is located in the eastern part of Kaliningrad region, on the river Pissa and the river Krasnaya. Its railway station is in 115 km to the east from Kaliningrad. In the north the district borders on Krasnoznamensk district, in the east – on Nesterovsk district, in the south - on Ozersk district, in the west - on Chernyakhovsk district, in the northwest - on Neman district.

Figure 14: The location of the city of Gusev in the Kaliningrad region



As of the 1-st January 2006, 606 economic entities (legal persons) are registered on the territory of the municipality, 330 of them are acting. The structure of subjects of economic activity is resulted below according to the patterns of ownership. The most specific density in the total amount of enterprises is on the share of enterprises of private pattern of ownership namely 60% (201 units). A share of enterprises of municipal pattern of ownership is 19% (60 units), public organizations – 13% (42 units).

The structure of economic entities formed in previous years stayed the same. Out of 330 really acting enterprises, establishments and organizations 32% are concentrated in trade, 13% - in industry, 3% - in transport, 2% - in domestic consumer services, 5% - in agriculture, 6% - in management institutions, 13% - in public organizations, 6% - in building, 31% - in education, culture, health care, 14% - in other industries.
The greatest quantity of enterprises (87 %) is concentrated in the town.

Enterprises

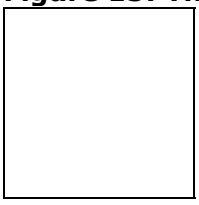
According to estimation, more than 40 industrial enterprises are registered on the territory of the district. Their basic share falls at private enterprises (90 %). The industrial enterprises of state and municipal patterns of ownership have 10 %.

The most significant for town economy are:

1. OAO "Microdvigatel" - produce low power engines (up to 180 WT) for home appliances, machine-tool construction and other purposes. A commodity market is Russia, Belarus, and Lithuania.
2. OOO " Scientific and production centre Amatel" produce equipment for professional kitchens, garments. A commodity market is Russia, the Western Europe.
3. OOO "Gusevmoloko" produce dairy products including cheeses. A commodity market is Russia, Hungary, Poland.
4. OOO "Gusev chleb" produce bakery and confectionery products. A commodity market is the Kaliningrad region.
5. The Kaliningrad hydro-geological expedition is engaged in investigation of underground waters and resources, building materials. Activity field is the Kaliningrad region.
6. OOO "Mixed fodder factory" is engaged in manufacture of mixed fodder for large horned livestock, pigs, a bird and a fish. A commodity market is the Kaliningrad region.
7. Municipal unitary enterprise "Gusevteploset" - render services on heat supply for the town.
8. Municipal unitary enterprise "Wodokanal"
9. Public enterprise "Gusev timber enterprise" - protection of woods.
10. Gusev thermal power station "Yantarenergo" produces heat and electric power. A commodity market is the Kaliningrad region.

In sphere of small business mixed fodders, knitted and garments, window and door blocks from plastic structures, metal constructions, sidewalk plates and other production furniture are being produced.

Figure 15: The branch structure of the industry



Machine manufacturing occupies the greatest density in branch structure of the industry, its share has 23 %, in comparison with the year of 2000 it has decreased 19,2 percentage points. On the second place butter-cheese-producing and dairy industry stands (21 %), in comparison with 2000 its share in total amount of industrial production has increased 11 percentage points. The third place is occupied by electric power industry and mixed fodder industry - both have 17 %. In 2006 they had 16% and 7% accordingly.

At the time being about 1800 people are employed at the town industrial enterprises. This number makes 12,6 % of actively working population Gusev. One of the objectives of the Strategy of socio-economic development of Kaliningrad region in terms of small towns is assistance to establishment of innovative economy, directed on achievement of global competitiveness, allowing effective building in the current tendencies of global cooperation and specialization, movement of all kinds of capitals and distribution of commodity, financial and human flows.

The effective mechanism of investments attraction into real sector of economy is creation of special zones of technological development, placed within the limits of industrial zones or platforms according to the Plan of town-planning development of a territory of municipality, and provided with industrial infrastructure necessary for implementation of business activity. The final objective of such activities of technical support of investments is creation of favorable conditions for implementation of investment projects related to creation of small, ecologically safe, and mainly hi-tech enterprises on the territory of Gusev urban district. One of these enterprises is «General Satellite NT», a company engaged in manufacture of digital TV receivers. The company «General Satellite NT» started its work in 2007, and today number of employees amounts 150 people (it is planned to increase up to 1500). Thanks to and guided by on the Strategy of socio-economic development of the municipality "Gusev urban district" till 2016 which is dedicated to assistance to development of these enterprises, local government, in particular the administration of "Gusev urban district" is interested in development of the enterprise and promotes implementation of other investment projects on the territory of the municipality. At present day the enterprise is not cluster-making because it is a pioneer of Gusev innovative economy, but it has all preconditions and perspectives. The enterprise uses such innovative methods as: technology of superficial installation; system of production testing; system of quality management ISO 9001 and conformity to specifications ISO TS 16949. There are other highly technological enterprises on the territory of the district (OOO "Producty

Pitaniya", 3AO "M-Industriya", OOO "Prankor") which are interested in producing on the territory of "Gusev city district".

