A knowledge management system for regional development

Simone Strauf
Medzyzdroje, 2-4th June 2008

Universität St. Gallen
Institute for public services and tourism
Central issues

- The importance of knowledge and learning for regional development
  - knowledge as a success factor for regions

- The regional repository of knowledge
  - regional stakeholders
  - missing awareness
  - knowledge supply and demand of regional stakeholders

- Experiences from business management
  - knowledge creation and knowledge management

- Transferability for regional development
  - knowledge management systems for regions
The importance of knowledge and learning for regional development
Current research status: basic approaches

- Centring around growth poles:
  - polarisation theories: various interconnections at a location set off a dynamic process of development which spreads also to neighbouring regions

- Centring around networks and relationship between people:
  - 'social capital approach': networks of contacts in a region can create commitment for public affairs and support regional economy

- Centring around regional resources:
  - endogenous regional development: returning to the idea of a region's resources and capability to generate ideas and trigger development
Centring around the knowledge and competencies of the regional actors and institutions:

the learning region: underlines the importance of knowledge, qualification and the competences as the basis for regional development.

Centring around regions’ institutional and organisational capacities:

capacity building: social change is a complex process in which people attempt to make their living and working conditions efficient and effective.
Layer to analyse regional development processes

- Economic integration, growth poles
- Social capital and networking
- Regional resources
- Knowledge and competencies
- Organisational capacities

Regional economic development approaches
Knowledge and competencies are central success factors for the competitiveness of regions.

Only „learning regions“ can survive in the future.

Regions must be defined by the same criteria and elements which comprise a knowledge-intensive firm.

To manage the existing knowledge and to create new knowledge are crucial challenges for regions.
The regional repository of knowledge
Barriers to use this repository effectively

- missing awareness about
  - the complexity of the available regional knowledge (relevant stakeholders)
  - how to require to existing knowledge
  - how to create new knowledge
  - how to use the existing knowledge to solve regional problems

- short half-live period of knowledge
- sometimes missing experiences
- missing responsibility
Regional demand for knowledge
Demand for knowledge

- 77% to colleagues (same job)
- 69% to Canton/district
- 68% to municipality
- 54% to persons (others)
- 54% to tourism organisations
- 51% to regional planners
- 51% to non-profit organisations
- 49% to media
- 46% to SMEs
- 35% to federal government
- 26% to colleagues (same education)
- 22% to cultural institutions
- 19% to NGO

source: Online-survey IDT, n=74
Suppliers of knowledge

- Colleagues (same job): 5.1
- Canton: 4.5
- Federal government: 4.5
- Other persons: 4.4
- Internet: 4.4
- Further education: 4.4
- Books: 4.2
- Media: 4.2
- Colleagues (same education): 3.6
- Science/research/universities: 3.5
- Consultants: 3.5
- NGO: 3.5
- Science/research/universities of applied science: 3.2
- Others: 5.6

1 = unwichtig - 6 = wichtig

Source: Online-survey IDT, n=74
## Kinds of knowledge and its future importance

<table>
<thead>
<tr>
<th>Kind of knowledge</th>
<th>Use today (in %)</th>
<th>future importance (1-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>regional knowledge</td>
<td>92%</td>
<td>5.35</td>
</tr>
<tr>
<td>expert knowledge from regional sciences</td>
<td>91%</td>
<td>5.12</td>
</tr>
<tr>
<td>process know-how</td>
<td>81%</td>
<td>5.05</td>
</tr>
<tr>
<td>methodological know-how</td>
<td>72%</td>
<td>4.73</td>
</tr>
<tr>
<td>statistical data</td>
<td>88%</td>
<td>4.60</td>
</tr>
<tr>
<td>experience report</td>
<td>87%</td>
<td>4.58</td>
</tr>
<tr>
<td>administrative information</td>
<td>84%</td>
<td>4.39</td>
</tr>
<tr>
<td>expert knowledge business administration</td>
<td>73%</td>
<td>4.09</td>
</tr>
</tbody>
</table>

