

Paper to be presented at ESSHRA-Conference 2007
'Towards a Knowledge Society: Is Knowledge a Public Good?
Dynamics of Knowledge Production and Distribution' Berne, 12th-13th June

**Making SME Know, What they Don't Know:
Archetypes of Central Swiss Innovation Profiles and Challenges for
Innovation Support**

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Abstract

The focus of this paper is to answer the question: How can knowing what SME know about innovation help to improve the Central Swiss regional innovation system? We first outline our theoretical approach which bases on third generation knowledge management concepts. Then, we'll describe the Central Swiss innovation system with its actors and projects and illustrate their interdependence within a framework model. Afterwards, we explain archetypical innovation profiles of Central Swiss SME. This is the basis to define the typical blind spots of the companies' perceptions of their own innovation capability. In the last chapter we describe the challenges for Central Swiss innovation support. Some design guidelines for other actors in regional innovation systems build the last section of this paper.

Over all, we emphasise the highly important function of forms of generative dialogue within the Central Swiss innovation system to finally generate innovative and value-creating business concepts.

Key words:

*Regional Innovation support, Innovations Profiles, Third-Generation Knowledge
Management*

1. Introduction

Since June 2005 a consortium of five Central Swiss institutions is developing a regional innovation strategy for Central Switzerland within a specific support action of the 6th European Framework Program. Due to the high importance for regional economy, much attention is paid to the innovation behaviour of Central Swiss small and mid-sized enterprises (SME). Thus, within the context of this project the question needs to be answered: How can knowing what Central Swiss SME know about innovation help to improve the regional innovation system?

In order to answer this question, we proceed as follows: After this short introduction we will describe our theoretical approach. Here, we point towards the usefulness of third generation knowledge management approaches. In the empirical part, we describe the main actors as well as the realised instruments within the innovation system. We develop a framework model of the Central Swiss regional innovation system in this section. Subsequently, we briefly describe four SME innovation profiles we were able to identify. Then, we'll discuss identify the crucial blind spots of the very special group of Central Swiss SME. Within the last chapter, we describe approaches for these companies to reflect upon their blind spots and to improve their innovation capacity by entangled within a variety of dialogic structures. We conclude with five imperatives from which other regional initiatives about knowledge management (KM) in SME can benefit.

2. Theoretical Approach

We could answer the guiding question without investigating it in more depth by stating: SME never will know what universities and other (public) bodies of knowledge transfer want them to know! This answer would be plausible from the viewpoint of many organisational theorists. But universities domicile people that start spinning networks within their job – also with SME. Within these networks, ideas obviously do emerge as well as shared knowledge is created. Thus, we focus on the practical conditions of knowledge transfer instead of struggling with the theoretical assumption that changing SME from outside is impossible. That 'knowledge transfer' itself is a problematic expression which we want to replace in the future, will be argued later on.

Our underlying assumption is that SME can only express a demand for knowledge and learning if they know what they don't know. But, how can a SME know, what it doesn't know? Obviously we're pointing towards different types of knowledge here which we have to explain in more depth. Our second assumption is that SME need an alternating (not necessarily external) perspective that serves as a reference point to be able to reflect the 'blind spot' of the own perspective. The main theoretical challenge to overcome by SME for making them knowing actors is to somehow deal with their blind spots and make them sensitive for upcoming value-creating businesses, not merely ideas and patents. The blind spot problem was originally introduced into the discussion of (organisational) learning and innovation by the well-known 'Johari-Window' in 1955 (see Luft & Ingham, 1995; Hase, Davies & Dick, 1999). We'll start our theoretical reasoning by describing this concept. Then, we enlarge the

idea of the blind spot by a wider KM concept. We identified Scharmer's 'Theory' (2007) as an adequate guiding frame to design regional innovation processes.

2.1. Dealing with Blind Spots

The JoHari-Window¹ was originally developed in the mid-1950s as a tool to help people reflecting on their interpersonal relationships (see Hase et al., 1999). The concept draws on two distinctions, depending on the fact whether a) aspects of a person are known or unknown to him- or herself and b) known or unknown to others. These distinctions open up four sections of the model, namely the 'open arena', the 'facade', the 'unknown area' and the 'blind spot' (see Figure 1).

	Known to self	Unknown to self
Know to others	Open Arena / Public Self	Blind Spot(s) / Private Self
Unknown to others	Facade / Hidden Self	Unknown area

Figure 1: The Johari-Window

Within the *open arena* lies the public self of a person, that are those parts which both persons can see and agree upon. This differs from the *facade* section within which a person knows something that is hidden for others. Within the *unknown area* lie aspects which are hidden to both – the self and others. Last but not least, in the upper right section we find things that are known by others but not know by the self – those things are (partly) hidden in the *blind spot(s)* of the self. The Johari Window usually serves therapists to visualise the boundaries between the sections and either to enlarge the open area or to point towards possible the blind spot(s). The Window is a smart tool to illustrate the divergence of private and public perception and thus might be very powerful in bringing aspects of a person to the surface and make them discussable. Of course, this can have negative effects, too, e.g. when taboos are broken. After fifty years of knowing, improving and working with the Johari-Window, we can emphasise, that the concept is a valuable tool to simplify relationship complexity. But, it also has clear limitations, especially when it presumes that blind spots that can be revealed.

Modern theories of organisation implicitly suit to the blind spot idea. For example, the blind spot concept is a crucial metaphor within Newer Systems Theory. The blind spot is an

¹ Named for its creators: Joseph Luft and Harri Ingham.

expression of the system's selectiveness in recognizing and processing information (e.g. Luhmann, 1995). Organisations produce communicative actions and generate routinised communication patterns that are highly selective. Each system operation contains and reproduces a specific risk which is higher or lower due to the system's degree of specialisation. From this perspective, a social system always operates with uncertainties and a blind spot which is hidden behind its selectiveness.