Perspectives for development

The municipality «Gusev urban district» also connects perspectives for its development with improvement of railway and motor transport infrastructure and border crossing Gusev-Goldap. Gusev actively participates in implementation of the projects of cross-border cooperation (in the framework of Neighbourhood Programme Lithuania-Poland-Kaliningrad region of the Russian Federation); moreover it is the leader on number of international projects among municipalities of Kaliningrad region. The district is actively engaged in investments attraction into processing industry (on the basis of local resources) and agriculture, implements transboundary project on creation of technopark, and puts development of transboudary historical and nature tourism as its task. Today the municipality is dealing with replacing the Russian Secretariat of the Euroregion «Neman» from the town of Chernyakhovsk to Gusev.

Electronic town

Realizing the necessity of infrastructure changes, administration of Gusev district undertook a number of successful attempts on introduction of information technologies into urban environment and urban management. The authorities of the district have been dealing with integrated innovative resources development for two years and have got some results which have no analogs even in Kaliningrad. For a year of work video control system has been installed. This system lets controlling motor situation on the streets of the town as well as atmosphere in parks and near houses areas in dark time of a day. Informatization of urban space and automation of urban housing and communal services must become the next step of the conception of electronic town.
Training of young staff in the educational institutions of the town together with active investment and innovation policy of the administration of the town will let making essential leap in innovation economy of the district.

For today the priority directions of introduction of innovations is not only industry but sphere of service. New methods and technologies in logistic sphere let the administration of the town to optimize the work of transport node. As Gusev is situated in the centre of the eastern part the region this location let Gusev has the status of the main town in the east of the region which has enriched logistic links with Goldap (Poland) and Kibartay (Lithuania). The important peculiarity of strategic development of Gusev district is active attraction of business representatives and NGOs to the

process of planning and management of a town. Such three-sided cooperation lets making up socio-and-economic policy of the district more effectively.

International cooperation

International cooperation of the town is on a high level. It is the member of following Euroregions: «Baltica» (since 1998), «Lyna-Lava» (since 04.09.2003), «Neman» (since 04.04.2002). And has twin relation with: Goldap (Poland) since 1992; Oletsko (Poland) since 2004; Kazlu Ruda (Lithuania) since 2002; Volkovysk (Belorus) 2002. It is also to mention that the municipality is being implemented about 10 international projects within Interreg 3A Neighbourhood Programme Lithuania-Poland-Kaliningrad region of the Russian Federation and Baltic Sea region Interreg 3B Neighbourhood Programme.

- ***Chernyakhovsk (Russian Federation/Kalingrad)***

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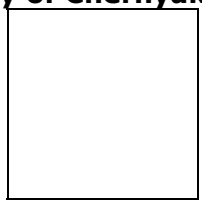
Background information

Chernyakhovsk urban district is located in the centre of Kaliningrad region. The distance to Kaliningrad is 86 kilometers. The northern part of Chernyakhovsk urban district borders on Neman and Slavsk municipalities, on the east it borders on Gusevsk municipality, on the south-west - on Pravdinsk and Gravdejsk municipalities, on the south it has border with Ozesk municipality.

Figure 16: The location of the city of Chernyakhovsk in the Kaliningrad region



Chernyakhovsk urban district is the fourth town in the region on the territory after Zelenogradsk, Gurievsk and Slavsk districts. The square is 128,6 thousand hectares (1286 km2), that makes 9% out of whole territory of Kaliningrad region, including agricultural lands (79,4 thousand hectares), forestry (30,7 thousand hectares), surface of water bodies (780 hectares), and the square of the town of Chernyakhovsk itself (5,68 thousand hectares). Chernyakhovsk urban district is the second town on population after Kaliningrad. As of 1.01.2006 the population amounted 53995 people or 6% out of population of the whole region.

Chernyakhovsk urban district takes advantageous economic-and-geographic location. It is situated at the confluence of the main transport axle: «West-East» (Kaliningrad - Chernyakhovsk - Vilnus), «North - South» (Poland - Krylovo – Chernyakhovsk - Bolshakovo - Sovietsk - Riga). Such geographic location of the municipality predetermines great potential opportunities for active development of transport-and-industrial complex of the town and growth of its population. Chernyakhovsk is the second supporting transport node and the largest railway junction after Kaliningrad. Here 4 subdivisions of Kaliningrad railway namely the station of Chernyakhovsk, locomotive depot, track maintenance department, and wagon depot of the station of Chernyakhovsk are located.

There is a unique for Kaliningrad region and Russia "junction" of European narrow-gage railroad and Russian (broad) railroad with operating transshipment infrastructure, high-qualified staff, customs, great potential for increase of freight flows out of Russia towards Europe and out of Europe to Russia and the Baltic States.

