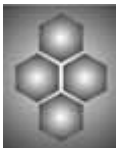

40TH CONGRESS OF THE
EUROPEAN REGIONAL SCIENCE ASSOCIATION

Barcelona, August 29 - September 1, 2000

Theme: 33: Tourism and regional development
Session: FR. 14:00-15:30

Insights to the Development and Implementation of an Information System for Tourism, Environment and Soft Mobility.

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Abstract

The paper examines a best practice example for a regional Information System on issues, relevant for regional development. The BodenseeClick Information System for Tourism, Environment and Soft Mobility is operating since 1998 in the international region of Bodensee (Lake Constance). The Information System is has been developed by private and non-governmental institutions with the help of European funding. BodenseeClick is an approach to soft mobility in tourism, which can be of effect for other regions. It shows an attempt, not only to realise technical solutions, but also to use and to develop a regions human capital.
The paper will present some background information about tourism and mobility in the tri-national tourist destination of Bodensee, the objectives and actual state of the Information System BodenseeClick and some hints on how other regions can benefit from the experiences.
The first section presents the specific situation of tourism mobility in the Bodensee region: tourists are travelling mostly with their private cars, well know problems arise: filled parkings, congested innercity roads, pollution, etc. At the same time, the public transport system has to face the problems of a cross border region: timetables are very complicated, lines end up at the border, information is hard to get, etc.
The second section discusses the objectives of BodenseeClick: the intelligent interlinkage of tourist information, regional to create an instrument for mobility consulting in the international destination of the Bodensee. BodenseeClick was designed as an integrative project which includes different elements:

- A free internet-based information system for Tourism, Environment and Mobility
  At the end of 1999 it includes about 700 entries of places which can be searched in different modes. The data stems from existing print media and databases.
- Qualify and sensitise counter personnel for 'intelligent mobility'
- Public relations work for the visitors about 'intelligent mobility'

The last section describes the conception for a long-term basis of the project: partnership of tourism institutions, transportation providers, a touristic publisher and environmental organisations. Plans will be introduced to integrate new forms of information and interfaces to new technologies.

Key words: mobility management; tourist information; public transport and environment; cross-border co-operation;

1 Introduction

In early 1998, the recent trends in the field of tourism and mobility brought together private an public organisations in the Lake Constance Region, among them an NGO for nature protection, a publishing house, a software house and different regional authorities.

This group, led by the International Bodensee Foundation for Nature and Culture organised an international workshop with over 50 experts from the fields of tourism, transport and environment on the themes of public transport services, new trends in leisure-time demand and behaviour as well as solutions for higher acceptance of public transport by guests and local people.

Result of the event: The reduction of the individual traffic increases the quality of a vacation destination. Attractive offers were made in the public traffic in the international Lake Constance region just for vacationists. However, there's no sufficient demand could be generated. The reasons are various: little acceptance, missing information, high prices. The support of an ecologically compatible mobility in tourism must start at the information and the advice of the guests. The tourism experts agreed that public transport is considered by the guest as "way full of hitches". The question therefore is: how can be simplified, what has to be given to the guests with enormous effort? The participants of the workshop agreed, that the idea an Information System for tourism, environment and soft mobility could be a meaningful solution to this problem – the BodenseeClick idea was born.

Since then, BodenseeClick worked two years, and has been added as a best practice example to a number of internet networks for soft mobility, as well as for sustainable regional development.[1]

This paper will present some insights to the development and implementation of BodenseeClick in the international Region of Lake Constance. The so called Regio Bodensee is situated in the heart of Europe. Three countries with German as a common language, Switzerland, Austria and Germany, are bordering the lake and form together with the Principality of Liechtenstein the Regio Bodensee.

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[1] e.g. 'EcoTip', an information service of ECOTRANS for students and professionally interested people, BodenseeClick belongs to the "positive measures" of private institutions in the filed of transportation.

2 Initial position of the project

The international Regio Bodensee is a common market or destination[2] for vacation and recreation. It is, since the end of the last century, one of the most important tourist destinations in Germany.

Alone in the German part, there have been more than 3,6 million overnight stays in hotels, inns and boarding houses in 1999. Furthermore there are 2,6 million overnight stays in private facilities and at least 1,4 million overnight stays on camping grounds. In total we had 6,6 million overnight stays in 1999 and therefore, tourism is an important economic factor in this region. Approximately 15.000 fulltime jobs depend directly on touristic activities.