source: Online-survey IDT, n=74
### Importance of future knowledge factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible regional development paths</td>
<td>5.4</td>
</tr>
<tr>
<td>Development with an influence on the region</td>
<td>5.1</td>
</tr>
<tr>
<td>Improved networks within the region</td>
<td>5.1</td>
</tr>
<tr>
<td>Improved networks between the regions</td>
<td>4.8</td>
</tr>
<tr>
<td>Spatial observation</td>
<td>4.7</td>
</tr>
<tr>
<td>Return of practical needs</td>
<td>4.6</td>
</tr>
<tr>
<td>Improved knowledge management</td>
<td>4.5</td>
</tr>
<tr>
<td>Transformation of new knowledge</td>
<td>4.5</td>
</tr>
<tr>
<td>Individual consulting</td>
<td>3.9</td>
</tr>
<tr>
<td>Supervision by colleagues</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: Online-survey IDT, n=74

Institut für Öffentliche Dienstleistungen und Tourismus

Universität St. Gallen
Regional knowledge demand

Create knowledge

Exchange and share knowledge

Regional development

Standards/methods

Interfaces

Network management

Regional added value process.

Innovation

Innovation

Institut für Öffentliche Dienstleistungen und Tourismus

Universität St.Gallen
Experiences from business management
Different kinds of knowledge

- **Explicit knowledge,**
  - contained in manuals and procedures and

- **Tacit knowledge,**
  - learned only by experience, and communicated only indirectly, through metaphor and analogy

Source: Nonaka, Takeuchi 1997

Institut für Öffentliche Dienstleistungen und Tourismus

Universität St. Gallen
## Characteristics of explicit and tacit knowledge

<table>
<thead>
<tr>
<th></th>
<th>Explicit knowledge</th>
<th>Tacit knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Context</strong></td>
<td>Connected with intellectual experiences</td>
<td>Connected with sensory experiences</td>
</tr>
<tr>
<td><strong>Transfer</strong></td>
<td>Communication of knowledge</td>
<td>Common application of knowledge</td>
</tr>
<tr>
<td><strong>Explicitation</strong></td>
<td>Documentation in words, numbers, pictures</td>
<td>Complex process of externalisation</td>
</tr>
<tr>
<td><strong>Adoption</strong></td>
<td>By common learning</td>
<td>By common experience</td>
</tr>
</tbody>
</table>

Source: Wilke 1997
The Process of Knowledge Creation

Institut für Öffentliche Dienstleistungen und Tourismus

Source: von Krogh 1998
Characteristics of Knowledge Creation

<table>
<thead>
<tr>
<th>Process</th>
<th>Level</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Capturing | Individual | • Individual search for “maximum grip”  
• No interest/attempt to share knowledge  
• Limited feedback from others  
• Isolation of individual |
| Transacting | Social | • “Experts” transacting their knowledge  
• Minimizing risk of conveying non-legitimate knowledge  
• Sharing based on expected returns  
• Knowledge shared is the end result of a “maximum grip” learning process |
| Bestowing | Individual | • Knowledge created in a supportive environment (“maximum leverage”)  
• Strong intent to share knowledge on the future  
• Feedback from others  
• Integration of individuals into the team |
| Indwelling | Social | • “Equals” creating knowledge  
• Questioning and changing the basis for legitimate knowledge  
• Sharing to help the team grow  
• Attempts to “look with” not “look at” other team members |

Source: von Krogh 1998
The SECI model (Nonaka and Takeuchi)
Knowledge management is defined as the process of continuously creating new knowledge, disseminating it widely through the organization, and embodying it quickly in new products/services, technologies and systems.

(Nonaka / Takeuchi 2004)
From managing to enabling knowledge creation

<table>
<thead>
<tr>
<th>Knowledge enablers</th>
<th>Sharing tacit knowledge</th>
<th>Creating a concept</th>
<th>Justifying a concept</th>
<th>Building a prototype</th>
<th>Cross-levelling knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instill a vision</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Manage conversation</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Mobilise activists</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Create the right context</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Globalise local knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

Institut für Öffentliche Dienstleistungen und Tourismus

von Krogh et al. 2000
Basic structure for developing a knowledge management system

Why?
Revision of knowledge
Topography of knowledge
What?
Creation of knowledge
Use of knowledge
Where?
Documentation of knowledge
Allocation of knowledge
Who?