2.2. Third Generation Knowledge Management

Actual third generation knowledge management concepts take the idea of dealing with the blind spot and try to implement them into concepts of 'knowledge as a flow' or something that is beyond the embodied knowledge structures of organisations. For example, Snowden (2002) states three 'heuristics' when thinking about knowledge:

1. Knowledge can only be volunteered; it cannot be conscripted.
2. We can always know more than we can tell, and we will always tell more than we can write down.
3. We only know what we know when we need to know it.

Within these heuristics the blind spot concept clearly becomes apparent. Snowden concludes, that within the knowledge ecology of a firm, two basic transitions are of critical importance for KM: Firstly, the shift from *complex* to *knowable* knowledge for sustaining 'Just-in-time'-KM. Secondly, knowledge that is trespassing from the *knowable* to the *chaotic* sphere and radically questions existing knowledge to achieve knowledge innovation.

Correspondingly to Snowden's knowledge ecology model, Scharmer (2001) developed the concept of *self-transcending knowledge*. This knowledge is not yet embodied. A specialised kind of perception is needed to bring it into an embodied stage. Senge et al. calls this mode 'presencing' (see also Senge, Jaworski, Scharmer & Flowers, 2005). The function of presencing can be explained by the following figure, which shows Scharmer's 'New Learning Cycle':

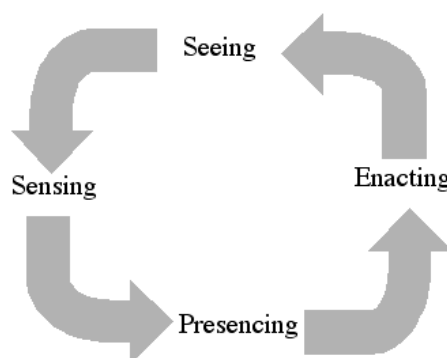


Figure 2: The Emerging New Learning Cycle

Within the learning cycle presencing is a mode that lies between 'sensing' and 'enacting'. Thus, presencing describes the process of becoming aware of upcoming opportunities. This perception is pretty much mastered by entrepreneurs and leaders when sensing new business ideas.

According to Scharmer, presencing is not only about sensing new opportunities but also in getting into action to master social challenges. So it basically deals with changing social reality. Scharmer illustrates the process of getting into action within his U-shape-model:

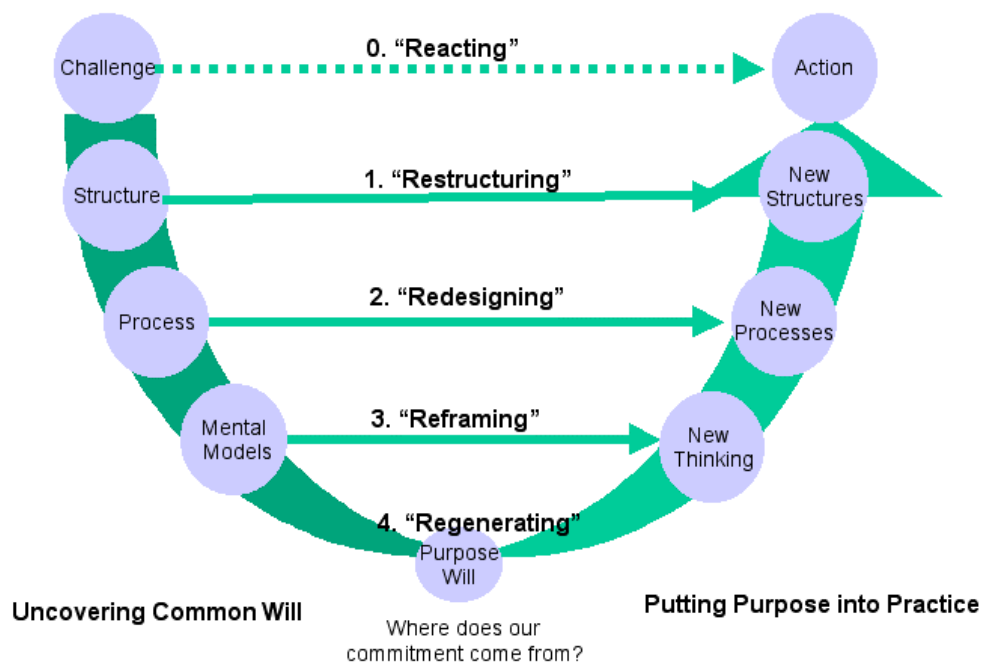


Figure 3: Five Levels of Behaviour in Response to Change (Scharmer, 2001)

The U-Shape is the core element of ‘Theory U’ (Scharmer, 2007), distinguishes different levels of social change and offers different approaches to deal with it. The U-Shape can be divided into two halves: The half of the uncovering of common will comprises the levels structures, processes and mental models. The other half that is the putting of the purpose into practice contains new thinking, new processes, and new structures. At the deepest point of the U-Shape the ‘shared will’ is located. According to Scharmer, the shared will is the foundation of mutual commitment and the driver for getting into joint action. It is this conception that helps us to form the methodology for making SME know, what they don’t know. As you can see within the graph, the most important thing lies within the generation of new thinking by using techniques of reframing mental models. Our method of influencing social reality in the Central Swiss regional innovation system much relies on this imperative of reframing new thinking. As can be seen in the next graph, presencing is the crucial phenomenon at the bottom of the U-Shape and signifies the turnaround point between becoming aware of a new idea and the manifestation of will to embody new knowledge (see Figure 4).