One of the characteristics of the visitors of this region is their very high mobility. Guests do make a lot of trips in the region, and they usually go by private car (over 85% of the trips have been done by car). Furthermore, shipping plays an important role in leisure time traffic in the region. The question is, whether this is this 'public transport' or a touristic offer itself?

Public transport by train or bus around Lake Constance does not play a significant role in leisure time traffic . When many trips are done by car it leads to the well-known problems: overfilled parking lots at the lakeside, queues by the car ferries or in the feeder roads to the motorways, air pollution, noise disturbance etc.

At the same time, the public transport system has to face the typical problems of a cross border region: timetables are very complicated, lines end up at the border, information is hard to get, etc. (Schnell, Thierstein 1999; Mettan, Erlanger 1999)

However, these problems are not only caused by tourist mobility and leisure time traffic. Studies show that the local population contributes as well to this problems. Experiences from similar regions show that the local population causes up to 85 percent of the recreational traffic.

Over the last years, there have been many initiatives to improve public transport and thereby make it more attractive to leave your car at home and go by train or bus instead. These initiatives, like a new transborder railway line or a day ticket for a huge crossbor-

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[2] A 'destination' in this sense is a place, which has been chosen by the guest for a certain activity. A destination may be a certain town or region as well as a specific disposition of the place (Bieger 1997)

der area, have brought good results – especially among the local population (Schnell, Thierstein 1999).

However, no significant change could be noticed in the mobility behavior of the guests. Nor could the steady increase in vehicle movements be broken, nor did the counter personnel of the tourist information offices and the hotel receptions get more inquiries in excursions with public transport traffic.
There are several reasons for this: lack of knowledge of the offers, confusing fare prices and time of departure, comfort and most of all lack of information and that is the starting point for the “BodenseeClick”.

The 'market' for tourism information systems at that time was dry. Though the possibility of presenting their offers and products over the internet seems like a revolution to the whole tourism industry, this sector was characterized by a few dinosaurs of information and booking systems.
Today, the tourism market is penetrated by the development of closed and open networks, such as Wide Area Networks, Global Distribution Systems and the Internet. Global tourism industry enabled enterprises to enhance there operations and to expand geographically (Buhalis 1998). And the most successful way of spreading tourism information nowadays is the World Wide Web (WWW). According to a recent survey this summer made by NPD Online Research, nearly 70% of Web surfers visited a travel-related Web site (NPD 1999). However, tourism today is regarded as one of the most successful applications of electronic commerce (Küng et al 1998).

3 The BodenseeClick information system for tourism, environment and soft mobility

BodenseeClick has been started in 1998 as an integrative project which links tourist information, regional and environmental information in an intelligent way and which creates an instrument for mobility consulting in the international Regio Bodensee.
The core element of the project is an electronic information system which helps Counter staff in and tourist information offices to do their job. They can easily retrieve information about most of the different tourist attractions in the international Regio Bodensee. So far, that is nothing new. The innovative aspect if BodenseeClick is the automatic

combination of the tourist information with an electronic schedule information. There is 'one click' for the guest from every attraction point in the system to detailed information how to get there by public transport– or by other means, if there is no bus or railway line going there. All you have to insert is the departure time.

Beneath the internet information system, the project includes different measures for qualification and sensitising of the counter personnel as regards 'intelligent mobility' and public relations activities.

3.1 Structure of the internet information system

The internet information system of BodenseeClick is based on different catalogues of information on the international Regio Bodensee. The system itself has been programmed in MySQL, a real multi-user, multi-treaded SQL shareware databank.[3] BodenseeClick creates the information platform on which the following elements are connected up to each other integrally:

- **Tourism Information**

  Descriptions of all tourist attraction points and communities in the international Regio Bodensee, integration of the Tourism Information Norm (TIN), multiple search possibilities using different levels and types of information (theme, geographical or keyword search).
- **Mobility Service**

  Individual transport information for all forms of public transport (train, regional bus, city transport, ships and ferries) to every tourist attraction point.
- **Reservations and Ticketing**

  Enquiry and booking possibilities for hotels, connection with regional and local travel accommodation & agencies.
- **Environmental Information**

  The representation of regional basic information covering nature and environment (e.g. nature reservations and parks, environment centres and outstanding areas of natural beauty). Information about regional producers of
- **Management System**

[3] SQL is a standardized database language, that makes it easier to save, update and access information - for example save and retrieve information on a WWW server. MySQL is extremely fast and flexible enough, to file even huge data units like pictures.