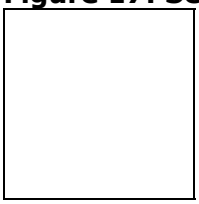
Highways of seven directions, including international transport corridor (9Д/9D) Vilnus-Kaliningrad that is the branch of the Pan-European Transport Corridor IX, lead to the town. Through the town highways from west to east connect Chernyakhovsk with Kaliningrad and Russia, but from north to south - with Lithuania and Poland. The distance from Chernyakhovsk to the border with Lithuania is 60 km, to the Polish border is 40 km, to Kaliningrad is 86 km, to Vilnus is 260 km, to Warsaw is 480 km, to Moscow is 1200 km.

On the territory of Chernyakhovsk as the result of junction of the two rivers, Angrapa and Instruch, the river Pregolya, which represents itself the main water « arteria» of Kaliningrad region, springs from. Being 123 km long it goes in the central part of the region from west towards east and flows into Kaliningrad Lagoon in the area of Kaliningrad. Till 1990 water transportations was carried out on the rivet Pregolya. Military airdrome of state aircraft is located in the southern part of the town. Deposits of haydite clays, peat, sand-gravel material storage are located on the territory of the municipalily.

Enterprises

There were 1,225 enterprises acting on the territory of Chernyakhovsk municipal district in 2005. It made 3 % out of regional rate or 10.3 % out of regional rate without Kaliningrad. There were 8,530 people working in the large and average enterprises. In the light of forms of property the main part of enterprises falls on privately owned enterprise (76, 1 %). The enterprises of state ownership and public property make up 11, 5 %.

Figure 17: Sectoral share of enterprises in Chernyakhovsk



Production of machines and equipment, including equipment fortelevision takes the greatest share in industry structure (79, 5%), production of foodstuff, including alcohol drinks is of 5, 9%, production, transfer and distribution of energy makes up 4,3%, harvesting operations is of 2,33%, and motor transport is of 2,23%. According to the state statistics on the territory of the urban district the number of profitable organizations is growing from 34 in 2001 to 44 in 2003 at simultaneous decrease in number of unprofitable organizations from 36 to 14, while throughout the Kaliningrad region growth of number of profitable enterprises ossurs simultaneously with growth of number of unprofitable enterprises.

Local enterprises – producers are landmarked on home, regional and external (foreign and Russian markets).

- OAO «Chernyakhovsk car-repair factory» - producing of pipe fittings, engines overhaul, produce and realization heat- power. Numbers of the workers on the average – 210 persons. Markets of finished products: 6% - local and regional markets; 94% - Moscow, St. Petersburg, Central and South Russia, Ukraine, Byelorussia. Markets of import stuff and componentrys: 24% - local and regional markets: Kaliningrad, Gusev, Sovetsk, Neman; 76% - Moscow, St. Petersburg, Voroneg, Volgograd, Orel, Chelyabinsk, Byelorussia, Lithuania, Poland. Specific weigth of export goods is 33% in total production.

- Kaliningrad regional public organization of disabled «Televolna» - factory of TV assembling, including LCD screens, complex common technique (microwave ovens, vacuum cleaners), DVD. It's a part of "Polar" Moscow holding. Numbers of workers on the average – 800 persons. Finished production markets: 3% - local and regional markets; 97% - Moscow, St. Petersburg, and other regions of Russian Federation. Import stuff and components markets: 10% - regional market; 90% - Russia Federation, China, Korea, and Poland.
- OOO «Chernyakhovsk meat packing plant» - meat production producing. Number of workers on the average – 204 persons. Import stuff markets: 30% - home and regional markets; 70% - Samara, Sverdlovsk, Chelyabinsk, Bryansk regions, Stavropol Territory. Import stuff and components markets: 1% - regional market; 99% - Germany, Poland, and France.
- OOO «Finestra» meat packing plant» - chicken and beef minced producing. Number of workers on the average – 90 persons. Finished stuff markets: 100% - Moscow.
- OOO «Baltic confectioner firm». Chocolate, sugary and confectionery producing. Number of workers on the average– 160 persons. Finished production markets: 12% - home and regional markets; 27% - Moscow, 44% - St. Petersburg, 17% - other regions. Import stuff and components markets: 40% - home and regional markets; 30% - Moscow; 30% - St. Petersburg.
- OOO «Wine cognac house «Aliyans-1892» - cognac producing and realization. Number of workers on the average – 123 persons. Finished stuff markets: 30% - home and regional markets; 70% - fifty largest regions of Russian Federation. Import stuff and components markets: 25% - Moscow; 75% - Lithuania, Czech, France.
- OOO «West-Alco» is producing and saling alcoholic drinks (vodka, wine, wine drinks). Average number employed is 140 persons. Finished product markets are: 69% - local and regional markets; 31% - Moscow market. Import markets are Russia, Poland, Lithuania, Germany, the Netherlands, and Czechoslovakia. Specific weigth of export goods is 31% in total production.
- State unitary enterprise «Chernyakhovskoye state district road enterprise «Rajavtodor» - exploitation of highways of general use. Average number employed is 109 persons. Finished product markets are: 100% - local and regional markets. Import markets: 20% - local and regional markets, 80% - Moscow, Saint-Petersburg, Bryansk, Belarus, and Ukraine.
- OAO «Carieroypravlenie» (career management) - mining operation, extraction of gravel and sand pits. Average number employed is 145 persons. Finished product (broken natural stone, gravel, sand, sand-gravel mixture) markets are: 100% - local and regional markets. Import markets are Kaliningrad, Moscow, Saint-Petersburg, Kostroma, Kursk, Voronezh, Chelyabinsk, and Belarus.
- Federal State Institution «Chernyakhovsky leschoz» - the main activity is forest management. Average number employed is 175 persons. Finished product (merchantable wood and wood) markets are: 65% - local and regional markets; 35% - Sweden. Specific weigth of export good is 35% in total production.
- OOO «Odriks» - production of goods out of noncorrosive steel. Average number employed is 25 persons. Finished product markets are: 14% - local and regional markets; 86% - Saint-Petersburg, Vilnus. Import markets are: 3% - Kaliningrad, Chernyakhovsk, Sovietsk; 97% - Vlnus. Specific weigth of export goods 65% in total production.
- OOO «ARVI-NPK» is producing chemical fertilizers. It is the one factory in Russia, which has the new for Russia technology namely mechanical mixing. Total costs of construction is 15 mln dollars. Average number employed is 50 persons. Finished product markets are: 15% - local and regional markets; 85% - Lithuania. Import markets: 75% – Kaliningrad; 25% - Poland. Specific weigth of export good is 85% in total production.
- OOO «Torfo» - peat extraction and sale. Average number employed is 34 persons. Finished product markets are: 15% - local and regional markets; 85% - Germany, the Netherlands, and Belgium. Import markets are: 95% - local and regional markets. Specific weigth of export good is 85% in total production.