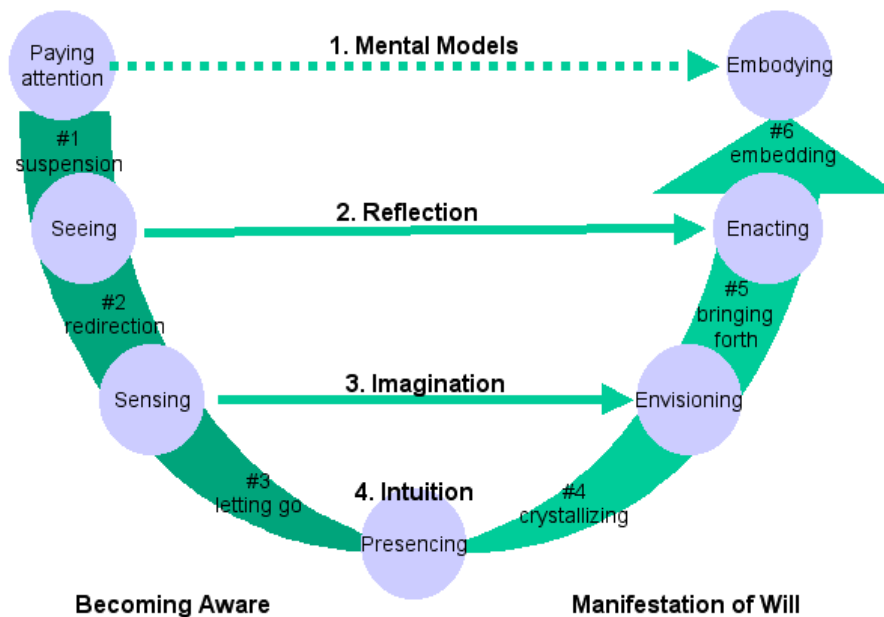


Figure 4: Inflection Points of Cognition and Social Reality Formation (Scharmer, 2001)

To embody knowledge six typical ‘nurturing stages’ can be described. The first is the ‘suspension’ of individual judgement to create a space in which new ideas can emerge. Then the attention can be ‘redirected’ from sticking within the still existing towards the letting come of the new. This stage is called ‘letting go’. Letting come can also be named ‘crystallizing’ and enables envisioning. This process can be ‘brought forth’ and enacted. Socially reality formation has taken place if the vision enactment results in the embodiment of knowledge within the actors’ mental models. All of these stages can be covered in forms of dialogue. That is the reason why *generative dialogue* can be seen as an adequate method for sustaining presencing and enabling social change.

Concluding, we agree with Stacey, that knowledge is an ‘‘active process of relating’’ (Stacey, 2001). Third generation KM concepts are quite helpful to understand knowledge transfer processes and social change of organisation. It becomes apparent, that the imagination of a ‘transfer’ process now can be understood as a rather old term – a language relict from the twentieth century. We should speak of ‘knowledge conversion’ instead. This expression is able to capture the recursive character that signifies all knowledge processes.

We should now take a closer look upon how SME manage innovation processes to gain further insights about knowledge processes. First, we give a brief overview of the Central Swiss innovation system. This serves as the context for the description of the four innovation archetypes we found within the region.

3. A Model of the Central Swiss Innovation System

We distinguish two subcomponents within the regional innovation system: different *actors* and different *instruments*, understood as programmes and processes of interaction within the system. The instruments are illustrated as a project trajectory that has evolved within Central Switzerland during the past five years.

3.1. Actors of the Central Swiss Innovation System

Central Switzerland consists of six cantons. Four of the cantons founded the first Swiss confederation in 1291, while the other two joined the Swiss Federal state in 1848. This long federal tradition is based on a deeply rooted sense of democracy and autonomy which many inhabitants of Central Switzerland share.

Central Switzerland is a rather small region covering less than 500 km², and has approximately 700'000 inhabitants. The landscape is characterized by the Alps and lakes. All cantons have their own legislative, judicial and executive systems and are represented in the two chambers that form the Swiss parliament. Due to its federal tradition as well as the nature of the landscape there are few areas in which all six cantons have a close collaboration. This is a major weakness of the region.

The activity in the region's agricultural sector is high, involving 9% of the work force compared to the national average of 6%. The main sectors within industry, which employs 27%, are mechanical engineering and construction. The service sector represents two-thirds of employment, with retail, tourism, consulting and health care as the most important activities.

As one group of main actors within the region we found approximately 31'000 SME (2005), complemented by only few large companies (83) with more than 250 employees.