Success factors for knowledge management

- Solutions by technik
  - IT solutions to exchange and transfer knowledge

- Solutions by individuals
  - Exchange of implicit knowledge by experts

- Communities of practice (CoP)
  - A Community of Practice defines itself along three dimensions:
    - First the joint enterprise as understood and continually renegotiated by its members,
    - Second the relationships of mutual engagement that bind members together into a social entity,
    - Third the shared repertoire of communal resources (routines, sensibilities, artefacts, vocabulary, styles etc.) that members have developed over time

- Communities of interest (CoI)
  - Defined by their collective concern with the resolution of a problem
  - Bring together stakeholders from different communities of practice (CoP)

Institut für Öffentliche Dienstleistungen und Tourismus
Universität St.Gallen
Knowledge management for regions:

Example of Switzerland
Regional knowledge management

- Regional knowledge management is not (only) a management of knowledge but the management of common perspectives, visions, targets and projects which are worth creating new knowledge.

- Knowledge management itself is not enough.

- The aim of knowledge management is to trigger innovation and actions to achieve sustainable and successful regional development.
Strenghts and weaknesses of the current regional knowledge management system in Switzerland

Knowledge and knowledge demand

- there is much knowledge available (used by federal government, regions, municipalities, etc.) generated in common projects
- But: knowledge is linked with existing networks (inner circles), the exchange of knowledge has to be improved

Structures

- basic structure exists, experts exchange their knowledge flexibly and pragmatically
- But: besides these expert networks the structures for knowledge transfer is often unclear and less formal

Supply of knowledge exchange

- some good further educations for regional managers exist
- But: the range of further educations is not linked and they have different aims, there are not very well accepted
Aim of a regional knowledge management system

- Support for all responsible persons who contribute to the adaptability and learning aptitude as well as to the innovation of a region
- Enable regions to use their available knowledge to strengthen entrepreneurship and innovation
- A regional knowledge management system is an open, social system, whose members are functionally connected in a network
- A regional knowledge management system is defined by the knowledge-exchange relationship between its members.
- A knowledge system comprises various persons and institutions who are carriers of knowledge relating to a specific system
Strategies for regional knowledge management

- mobilisation and networking
  - exchange and share of knowledge (especially implicit knowledge)
  - sensitise for knowledge management

- qualification
  - create skills and competences for innovative actions
  - further education

- knowledge infrastructure
  - exchange of tacit knowledge by technical infrastructure
Elements of the Swiss regional knowledge management system

With the help of people:
- Mobilise + network
- Communities of practice
- Communities of interests
- Research network
- Share and exchange knowledge
- Create knowledge

With the help of people:
- Qualify
- Community of practice
- Meeting/seminars
- Research network

With the help of technology:
- Knowledge infrastructure
- Knowledge portal
  (Info on NRP, Regions „search engine“, ICT Support)
  Process, bring and fetch knowledge

Network Management
regiosuisse Auftaktveranstaltungen

regiosuisse unterstützt die Regionalentwicklungspraxis durch den Aufbau strategischer und thematischer Wissensgemeinschaften. Diese fördern die Erarbeitung gemeinsamer Entwicklungsstrategien sowie den Erfahrungs- und Wissensaustausch.

Im Rahmen von Auftaktveranstaltungen in Neuchâtel, St. Gallen, Schwyz und im Tessin bietet regiosuisse AkteurInnen und AkteurInnen der Regionalentwicklung Gelegenheit, sich einen Überblick über die Aufgaben und Angebote der Netzwerkteile Regionalentwicklung zu verschaffen und mit Vertretern der Netzwerkteile die Bedürfnisse zum Wissensmanagement zu diskutieren.

Referenten sind:

- Martin Sihler, Leiter Wissensadvisory Team, Regierungsrat von Neuenburg
Establishing a regional knowledge management system means learning and improving the learning aptitude of a region.

Informal learning and the exchange of implicit knowledge are important characteristics of a regional knowledge management system.

A regional knowledge management system has to have an aim and has to lead to action and to innovative solutions.

Regional stakeholders are crucial acteurs and they have to give strong support.

The efficient management of the available regional knowledge and the ability to create new knowledge are important success factors for the development of a region.