- OOO «Skandinavskie okna» (Scandinavian windows)- production and sale of goods made of reinforced plastic (windows, doors, stained glass, double-glazed windows). Average number employed is 21 persons. Finished product markets are: 100% - local and regional markets. Import markets: 90% – Russia; 10% - Poland, Lithuania.

International cooperation and advantageous for investment

Administration of the town has twin agreements with the towns of Wengozevo (Poland) since 2003, Brzeg-Dolny (Poland) since 2005, Mariampole (Lithuania) since 2001, Kirchheimbolanden (Germany) since 2002 and Beziers (France) since 2000. The main part of international activity including joint projects is conducted within Euroregion "Neman".

Clusters

At present on the territory of the municipality two clusters are being formed namely transport-logistic and horse breeding. Today the transport sector of the municipality represents the economic cluster. Its already formed character is mostly determined by historical and geographic-and-transport conditions. At the same time this sector demands additional investments into related infrastructure – logistic companies, hotel services. Fully formed transport cluster (technological availability, qualified labour resources, and developed related infrastructure) will have strong competitiveness on the international level owing to significant geographic and economic development preconditions of the sector in Europe. According to the concept of the Strategy of socio-economic development of the Russian regions the priority of regional development of the Russian Federation is forming out of regions – «engines of growth» the new supportinf base of the county. Base regions (engines, growth centre) could be supported at the expense of formation of centers of infrastructures, primarily transport, giving the Federal staus to some of the transport junctions and corridors.

In future the sport horse breeding centre located in the Chernyakhovsky urban district can present finished economic cluster. ЗАО «Horse factory Georgenburg» has been already the brand of the town of Chernyakhovsk on the international level. At the time being there are many preconditions for development of this cluster, however, there is a need of extra investment into related infrastructure, information-and-advertising promotion of the municipality as the Eastern-European centre of horse breeding. This economic cluster has good competitiveness as the centre of conduction of sport competitions of international level as well as the potential for creation of Eastern-European centre of hippo-therapy of regional, federal and international importance in Chernyakhovsk.

- ***Gatchina (Russian Federation/Leningrad oblast)***

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Gatchina is to be found in the Leningrad Oblast, 45 km to the south of Saint Petersburg. The first mentioning about Gatchina dates back to 1499 when the status of the city was assigned in 1796. Until 1917 Gatchina was the Emperor residence. A lot of monuments of culture and architecture preserved in the city. A basic sight is the state reserve museum 'Gatchina' established on the facilities of the palaces and park ensembles of the 18th-19th centuries.

After World War II Gatchina developed as a scientific-industrial satellite city of Leningrad. By the population size today Gatchina is the largest city of the Leningrad Oblast – 89.1 thousand people (as of January 1, 2007), including employable population – 51.4 thous. people (2003) .Gatchina is to be found on the crossing of the railway and motor trunk roads connecting Petersburg with the Baltic countries, Ukraine and Belarus. More than 800 industrial enterprises operate in the city of such sectors as construction, instrument-making, metal and plastic working, machine-building, woodworking and furniture manufacturing, food and light industry.
The city has a significant scientific, scientific-engineering and innovative potential represented by a group of governmental research institutions and private businesses. The leading ones include:

- Petersburg Institute for Nuclear Physics of the Russian Academy of Sciences engaged in researches into nuclear physics, molecular biology, computer technologies and electronics,
- branch of the State Research Center 'Elektropribor',
- branch of the Central Research Institute for construction materials 'Prometheus'.