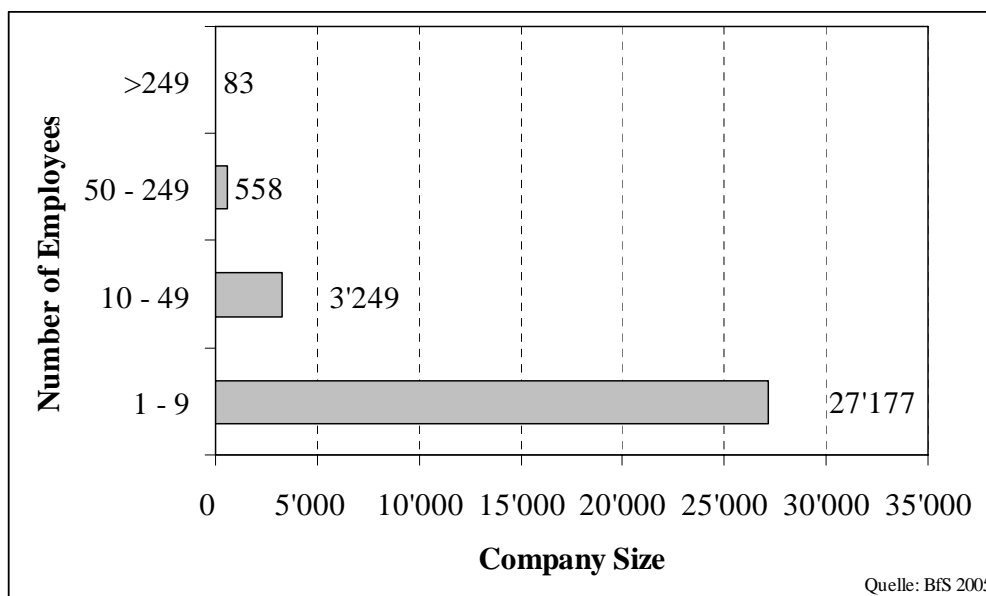


Figure 5: Central Swiss companies categorised by size

Nevertheless, over 58% of the companies sells products to abroad (Waser & Hanisch, 2005) and economic figures show basically good results. Additionally, the six public administrations of the cantons play an important role, especially the six different regional economic development agencies. Then, there are some higher education institutions, today merged within the University of Applied Sciences which is mainly located within Central Swiss biggest city Lucerne and its suburbs. The University of Applied Sciences is highly interested in developing attractive innovation and business support for the Central Swiss companies to sustain organisational learning and to create self reflection opportunities for inventors and 'innovation seekers'. A special role plays the 'InnovationsTransfer Zentralschweiz' (herein after referred to as ITZ) – an organisation with the task to sustain and foster Central Swiss innovation transfer processes.

3.2. Realized Instruments within the region – a project trajectory

Besides the common innovation infrastructure like business centres, incubators, business angels, and venture capital firms, the actors jointly established some development projects during the recent five years. The main target of the project trajectory lies within the strengthening of economic performance by means of networking. The latest projects were subsumed under the project title ‘Zentralschweiz innovativ’ and were called ‘Push & Pull’, ‘Neuland’ (the Swiss expression for virgin soil) and ‘Regional Innovation Strategy for Central Switzerland’ (RIS), all of them financed by funds of the local governments and/or the European Commission. Also, an ‘UnBla-conference’ has been organized in January of 2007, attracting international ‘knowledge seekers’ to Lucerne and made them discussing about future innovation opportunities for Central Switzerland. We briefly introduce this project trajectory to paint a rough picture about the regional innovation activities:

3.2.1. Project ‘Push&Pull’: Pull local – Push global

The research project ‘Push&Pull’ (P&P) started in 2005 and will be finished by the end of 2007. On the one hand, the project focused on so called ‘pull-processes’ of knowledge, which describe the knowledge demand from the side of Central Swiss organisations. On the other hand, the ‘push-processes’ signified knowledge transfer towards Central Swiss organisations by providers like the university or other education suppliers from the public or the private sector.

The core strategy is aiming to increase local pull processes and to raise global push processes at the same time. Respective targets of P&P are to increase the knowledge demand of the SME by sensitising them for KM processes, adequate KM solutions and effective knowledge service provider channels. Especially, the project is interested in increasing transdisciplinary approaches of knowledge transfer. The project is led by a consortium comprising of nine organisations (including the University of Applied Sciences, Lucerne University, the ITZ and the regional development agencies, among others). Typical measures that were realised within the project are for example a web based KM platform including an event calendar, the organisation of events, the development of a transdisciplinary KM toolkit and a ‘Innovation Quick Check’ for SME.

P&P was a starting initiative for Central Switzerland realising that it has an autonomous regional innovation system which is detached from the innovation systems of the greater economic areas of Basel (in the Northwest) and Zurich (in the Northeast). The innovation model developed within the project was rather a rough guideline than a comprehensive framework model (see Figure 6).

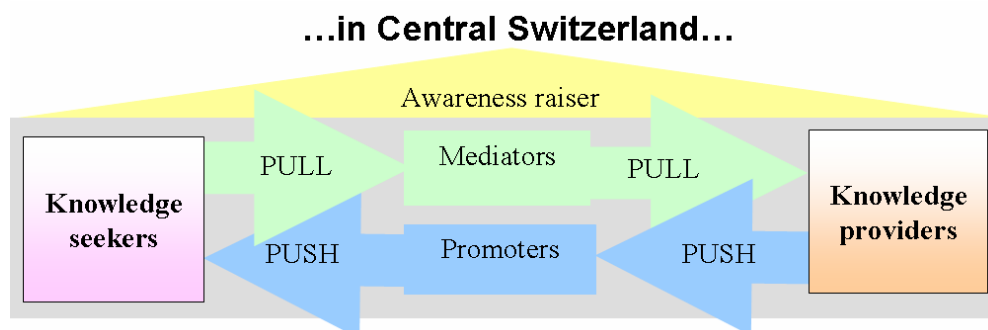


Figure 6: Knowledge Transfer Model of the Project ‘Push&Pull’

The model differentiated knowledge seekers from knowledge providers which are correlated by pull and push processes. In push processes, organisations like the Campus Lucerne function as 'promoters' to strengthen the transfer from knowledge providers to seekers. In the other direction, knowledge seekers can use 'mediators' like the ITZ to pull the knowledge they need.

The model illustrates, that the concept of knowledge used within the project was rather simple. The assumption, knowledge processes can be distinguished into two versions – namely push and pull – can be neglected very easy. Thus we can judge it as oversimplification. Nevertheless, the model is very comprehensible and is very adequate to introduce a more complex understanding of knowledge for companies that are KM novices. Despite systematically lacking a profound knowledge concept, the project served as starting point for the social construction of the regional innovation system. It was a starting initiative to think about the systematic development of the regional innovation system. As such, it had significant influencing effects – on the one hand for the proceeding of the project Neuland; on the other hand for the setup of the project RIS (both will be explained subsequently).

3.2.2. Project 'Neuland'

The Neuland project of the University of Applied Sciences Central Switzerland is supported by the Canton of Lucerne. The objective of this project is to foster and support innovation processes in Swiss SME in the rural and mountainous areas of Central Switzerland. On the research side, the project members were exploring how universities can be a mean to foster the innovativeness of the described SME in their region. Thus, Neuland was an ideal project for the University of Applied Science Central Switzerland to understand the needs of regional SME in innovation support. The project started in spring 2005 and will be finished in autumn 2007.

