

Knowledge Dynamics in Regional Economic Development

A View from the Regional Level in Styria

▶▶ **My Personal Context – Styria and SFG**

▶▶ **Reflections on the Report**

▶▶ **Concluding Remarks**

AGENDA

- ▶▶ **Area: 16,387 km², Population: 1.2 mn**
- ▶▶ **Highly qualified employees**
 - ▶ Five universities, two universities of applied sciences
 - ▶ 40,000 students
- ▶▶ **50 % of Austria's R&D personnel in universities of technical sciences work in Styria**

Graz:

- ▶▶ **Capital of Styria**
- ▶▶ **Population in the Graz area: 390,000**
- ▶▶ **Second largest city in Austria**

Neuland Steiermark

Basic Facts

▶▶ **Gross value added product according to sectors (2007):**

primary sector:	EUR	903 mn
manufacturing sector:	EUR	11,118 mn
service sector:	EUR	18,569 mn

▶▶ **GDP per capita (2008): EUR 28,200**

▶▶ **Unemployment rate (2009): 7.7 %**

▶▶ **R&D Spending (2007): 4.3 % of GRP**



Neuland Steiermark

The No. 1 Innovation Province



Clusters & Networks

The Strength of Styria's Economy



Clusters & Networks

The strengths of Styria's economy

- ▶▶ **Research institutions, in which economics and science operate a joint research programme at the highest level**
- ▶▶ **The FFG (Austrian Research Promotion Agency) programme COMET encourages the development of centres of competence and includes three programs which are graded according to their level of ambition, public financing and duration**
- ▶▶ **Eight of a total of 20 Austrian K2/K1 competence centres are located in Styria – as well as four more with a Styrian branch**



Centres of Competence

Economics and Science in Unison

- ▶▶ **Founded in 1991**
- ▶▶ **Wholly owned by the province of Styria**
- ▶▶ **Financial support, clusters & networks, impulse centres, investors' service, start-up support, etc.**
- ▶▶ **Approx. 80 employees**
- ▶▶ **Grants given in 2009:
62 mn euro
for 2,272 projects**

SFG – Styrian Business Promotion Agency

Key Data

- ▶▶ **Investment project support and consulting – during every phase of the project**
- ▶▶ **Information support on the Styrian economy – establishing contacts to public agencies, clusters, networks, research organisations, etc.**
- ▶▶ **Analysis of potential sites – assisting companies in finding the best location for their business**
- ▶▶ **Advice about subsidies and grants – providing help in selecting the right support and financing programme**

Investments & Headquarters

Providing support for projects

▶▶ Educational “Context”

- ▶ Mechanical Engineering and Business Economics (MSc, Dipl.-Ing.), Graz University of Technology (Energy and Environmental Management Technology, Industrial Management)
- ▶ Dr. techn. (PhD), Graz University of Technology, Faculty of Mechanical Engineering and Economic Science; title of thesis: "Knowledge-based creation of value-adding-networks"

▶▶ Professional “Context”

- ▶ 1999 – 2001: BÖHLER EDELSTAHL GmbH, Project Engineer
- ▶ 2001 – 2005: Assistant Professor at the Institute of Industrial Management and Innovation Research, Graz University of Technology, Focus: Knowledge Management, Innovation Management, Production Management
- ▶ 2005 – 2009: Management consultant, Managing Partner of ISN – Innovation Service Network GmbH; Focus: Innovation Management and Knowledge Management
- ▶ Since 2009: SFG – Styrian Business Promotion Agency, Project Manager “Investor Service and Headquarter Consulting”

▶▶ Miscellaneous “Context”

- ▶ Knowledge Management Forum Graz, Chairman from 2003 until 2005, Associated Member since 2005 (www.wm-forum.org)