The city numbers 14 general education schools, 4 vocational-engineering specialized schools, pedagogical college and Leningrad Regional Institute of Economy and Finance and 4 branches of higher educational institutions. In general, a share of those employed in science and education makes 14% (in the industry -20%). Despite there are no prospects for development of Gatchina as an official science town within the existing legal framework, this city is included in the number of small cities of Russia with the scientific-technical city-forming function.

Science-Intensive Clusters[17]

In the Soviet period a group of enterprises of the defense complex with a significant scientific potential was established in Gatchina. Many of such enterproses managed to surmount a protracted recession of the 1990s, to preserve its scientific potential and research-production basis. Furthermore, the Institute for Nuclear Physics of the USSR Academy of Sciences engaged mainly in fundamental researches was located in Gatchina. These subjects make the core of the innovative city complex and now makes three basic clusters: *research into materials and nanotechnologies, instrument-making, and education.*

Major companies of the first cluster are the Petersburg Institute for Nuclear Physics of the Russian Academy of Sciences and branch of the Central Research Institute for Construction Materials 'Prometheus'.

The Petersburg Institute for Nuclear Physics of the RAS (PINP RAS) was established in 1971. The institute employs more than 2 thousand people, including 300 candidates and 70 doctors of sciences.

Basic lines of scientific researches of the institute: physics of elementary particles and fundamental interactions, nuclear physics, physics and technology of nuclear-power reactors and accelerators, molecular and radiation biophysics, medical applied researches, optical measurement methods, information technologies, new methods and apparatus for scientific researches. The institute actively cooperates with the first-string research centers of the world, participates in the implementation of governmental scientific and scientific-technological programs.

Such scientific-technological projects of the institute has a national significance as the use of the proton beam for curing oncological diseases, production of isotopes for medical purpose, development of new medicinal-genetic and cytological practices for diagnostics of mass diseases, development of semi-conducting detectors of high resolution and creation of portable substance composition analyzers, development and creation of new generation of ionizing radiation monitors, isotope treatment of heavy water, creation of holographic metrological instruments of sub-micron and sub-second accuracy.

The outlooks for the development of the Nuclear Physics Institute are mainly connected with construction of high flow research reactor PIK power 100 MW with a flow of heat neutrons 1,015 n/cm2 sec (commissioning is envisaged in 2012). The PIK reactor project got the top assessment from the international examination and the International/National Center for neutron researches may be established using its

[17] This and further sections are based on the materials of expert interviews conducted in

capacities. Furthermore, it is considered the project to establish a technopark using the facilities of the institute – center for nanoelectronics.

The Central Research Institute for Construction Materials 'Prometheus' (Saint Petersburg) with the scientific-production experimental base found in Gatchina is the world leader in the development of unique metal, polymer and composite materials, and also their production technology, including nuclear technologies. Nearly all national naval (submarine and surface) fleet is built from the materials designed by the enterprise and a large number of civil vessels of various types, classes and purpose (ice-breakers, tankers, dry-cargo vessels, bulkers, ferries, air-cushion vessels and hydrofoils, harvesting vessels, mining vessels, etc.) Materials and technologies worked out at the institute have ensured designing of all types of national atomic energy plants. A special pride of the institute are efforts in designing a package of construction materials for energy intensive units of future nuclear fusion reactor.

The establishment of the cluster using these institute is connected both with the general subject-matter of researches – materials science and general experimental base. The branch of the Prometheus research institute with unique apparatus for materials science connected activities is found within the location of the RAS INP.

The *instrument-making* cluster is formed in Gatchina by the branch of Elektropribor governmental research center of the central research institute, Petersburg Institute for Nuclear Physics, NPF Swift OOO, etc.

The governmental research center Elektropribor is a leading institute of Russia in high-precision navigation, gyroscope and gravimetry. The Institute performs a complete set of works from fundamental-search researches to commercial production in such areas as marine navigation equipment, inertial systems, equipment for space explorations, gravimetrical systems, instruments and elements of fine electromechanics, medical equipment, and wind energy plants.

The Petersburg Institute for Nuclear Physics as it has already been mentioned, in addition to the fundamental researches, is engaged in the applied development work, including designing of various research instruments.

NPF Swift OOO (established in 1990, staff 180 people) is successfully engaged in the designing, production and delivery of fire-fighting means, fire alarm systems, smoke removal systems and fire warning systems. NPF Swift OOO performs all scope of works related to automatic equipment and security of buildings. The company carries out works at any sites – from apartments and cottages to industrial enterprises, business centers and museum complexes.

Gatchina in February 2008.