The aim of the Neuland project was to investigate the existing practice of innovation management by regional SME as well as the actual process of knowledge transfer between the University of Applied Science and SME in Central Switzerland. Based on the results, the project aimed at developing methods and pilot projects that help a better integration of both parties. In the empirical phase, 87 qualitative interviews with local SME were conducted and led by a wide variety of interviewers from different institutions (stemming mainly from the University of Applied Sciences and from the office for regional knowledge transfer). The most remarkable result out of this empirical study was the development of archetypical innovation profiles of Central Swiss SME (Wolf, Schweikert & Hauser, 2006). These results will be presented later on (see p12) serve as concrete information for advanced studies about SME innovation within the region.

The project results provided a valuable insight on the clients of the University of Applied Sciences of Central Switzerland. This motivated the development of three pilot measures aiming at developing attractive support offers for SME. These measures will also be described later on (see p15). All together, the research-focused Neuland project and its results fit perfectly to the subsequent RIS project which is basically interested in the joint development of a regional strategy.

3.2.3. *Project 'Regional Innovation Strategy for Central Switzerland'*

The RIS project is actually one of 32 regional innovation strategy projects in Europe. The Central Swiss RIS project started in 2004 and lasts until 2008. Its aim is to improve the capacity of regional actors to develop policies which takes the needs of the business sector into account and the strengthens the regional innovation capacity. Additionally, RIS wants to provide a framework within which decisions regarding future investment in research and technology development, innovation and technology transfer initiatives at the regional level can be optimized. The RIS vision is describing the project as a central activity to make the region more dynamic, visible and competitive and an even better place to live in. The project methodology uses common tools of strategy building. The regional strategy will be generated within three basic steps:

1. Consensus-building among key players within the regional innovation system
2. In-depth analysis of the region's social and economic environment, major industrial and technological trends, innovation needs among SME leading to the offer of innovation being organised in the region
3. A long-term regional strategy to innovation-led regional development and list of actions to support, with special focus on SME

The project methodology had to be adjusted and improved for being adequate for Central Swiss requirements. Firstly, the high quality of living serves as barrier to publicly think about the region's long-term future; many inhabitants don't recognise an emerging problem although annually research and development spending are decreasing since years. Secondly, the Central Swiss culture is commonly known as conservative and self-centered with a high claim of independence and liberality. Thus, the opportunities to get inspirations or irritations from outside of Switzerland are scarce. To take these cultural conditions into account, three adjustments of the RIS methodology were made: The first adjustment was the development of 'Basis-SWOT-workshops', which are basically common workshops to discuss strengths and weaknesses as well as opportunities and threats that have to be taken into account for defining a regional strategy. Within a period of six month, 30 of these workshops were organised with the participation of very heterogeneous stakeholder groups from economy, politics, society and education. This is the reason for signifying the workshops as 'Basis', i.e. grounded. The reason was to archive a high degree of societal support to convince other regional actors that identifying and generating a shared strategy for Central Switzerland is a topic of high priority. As a second adjustment, but with the same aim, the 'Central Swiss Innovation Panel' was established. The panel is a dialogue forum comprising of regional innovation stakeholders. These stakeholders were invited to participate in biannual meetings for discussing the project progress and to reflect upon the next steps. The third adjustment was the involvement of publicity. This became apparent by presenting some results at the regional fair LUGA and by conducting a mass survey at the fair stand. Within ten days over 1650 inhabitants filled out short-questionnaires about future wishes for the region and about regional achievements worth keeping. These results were analysed and served for scenario building within the strategy building process.

Concluding, the RIS project can be understood as a strong bracket offering heterogeneous discussion and dialogue opportunities for the regional actors including the exchange with the public. In the periphery of the RIS project, the idea arose to organise an 'UnBla'-conference which is characterised by its participatory design as well as its interest in generating innovative thinking by means of cross-cultural dialogue.

3.2.4. UnBla.07-Conference Lucerne: What can we share – what can we learn?

The aim of the conference lied within the generation of dialogue about Regional Innovation from an explicitly international perspective; and Central Switzerland was the intended field of application. The conference design was developed by a small group that evolved out of the international knowledge community ‘KnowledgeBoard’ – the UnBla team. UnBla conferences shall provide an ‘interaction platform for companies, organisations, communities and the like who need to solve complex problems that require radical innovation, network and community building, and the production of numerous and diverse solutions’ (Kazi, Wolf & Troxler, 2007). The event design offers a different form of conferencing which includes pre-event, event and post-event care for activities that lead to a tangible result for the host organisation (for a variety of possible UnBla methods also see Kazi & Wolf, 2006). An UnBla conference typically does not exceed 100 delegates who will have to demonstrate their own interest in the topic. Thus, ‘the topics of the UnBla conferences are a set of real-life problems, set by the host organisations of the conference. The hosts act as experts of their problems. As ‘locals’, they provide the context of the conference; they are ‘knowledge seekers’” (Kazi et al., 2007).

The event design distinguishes guests from outside (travellers) that act as ‘knowledge carriers’ and catalysts for new thinking. By travellers, the local knowledge of other parts of the world is brought together, assembled, and applied to the problem. Thus, the UnBla-design is aiming to integrate the local and the global knowledge to unlock the often positive view from the outside. Similar to the LUGA activity within the RIS project, the conference was sponsored by local companies, but also by the Lucerne School of Business, the ETH Zürich, the KnowledgeBoard Community, the Canton of Lucerne and the regional development agency ‘RegioHer’, among others.

The UnBla-Conference got a high degree of international publicity by spreading the story through the KnowledgeBoard network and other virtual channels. Yet the local impact remained limited which might be due to the lack of participation of local politicians and media. Despite this, the UnBla-Conference can be judged as a crucial part for building the Central Swiss community of ‘innovation seekers’.