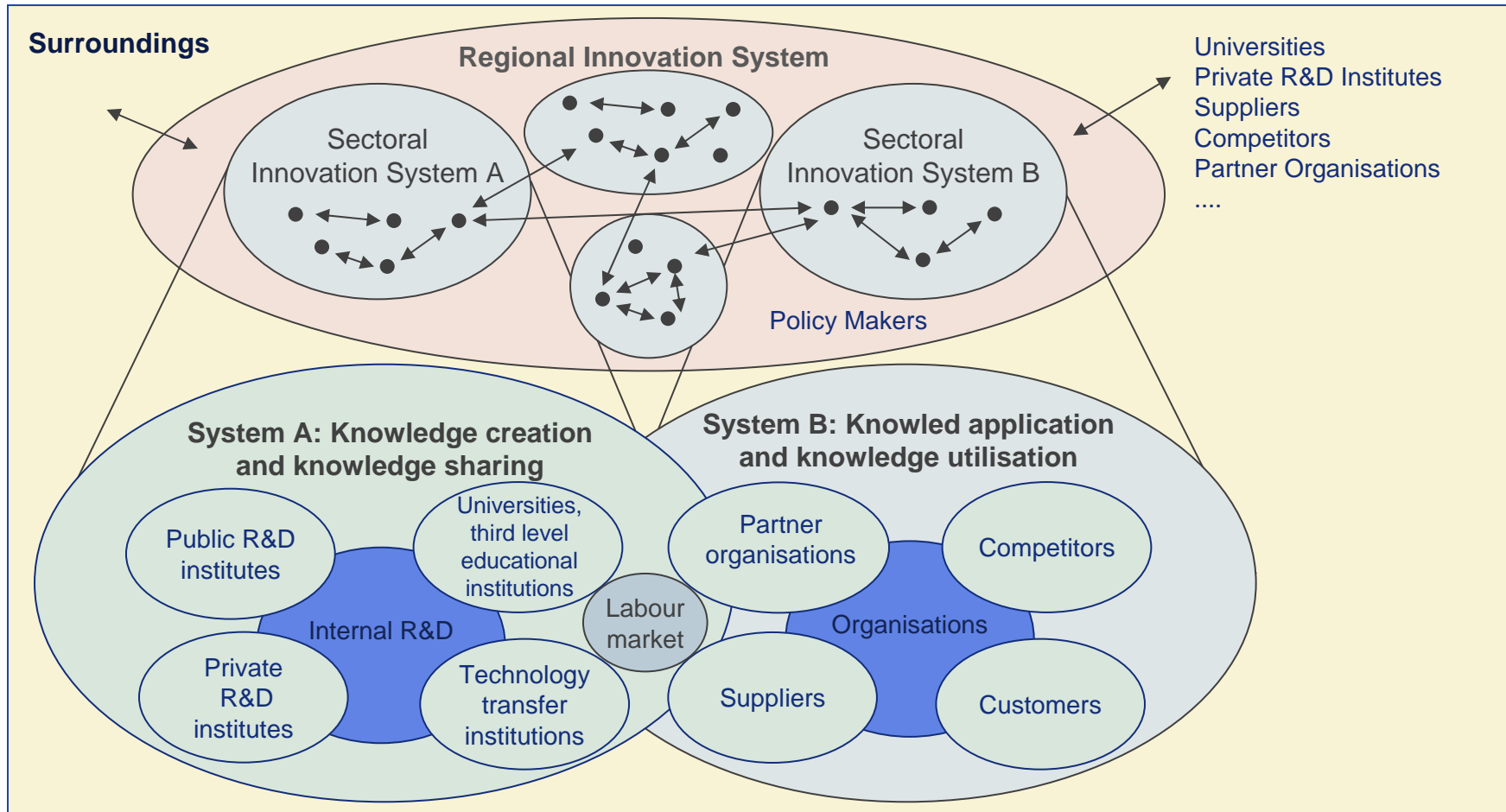
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- ▶▶ **Individual knowledge is the set of all possible memory states an individual is able to perform at any given time**
- ▶▶ **Knowledge is**
 - ▶ created dynamically
 - ▶ intrinsically linked to people
 - ▶ the result of a cognitive process
 - ▶ the basis for all action
- ▶▶ **Enlargement of knowledge base is essential for continuous innovation success**
 - ▶ Knowledge creation
 - ▶ Knowledge sharing

Knowledge Anchoring and Territorial Knowledge Dynamics

Knowledge Transfer in(to) the Regional Innovation System



Source: Wissensmanagement Forum Graz (ed.): Das Praxishandbuch Wissensmanagement – Integratives Wissensmanagement, Graz 2007