The *education cluster* covering school and higher education, post-graduate education, and advance training of teachers is successfully being formed using the facilities of the RAS Petersburg Institute for Nuclear Physics.

The following was established on the initiative of the institute:

- Optional courses for schoolchildren with in-depth study of natural science disciplines (mathematics, physics, chemistry, and biology);
- Neutron physics department at the Academic Physico-Technical University (Saint Petersburg) specializing in scientific lines of researches of the RAS INP;
- Interdepartmental scientific-educational center 'Biophysics and Physics of Condensed State' (together with the Saint Petersburg Polytechnical University);
- Branch of the computer physics department of the faculty of physics of the Saint Petersburg State University;
- Municipal educational institution Center for Information Technologies to teach children and improve the skills of educationalists in computer work;
- Association of universities in order to increase a scientific-pedagogic activities and involvement of students in the research activities (unites 18 RF universities).

According to expert estimations the innovative sector of the city employs about 5 thousand people in general, it gives 20-25% of total volume of industrial production.

Small businesses of scientific-technological and innovative profile begin a more weighty role in the city economy, especially in telecommunications and instrument-making. However, the city potential has not used in full in such area and has large reserves.

The strategy of scientific-technological and innovative development in Gatchina should be targeted at the increase of input of science and technology in socio-economic development of the area, improvement of ecological situation and health of population, strengthening of connection of connection between science, production and education.

Support of Science-Intensive Clusters

The effective Russian laws restrict rigidly the competence area of municipal authorities on the issues of local significance which excludes all economic issues not directly connected with the life support of the municipality. In this regard no special programs intended for development of the said innovative clusters are developed in Gatchina, only educational sphere in part of school education makes an exception. At the same

time the municipal authority seeks to support innovative development and seeing that Gatchina has all weighty preconditions and advantages.

More specifically, in 1996, on the initiative of the government of the Leningrad Oblast and Administration of Gatchina the Gatchina city Fund for Support of Small Business (the Fund) was established. The structure of the fund includes business center providing consultancy and educational services and business incubator. The Fund renders also information, office, advertising, legal services to entrepreneurs, assists in participating of city and regional shows, find business partners, etc.

Furthermore, the Gatchina Commerce and Industry Chamber established in 1992 on the initiative of the leading companies and entrepreneurs of Gatchina and Gatchina District is the body supporting innovative enterprises. The chamber renders consultancy and information services, expert and certification services, education and professional development of the company's staff.

On the level of the Leningrad Oblast regional governmental bodies pursue their own innovative policy. More specifically, in 2000 it was adopted the Concept of scientific, scientific-technological and innovative development of the Leningrad Oblast for a period up to 2005 ; the regulation of the government of the region 'Priority Lines of Innovative Development of the Leningrad Oblast for 2005-2006'; in 2004 the regional task-level program 'Scientific-Technological and Innovative Development of the Leningrad Oblast for 2004-2008' was drawn up.

Despite this experts have stated their opinion on an insufficient governmental support to the development of innovative activity in small cities, including Gatchina. A package of forms offered for such support is quite wide: from direct financing and protectionism to preferential taxation and assistance in personnel training for innovative businesses. The personnel problem is outlined as the most acute for further development of science and science-intensive branches in Gatchina.

Territorial Boundaries of the Clusters

Gatchina and enterprises and entities found within it experiences a significant influence of such megapolis as Saint Petersburg. The subjects of all Gatchina cluster referred to above incline to cooperate with partners found in Saint Petersburg. The forms of such interaction are quite varied. A number of research firms have the head offices in Petersburg (Governmental Research Center 'Elektropribor', Central Research Institute for Construction Materials 'Prometheus'). The Petersburg Institute for Nuclear

Researches maintains vast contacts with research and educational institutions in the megapolis, including joint departments, educational-research centers. On this ground one could state that the territorial boundaries of science-intensive cluster of Gatchina extend to Saint Petersburg.

Functional Connections and Interaction with Other Countries and Cities

In Russia, Saint Petersburg is a major large city with which functional connections of the Gatchina science-intensive clusters exist. But the contacts are not only limited to it as a matter of course. For instance, the RAS INP maintains close contacts with such science towns as Dubna, Serpukhov (Moscow Oblast), and academic research center in Novosibirsk, etc. where they are engaged in similar or allied scientific researches.

Foreign partners of the institute in the performance of major projects in fundamental and applied physics are:

- The European Center for Nuclear Researches, P.Scherer Institute, Switzerland
- E. Fermi National Laboratory, US Brookhaven National Laboratory
- Laue-Langevin Institute, France
- DESY Research Center, GSI Research Center, FRG, etc.

The Elektropribor institute carries out contracts with foreign companies of Germany, India, China, Norway, Republic of Korea, Finland and Japan.