3.3. Framework Model

The following draft of the Central Swiss Innovation System comprises four institutional blocks (see Figure 7). These blocks are the group of Central Swiss companies, the private education service providers, the University of Applied Sciences Central Switzerland and the cantonal administrations. Within knowledge and technology transfer processes (KTT) some smaller organisations are involved, each coupled or being close to the respective institutional block. These are the economic and business associations for the companies, some innovation infrastructure which is offered by the private sector or by private-public partnerships (e.g. a business park), the transfer institutions of the university and the regional development agencies and associations that are connected with the government.

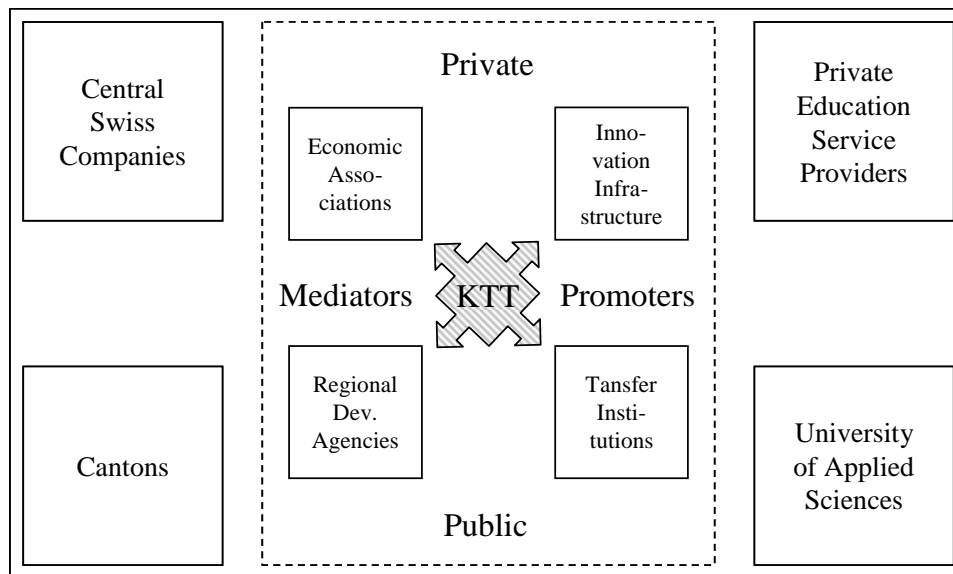


Figure 7: Draft of the Central Swiss Innovation System

The graph doesn't show the project ownership of the realised instruments (i.e. the projects presented above). Most of them are (co-)governed by the University of Applied Sciences. But others are managed from transfer institutions and hosted within suppliers of innovation infrastructure. Additionally, stakeholders from all blocks have the chance to engage in the projects and to contribute due to their interests and possibilities. By the development of the instruments, a profound multi-project landscape has emerged that is setting visible innovation landmarks (like the UnBla conference). Thus, we might state, that Central Switzerland's Innovation System is in motion.

4. Archetypical Innovation Profiles of Central Swiss SME

In the projects Neuland and RIS 87 qualitative guided interviews were conducted that are now providing the data basis for the analysis of perception patterns of Swiss SME regarding their own innovation processes. From the interview series we clustered six different archetypes of SME innovation profiles, all of them containing specific core values as well as typical process elements (for a brief outline see Wolf et al., 2006). These archetypes have then been consolidated into four. The archetypes serve as a basis for two advanced project actions: Firstly, the archetypes are very helpful to facilitate the process of self reflection of the SMEs. Secondly, the profiles enable the application of advanced and more standardised assessment tools within the adjacent project stage.

In the analysis of the Neuland interview data four different archetypes of SME innovation profiles of Central Switzerland SME were identified. These archetypes will be presented in this section.

4.1. Central Swiss Innovation Profiles

The four SME innovation profile archetypes identified from the interview data are the presented in the following figure:

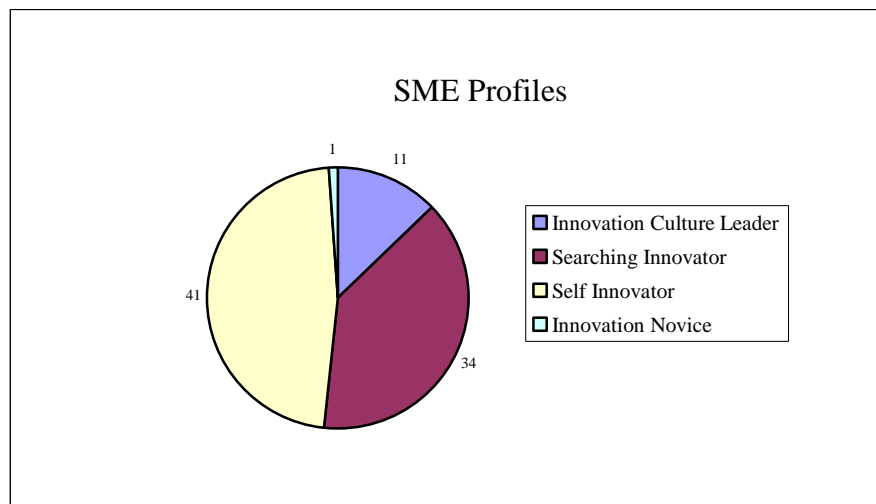


Figure 8: Archetypes of SME Innovation Profiles

The different SME Innovation Profiles can be characterised as follows:

Innovation Culture Leader (11 organisations): For this type of SME, innovation management is a central part of the corporate strategy and the company culture. The members of the organisation show a strong passion for innovation, the whole economic activity of the company is focussed on the creation of new innovative products and services. SME with this profile develop innovations in strong partnerships in cooperation with a broad variety of external sources of innovative ideas such as clients, partners, suppliers, universities and business associations etc... Each employee is seen as innovation source and the creation of innovative ideas is part of the job profile. Innovation Culture Leader support the development of innovative ideas through structures and processes favourable to innovation such as flat hierarchies, provision of time and space for creativity and knowledge exchange and so on. The outcomes of their innovation processes are radical new products, services and technologies that are aimed at benefiting the client needs to the maximum.