Knowledge Anchoring and Territorial Knowledge Dynamics

Possible Role of Clusters, HEIs and R&D Institutions



	Cluster & Networks	HEIs	R&D Institutions	Other Public Actors, Local and Regional Authorities?
Firm level interactions	<ul style="list-style-type: none"> • Connecting Actors – locally, nationally and internationally • Joint trainings • Joint Projects • ... 	<ul style="list-style-type: none"> • Post graduate education programs • “Live long learning” • Alumni organisations • Part time education programs • ... 	<ul style="list-style-type: none"> • (International) Research projects • Conferences and workshops 	
Workplace or job-related mobility	<ul style="list-style-type: none"> • Scouting “missions” • Joint exhibition displays • ... 	<ul style="list-style-type: none"> • Mobility of students • Mobility of staff • Part time lecturers • Job markets • Spin offs • ... 	<ul style="list-style-type: none"> • Mobility of research staff • Projects with international partners • Spin offs • ... 	
Acquisition of codified Knowledge	<ul style="list-style-type: none"> • Distribution of „acquired“ knowledge 	<ul style="list-style-type: none"> • Studies and publications for educational purposes 	<ul style="list-style-type: none"> • Studies and publications for research activities 	
Events	<ul style="list-style-type: none"> • Organizing events • Taking part in events 	<ul style="list-style-type: none"> • Organizing events • Taking part in events 	<ul style="list-style-type: none"> • Organizing events • Taking part in events 	

- ▶▶ **10th International Conference on Knowledge Management and Knowledge Technologies – the biggest in Europe**
 - ▶ researchers - in the English speaking scientific tracks
 - ▶ practitioners - in the German speaking “Praxisforum”
 - ▶ Matchmaking event
 - ▶ “Wissenstag Österreich”
- ▶▶ **Organized by Graz University of Technology and the Know Center Graz - Austria's competence center for knowledge management**

▶▶ **Founded 2004**

▶▶ **77 Cluster Partners**

▶▶ **Selected services**

- ▶ Business development
- ▶ Partner search
- ▶ Marketing and advertising
- ▶ benchmark trips and economic missions
- ▶ Workshops and company visits
- ▶ Information on internal and branch-related topics
- ▶ Seminars



Cluster: Human.technology Styria GmbH

Styria's health care technology cluster

Knowledge Dynamics and Interactions from a Firm Level Perspective

Different Actors – Different Roles



▶▶ **Private Companies**

- ▶ Usually the main actor
- ▶ Provide – mainly – synthetic knowledge
- ▶ Responsibility

▶▶ **Public Actors**

- ▶ Customers
- ▶ Financier
- ▶ Sometimes partners

▶▶ **HEIs and R&D Institutions**

- ▶ Breeding ground for innovations – provide analytical knowledge
- ▶ Provide well trained staff
- ▶ Provide infrastructure for R&D

▶▶ **Clusters and Networks**

- ▶ Provide contacts

Spin-Offs



▶▶ Mettop GmbH

- ▶ Leoben based engineering company founded in 2005
- ▶ Focuses on the improvement of processes and aggregates for producing non ferrous metals
- ▶ Partners are (amongst others):
 - ▶ University of Melbourne
 - ▶ Universidad de Santiago de Chile



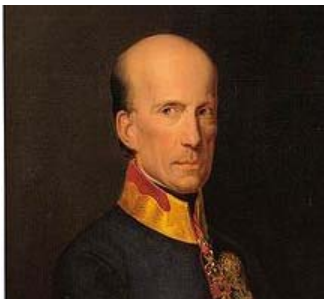
▶▶ Tyromotion

- ▶ Founded as a spin-off from Graz University of Technology in the field of medical engineering in 2007.
- ▶ Focuses on the development of innovative rehabilitation technologies by employing powerful mechatronic systems
- ▶ Partners are (amongst others):
 - ▶ Medical University of Graz, Medical University of Innsbruck
 - ▶ Graz University of Technology
 - ▶ Rehabilitation centres



Regional Preconditions

A Region's Heritage



▶▶ “Mur-Mürz Furche”

- ▶ Area North of Graz, between Fohnsdorf and Mürzzuschlag, especially the districts of Bruck/Mur, Leoben and Mürzzuschlag (65.000 residents)