References

http:// www.meria.gtn.ru/city/index.html
http://www.elektropribor.spb.ru
http://www.prometey.nw.ru
http://www.pnpi.spb.ru/index.html.ru

▪ *Novgorod (Russian Federation/Novgorod oblast)*

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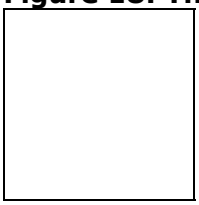
Great Novgorod is the administrative center of the Novgorod Oblast – one of the constituents of North-Western Federal District of Russia. Novgorod is the oldest city of Russia founded back in 859 A.D., historical center of the Russian statehood and culture. It is a museum-city, distinguished by its unique architectural monuments, icon

painting, famous frescoes and archeological evidence. In 1992 by resolution of UNESCO the Novgorod monuments were classified as world heritage, and in Russia only Moscow and Saint-Petersburg have the same status.

The city is located 180 km away from Saint-Petersburg, and 606 km away from Moscow. Closeness to major cities and convenient communication with them (Oktyabrskaya railway and Moscow – Saint-Petersburg highway) have always promoted economic and cultural development of the city. In addition, the highway Scandinavia –Center, main cargo traffics – Finland, Germany, Sweden (Pic. 1) pass through the region. The number of residents of Great Novgorod (as of January 1, 2007) is 216.7 thousand, including those of employable age – 141.9 thousand people (65.5 %).

Figure 18: The location of the city of Novgorod



Over 111 thousand people are engaged in the city economics, over 26 thousand of them are engaged in small business (19 % of employable population)[18].The leading role in the total output of products is held by enterprises of such processing industries as chemical, food, paper-pulp, machine-building, production and distribution of electric energy, gas and water.

In fact, the production potential of the city is determined by 10 large and medium-size industrial enterprises, and 5 of them manufacture about 75 % of industrial products. They are *Acron* OJSC (chemical industry), *Amcor Rentsch Novgorod* LLC (paper and pulp industry), *Dirol –Cadberry* LLC (food industry), *Novgorod Metallurgic Plant* CJSC (metallurgy), group of companies "Splav" (engineering).

There are 1420 small enterprises in Novgorod. The majority of them are engaged in trade and catering – 36.0 %. Furthermore, industry – 14.4 % of small enterprises, construction – 12.3 %, transport – 4.9 %, hotel services – 5.1 %, real estate operations – 18.9 %[19].

Innovation potential of Great Novgorod is determined by the availability of scientific and educational establishments, departmental institutions, experimental design offices. The key position is held by the Yaroslav the Wise Novgorod State University.

Scientific and innovation potential and innovation clusters[20]

Development of science and technologies in Great Novgorod is aimed at production of competitive products, attainment of economic growth, securing the defense and safety, development of education and culture. The Yaroslav the Wise Novgorod State University (NovSU) is the center of innovation development. The University includes 6 institutes and 17 faculties, engaged in training for 64 specialties and directions (14 thousand students are being educated).

[18] ibid.
[19] http://www.adm.nov.ru/web.nsf/pages/framesmain

NovSU as an educational and innovation complex is a recognized scientific research center in the North-Western region of Russia. The scientific researches are conducted in the NovSU in many areas: medicine, economics, humanities, pedagogy, electronic and informational systems, agriculture, environmental management, etc.

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[20] This and following sections are prepared on the basis of materials obtained in the course of expert's poll (Novgorod, February 2008)

The University scientists in the frames of international, interuniversity, and regional programs within 2002-2006 have completed about 900 research works, the topicality and priority whereof is protected by more than 400 author's certificates and patents. The scientific researches are coordinated in the NovSU by the scientific research center (SRC). Scientific and educational staff of NovSU is engaged in research work, the number whereof is over 900 people, including 100 doctors of sciences and 500 Ph.D. In order to carry out scientific research over 70 scientific centers, scientific research and training research laboratories are operating in the university. Including:

- Physical research center; laboratory of differential and integral equations;
- Automotive electronics laboratory; inter-departmental microelectronics laboratory; laboratory of solid-state optoelectronics;
- Environment and chemistry laboratory; agroecology laboratory;
- Regional public health center; family medicine center, medical-technical center;
- Laboratory of psychological support of specialists' training; laboratory of education sociology;
- Culture studies center, etc.

In order to develop fundamental researches the Novgorod scientific center of North-Western Section of the Russian Academy of Medical Sciences, laboratory jointly with the A.F. Ioffe Physico-Technical Institute of RAS (Saint-Petersburg), training scientific center for comprehensive program "*Cybernetics*" of RAS have been created on the basis of NovSU.

Since 1994 the university is carrying out innovation activities in three main areas:

- creation of science servicing infrastructure;
- implementation of innovation projects;
- innovations in education.

Different structural divisions of the university are engaged in the innovation activities, including those having the status of legal entity, for example, intellectual property department, experimental plant, Novgorod technological park. A great volume of research and development, including in the interests of the state defense, is carried out by *Omega* SUE, being a part of training-scientific-innovation complex of the university. *Omega* SUE has an immense scientific engineering potential, state-of-the-art computing devices, pilot production and serves as a kind of testing ground for introduction of research works into production.