Searching Innovator (41 organisations): Two thirds of the companies with the profile of the Searching Innovator are innovating because of economic pressure. Searching Innovators are very busy with gathering external inputs from a broad variety of sources like business associations, universities and clients and turning them into innovation. They are continuously scanning and analysing the market environment and client needs. For SME with this profile, the CEO and the management are the key internal sources of innovation. As the Searching Innovator is rather focussed at gathering external information, he does not invest too much into the internal innovation infrastructure. However, he usually has general project structure in use and operates an idea management. Due to his focus on collecting information on other companies' innovations rather than on creating own new ideas these companies are usually incrementally developing existing products and services and opening up new business segments with an existing technology. They do not cause but react on market disruptions and are equally interested into earning money and benefiting their customers.

Self Innovator (34 organisations): SME within this innovation profile focuses on internal competencies for developing new products and services. They are either confident that they do not need the ideas of externals for innovation management and that they have the best resources within the own company (24 companies: the traditional self innovator). Or they are a subsidiary (10 companies) that has to implement innovative projects that come from the

mother company. Self Innovators cooperate in innovation development projects only on the basis of a long, strong partnership. SME with this innovation profile strongly support the vocational development of their employees. The professional competence of the employees is seen as the major success factor for the development of innovations. As a result of their focus on benefiting the own company, sometimes the needs of clients are not considered during the innovation development process and at the end it seems to be difficult to find sales arguments. However and beside the fact that product and service innovations of that type of SME are usually incremental, the strong internal focus of the innovation activities seems to support the development of radically new production technologies – three Self Innovators of our sample succeeded with those innovations.

Innovation Novice (one organisation): As only one SME did fit into this profile, it is not representative at all. However a short characterisation of this SME: For the CEO of this company, innovation management is a totally new field, he is even not sure that it is worth to invest into innovation activities. It is a very conservative family lead micro-SME, and the companies' business is running successfully since a long time. The CEO and owner of the company is member of a regional business association that he presides over (so he has discourse power), this is the only exchange activity he invests into.

Generally spoken, the result can be interpreted as very positive for the regional innovation culture: Only one SME does not innovate at all. However, there seem to be only two types of innovators that potentially might look actively for support at universities and research institutes: the Innovation Culture Leader and the Searching Innovator. The Self Innovator is usually not too much interested into external inputs that go beyond very specialised vocational training.

4.2. What SME Don't Know

From the description of the Central Swiss innovation profiles can be derived, what the SME don't know. The blind spots and the corresponding innovation challenges of each profile can be outlined as follows:

Innovation Profile	Possible Blind Spot	Innovation Challenge
Innovation culture leader	Not everything in business is innovation. Increasing efficiency by business automation has some linear requirements for designing the business.	How to set up sustainable 'quasi-linear' business processes?
Searching innovator	Not all sources for innovation can be found out there. Also, organisations have an inner strength to generate ideas. A proactive management of the innovation process also counts.	How to create an own innovation process based on internal resources? How to design the own innovation capacity, and how to be proactive instead of reactive?

Self innovator	Some very useful resources can be found beyond the borders of the company. Innovation might benefit from this.	How to supply the company with impulses from outside?
Innovation novice	Some companies are successful without renewing their business. However, a regular check of the strategies' future-fitness should help to minimise the risk of being dismissed from business.	How to sense changes in the environment?

5. Challenges for Central Swiss Innovation Support

We structure this section in three subchapters: First, we describe the main challenges in making SME know what they don't know. These challenges depend on the company's innovation profile. The main condition for making them know is to 'presence' upcoming business ideas. Second, we describe the challenge for higher education institutions to make SME know which mainly consist in establishing dialogic structures within the region. However, SME won't gather any insight if the 'knowing' organisation rejects learning, too. So the process of making anyone else to know anything is to make each other know – this comprises a mutual learning process; which is more than a simple sender-receiver-(or teacher-student)-process. Third, we describe some design guidelines for KTT actors that might be even useful beyond Central Swiss borders.

5.1. Making SME Know...

The innovation proficiency in Central Swiss SME is strongly linked to the understanding the firm has about the nature of knowledge and knowledge creation processes. As one consequence, innovation support organisations have to be aware of the innovation profile of their (prospective) clients as well as their own competencies in order to design an adequate knowledge creation process. But how should this process of awareness-making methodologically be designed?

In the theoretical part of this paper, we highlighted 'presencing' as the key aspect of making SME realising upcoming business ideas with a business potential. Additionally, we pointed towards generative dialogue as a critical technique for creating shared will to change social reality. Thus, our approach to make SME know, what they don't know, is to embed them into dialogical structures.

Within our work, we 'design' dialogue opportunities on two levels: The first is the *content level*, meaning that each single technique has to enable – not restrict – idea exchange and dialogical conversations. Any influence that prevents from dialoguing is sought to be eliminated or reduced to a minimum. The second is the *organisational level*: To enable presencing within Central Switzerland pretty much means to set up multiple projects with as many stakeholders as possible to create a certain degree of entropy and disorder. This requires a multi-project management that pays attention to the synergies between Central Swiss innovation projects as well as the regularly information exchange by sustaining conversations

between project members and by discussing results of one project within the setup of the others.