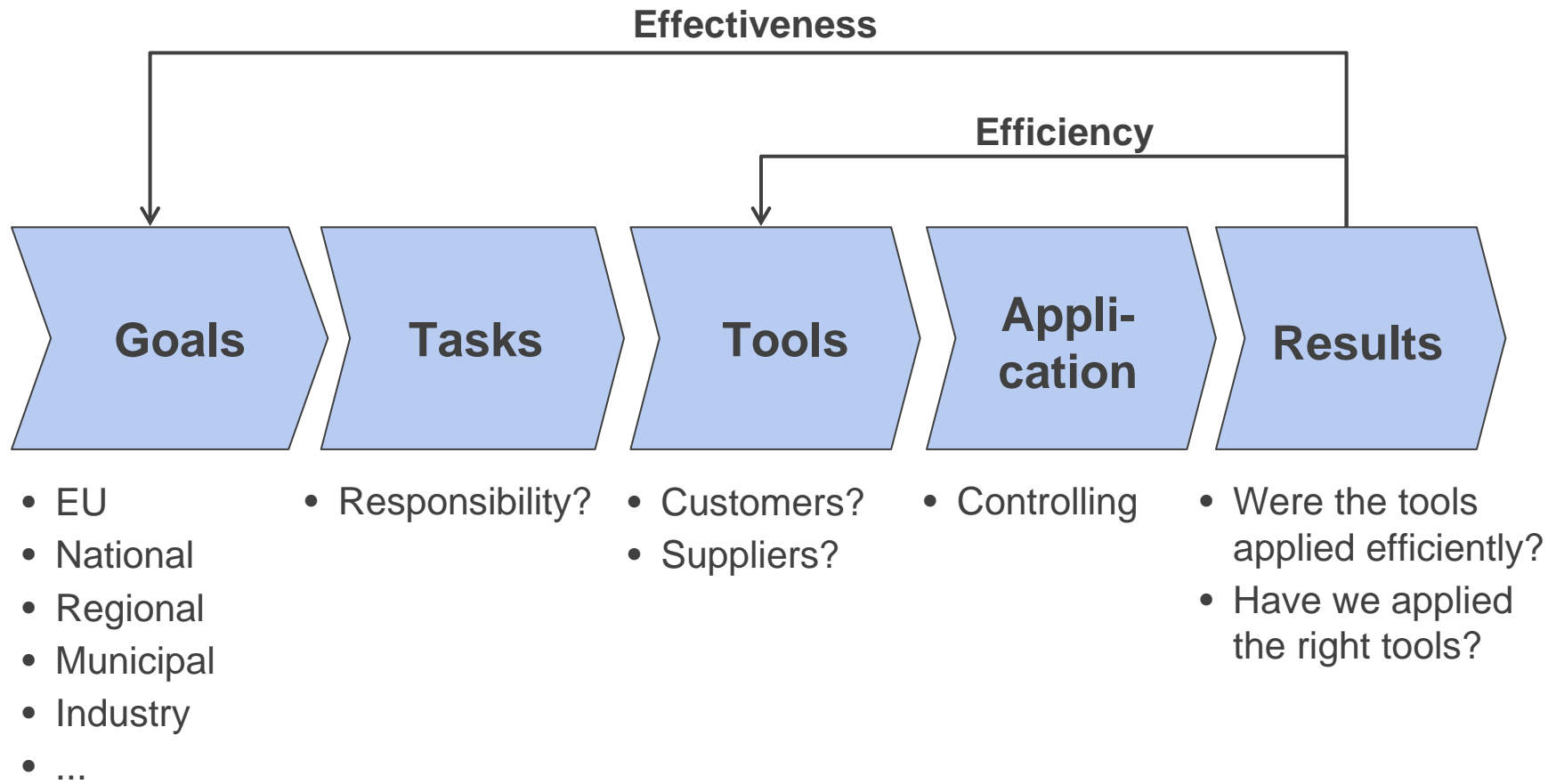
▶▶ Natural resources for the production of steel were available (iron ore, wood, water, coal), which lead to the development of a strong steel industry over the last couple of centuries

- ▶ Böhler, resp. VOEST
- ▶ Breitenfeld AG
- ▶ Joh. Penng AG
- ▶ ...