For acceleration of research results implementation the university has signed general cooperation agreements with leading enterprises of Great Novgorod. Within the frames of these agreements the university scientists jointly with enterprise specialists have developed and introduced into production new types of photo-receiving and light-emitting devices, new generation television receivers, SHF microelectronic devices, digital information processing systems, contactless commuting devices for digital automatic telephone stations, and have created a number of gas analyzers. Presently 11 small innovation enterprises are successfully operating in NovSU, in which 231 people are working (tutors, employees, postgraduate students and students). NovSU ranks the 22nd among Russia's higher educational establishments in terms of innovation potential.

Taking into account the three key factors – dominating role of university's scientific and innovation activities, specialization of other scientific institutions and sectoral structure of economy, – we may speak about formation of three main innovation clusters in Great Novgorod.

- *Electronics and radio-electronics* – the previous experience is the precondition, since during the soviet period Novgorod city and the Novgorod Oblast were one of the radio-electronic centers in Russia. Presently scientific and engineering research in this area is carried out by NovSU, Research Institute of Industrial Television *Rastr*, scientific-production enterprise *Planeta-Argall*, Special design and engineering bureau of relay equipment. A number of large and medium-size enterprises of electronic industry are located in Novgorod (*Spektr, Promest, Transvit-S,* etc.).
- *Machine-building* – the availability of a considerable group of this industry enterprises (*Splav-, GARO, Novgorodets, Polymermash, Energomash, Novavtoprom,* etc.) can be a precondition, as well as innovation activities of scientific institutions – NovSU, design-construction and technological institute of pipe fittings *Atomarmproekt.*
- *Education and informatization* - powerful telecommunication infrastructure of NovSU, highly professional staff and corresponding regional policy determine the central role of the university in creation and development of regional scientific and educational network of the Novgorod Oblast (RSEN). The corporate network of the university itself presently is connecting all structural divisions through high speed communication channels. The total number of connection points in the network with access to the Internet is over 1800. The university Internet center is the only non-profit internet provider within the Novgorod Oblast. Presently over 150 educational

establishments, city and regional libraries, hospitals, several public organizations are connected to RSEN and operating on permanent basis.

Support of innovation clusters

It should be acknowledged that science-intensive clusters in Great Novgorod are at the formation stage so far. According to experts' analysis only 20% of city enterprises can be considered actively innovative. The main problems in this connection are:

- acute shortage of qualified workers, engineering personnel;
- low competition allowing the industrial enterprises to use obsolete equipment (up to 70% of available equipment);
- low demand for research and development results on the part of business;
- insufficient development of innovation infrastructure, which restrains the transfer of technologies and commercial use of scientific developments.

The Novgorod technological park available within NovSU structure has modest capacity and performs a limited set of functions (business consulting, advertising, commercialization of technologies, marketing). There is a need for creation of city's innovation technology center. In addition, it is required to renew the activities of previously existed city's innovation fund, from which it would be possible on a competitive basis to finance prospective scientific developments and their implementation. Implementation of this and similar areas of support of innovation activities requires a special municipal program, which is not available so far.

One of important innovation development factors is the support of small business. Understanding this fact the city authorities have included into the plan of social and economic development of Great Novgorod for years 2006–2009 the item "support and development between municipal authorities and scientific specialists of educational establishments of Great Novgorod"21. The issue of assistance in securing the access of small business to modern technologies was touched upon in the municipal program "Guidelines for support and development of small business in Great Novgorod" (2000). In spite of this, according to experts the innovation activity of small enterprises is insufficient.

Functional connections and interaction with other countries

The main centers of scientific and innovation contacts of Novgorod in Russia are Saint-Petersburg and Moscow. One of interaction directions of Great Novgorod with BSR

[21] http://www.adm.nov.ru/web.nsf/pages/framesmain

cities is its membership in the New Hanseatic League. The League unites nearly 160 cities from 15 European states. In 1993 Novgorod became the first official members of the New Hanseatic League from Russia. In 2009 the XXIX Hanseatic Days will be held in the city. The League's activities are intended, among other things, for assistance to economic and innovation cooperation of enterprises of Hanseatic cities.

NovSU plays the most active role in the scientific interaction with European cities. Presently the university cooperates on the ground of long-term agreements with 26 higher education establishments from 11 countries. In 2006 the Center of cooperation with Scandinavian and Baltic countries was formed in the university for implementation of international scientific and education programs and projects, rendering organizational, methodological and consulting assistance in establishing contracts between educational establishments of North-Western Russia, with Northern Europe countries and Baltic countries.

The Novgorod university is a participant of the Association of Universities of the Baltic Sea Region, implements educational programs with the Tartu University (Estonia), with Norwegian University college Telemark, interacts in scientific practical activities with the Gotland University (Sweden), Geology Faculty of the Helsinki University, Ecology Institute of the Tallinn University.

References

http://www.novsu.ru
http://www.adm.nov.ru
http://www.velikiynovgorod.ru/
http://niac.natm.ru/