5.2. Dialogic Structures within the Central Swiss Innovation System

Some means of fostering dialogue were developed out of the insights of the Neuland project in form of subprojects. Those are realised within the regions biggest higher education actor, the University of Applied Sciences. But SME won't learn anything about innovation if the education actor does not try to learn by itself. The three subprojects are a first step to induce a mutual learning process:

One pilot subproject is called 'trend days'. It offers informal workshops where developers of SME meet researchers of the University of Applied Science. The researchers provide insights in research fields that might be of increased commercial interest in the near future. Workshops close with a discussion on new business models that are deduced from actual research findings. 'Trend days' serves best the needs of the archetypes Innovation Culture Leader and Searching Innovator.

The second subproject is called 'echo room': Here, an SME can present a new product or service idea and get a feedback from researchers of different relevant disciplines. 'Echo rooms' offer a fast, cheap and informal way to induce a dialogue between experts of the University and corresponding experts of SME. Due to its minimal cost, it could be the ideal format to try a first step in knowledge transfer for the SME types Self Innovator and Innovation Novice.

Finally, 'meta net' is the third subproject that should take advantage of the fact that many SME are already part of different interest groups and networks. With 'meta net', the University of Applied Science wants to gain a more prominent presence within these existing interest groups and networks. This should increase the awareness among SME that the University of Applied Science can be a resource for innovation processes. 'Meta net' focuses on SME that are unaware of the University of Applied Science or that perceive it as a school only. Self Innovators might increase their interest for innovation support if it is brought closer to them.

The dialogic structures emerging from the RIS project differ from Neuland so far, that they are not extracted from the research results but developed and embedded within the projects' progress. Dialogic tools within the project approach are the 'Basis-SWOT'-workshops, the setup of the 'Central Swiss Innovation Panel' as well as the idea to surveying the publicity at the LUGA stand. The public recognition with regard to the topic of SME innovation was significantly enlarged by these tools. The next phase of RIS will serve two reasons: Firstly, the regional strategy will be jointly developed by a scenario building technique. The regional strategy and its fit with the scenarios will be discussed within project-related stakeholder groups, e.g. the Innovation Panel among others. Secondly, the project will be the triggering initiative of a portfolio of innovation projects that will be launched at the beginning of 2008. The projects will be governed by others than the RIS project team – SME or other economic consortia, higher education institutions, economic development agencies, research activities, etc. While the project responsibilities shift from the RIS organisers the management of the inter-project networking won't. The RIS project contains one work package to coordinate knowledge exchange and to foster the build-up of the social network of project stakeholders. It is obvious that the multi-project management techniques that are needed to foster the

collaboration between the projects have to be quite advanced on the one side, but as simple as possible on the other. These multi-project management and governance skills can be seen as the critical challenge for the last stage of the RIS project – as well as for the regional innovation process.

5.3. *Design Guidelines for KTT System Actors*

Concluding, we can describe a few design guidelines for other actors in innovation systems. It is clear, that a successful approach to intervene in complex social systems needs to be supported by as many actors as possible. Thus, the guidelines can only point towards a direction which seems to be successful for the Central Swiss region. The overall aim is to systematically develop spaces of generative dialogue within the system. The guidelines for innovation development can be formulated in the following imperatives:

- 1) *System-thinking*: Needed is a systematic approach but especially a systemic understanding behind it. System design will never be complete and consists of more or the less spontaneous impulses. Thus, each ‘master plan’ that comes out of the mind of a single actor cannot be adequate for the whole system, but set a reasonable input for the system. Systems are self-organised. So a system might decide not to accept one system map but to accept another.
- 2) *Foster Networked Dialogue*: Usually, hand books point toward networking to bring people together. However, we’ve seen lot networking designs that gives the possibility for dialogue but also effectively prevent them (mostly not-intended). The imperative here is to create social networks that are able to get into a dialogue if needed and who are able to handle its consequences. Unfortunately, each new business idea that is born but not developed is an unused resource. This imperative implies that system actors should invite each other as often as possible to share and discuss insights and ideas. It is also an implication for higher education institutions to regularly visit the site of the SME and to appreciatively discuss actual problems and issues.
- 3) *Scaffold Virtualisation*: Very often it can be seen that regional economic development shall be sustained by virtual platforms, newsletters, databanks, etc. in order to reach as many actors as possible. But virtualisation of this kind goes often along with failure or produces a negative dynamic within the system because the meaning of the technology remains absolutely unclear. As a consequence, virtual tools only should be applied if they are a result of a face-to-face-interaction where participants had the chance to generate a shared understanding of a technological tool before. Without a face-to-face interaction beforehand, virtualisation will primarily lead to reduced commitment, misunderstanding and – in the worst case – to conflict that decreases spaces for dialogue.
- 4) *Combine Education and Business Practice*: Within many approaches, project agendas tend to develop either the education system or business practices. Both aspects are rarely integrated due to education and business practices belonging to two different societal sub systems. The development of business practice competencies have to be grounded within the regional education institutions. But business practices can only be tested, validated, improved and brought to create value-added within the economic field. So, the intelligent combination of the education system with business practices

seems to be a relevant trigger for innovation support. This requires long-term thinking and an enabling education philosophy.

- 5) *Monitor and Check Innovation Capability*: Monitoring and checking innovation capability of SME is not a means to control innovation. Instead, both serve as reference points for companies to compare themselves with a) others or b) their past status. When introduced by face-to-face-interaction, web-based questionnaires can be used to enter dialogue with SME. Thus, monitor and check-initiatives are occasions for reflection and mutually learning about innovation.

Design guidelines always are limited by conditions of time, space and meaning. However, if an actor begins to reflect upon his innovation activities and to design new ones, he or she might take them as a helpful quick reference.

This paper answered the question: How can knowing what SME know about innovation help to improve the regional innovation system? For this, we briefly described a theoretical localisation, modelled the Central Swiss innovation system, showed archetypical innovation profiles of Central Swiss SME and outlined main challenges for successfully mastering innovation support. After having formulated these paragraphs basing on experiences of the recent four years, we hope to discover more facets of regional innovation processes in order to improve regional innovation capacity as well as their economic performance.

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