▶▶ Archduke John of Austria (1782 – 1859)

- ▶ Strong “impact“ on the development of Styria and it’s industry in particular
- ▶ Founded two universities – Graz University of Technology and University of Leoben
- ▶ Responsible for the routing of the Austrian Southern Railway from Vienna to Triest over the Semmering and through the Mura and Mürz valleys to Graz
- ▶ Founded a savings bank (still no. 2 in Styria) and the biggest Styrian insurance company

Knowledge Dynamics, Policies and Tools

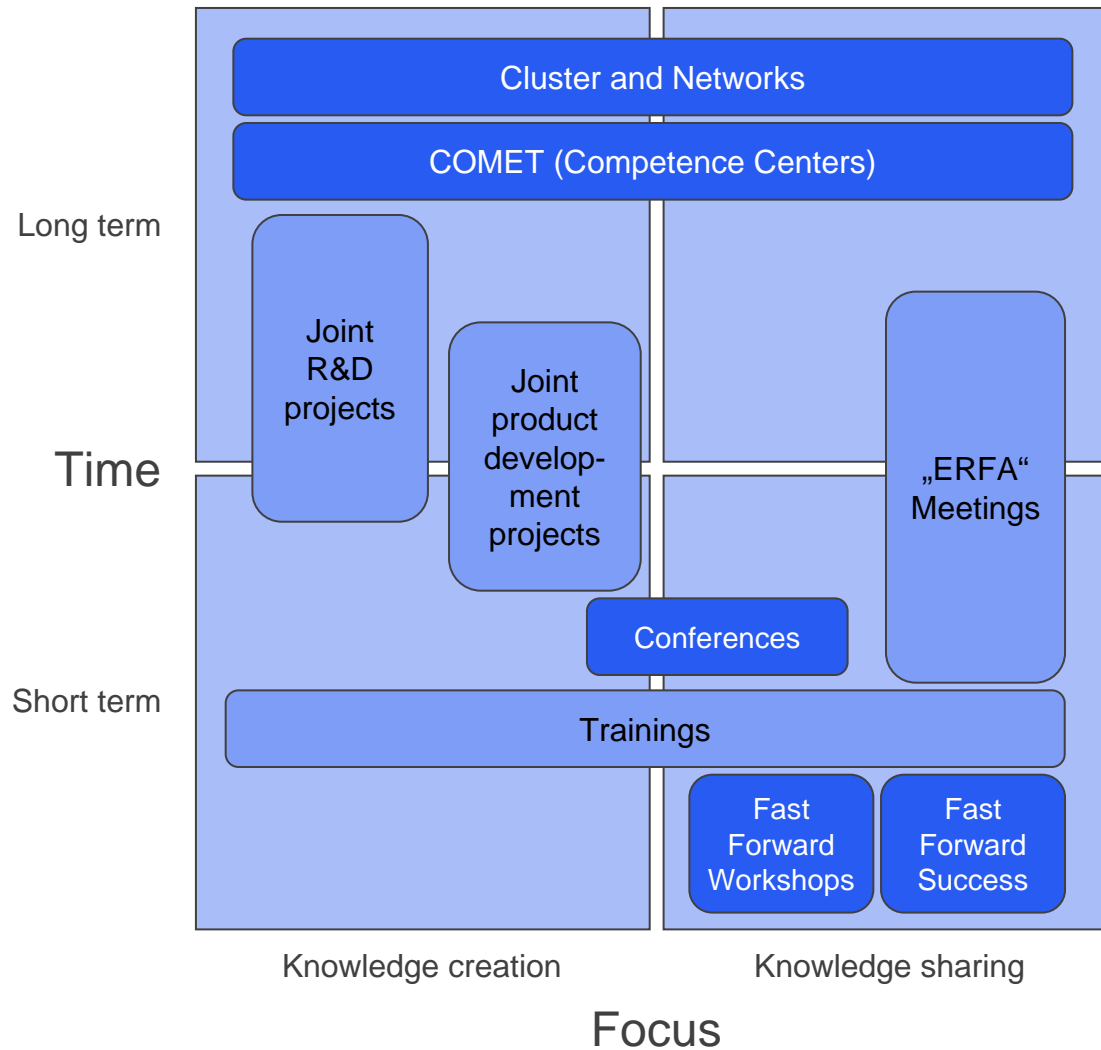


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Collaboration for Innovation

Means for Enlarging the Regional Knowledge Base in Styria



???

- ▶▶ **Is it useful to think on a regional level?**
- ▶▶ **Should public actors like SFG “synchronise” their activities with others? Especially from other regions?**
- ▶▶ **How can we measure the success of policy tools that want to enhance knowledge dynamics?**
- ▶▶ **Can public actors, resp. policy makers rely on their instincts – at least sometimes?**
- ▶▶ **Will regional innovation systems become so complex that they can’t be “managed” by policies anymore?**



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