System for decentralised content providing and support, user statistics.

These different content elements are integrally connected with each other on a central web-platform.

The internet homepage of BodenseeClick (see) starts with the following divisions:

→ Attractions ("Sehenswert-Erlebenswert")

→ Shop ("Einkaufen")

→ Stay ("Übernachten")

→ Towns and municipalities ("Städte und Gemeinden")

Figure 1 Homepage of BodenseeClick

The database contains data about tourism and scenic attractions, communities and regions as well as information about nature conservation and environmental issues.

The initial data stock has been compiled and editorially arranged by the leading publishing house for tourism media in the Regio Bodensee, the Bodensee Magazin Verlag, with the help of the International Bodensee Foundation for Culture and Nature.

BodenseeClick links the objectives of its database with information about how to get there by public transport and with some general mobility information.

The direct linking of the objectives and the time table happens with the help of a Common Gateway Interface (CGI) to the public Electronic Time Table Info (EFA) of the State Association for Regional Transport of Baden-Wuerttemberg (NVBW) (see Figure 2).

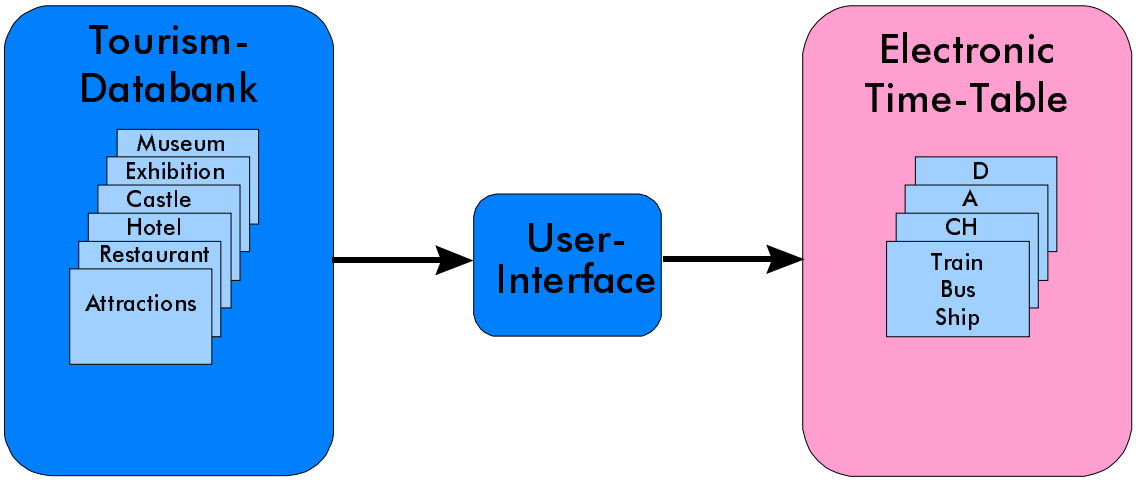

Figure 2 Integration of tourism information and public transport schedule

The main principles of the schedule information are:

- every objective in the data bank is assigned to its nearest bus stop, railway station or landing stage.
- At the first-time use of BodenseeClick, the user specifies the public transport stop next to him or her, which is saved in a cookie by the internet browser.
- The exact date and time of has to be entered in a Java-applet every time a time table info is requested.

The BodenseeClick system sends these threefold information via cgi-interface to the EFA system and gets the desired time table information. EFA always provides information about the next four connections.

This information appears in a screen frame and is able to be printed by the user. The user doesn't recognize that this information comes from a completely different informa-

tion system. The integrated linkage of two information systems offers a number of advantages:

- the user is able to retrieve information easily (one information system which requires no huge pre-knowledge and is time-saving).
- the supplier of the information system is only reliable for the content-priviging and service suppoert of one databank. The support for the schedule information is perceived by the responsible offices
- the existing schedule information system EFA is being used more frequently.

3.2 Content Systematics

Today, the databank contains about 1000 entries. The most relevant information basis was the "Bodensee Magazin", the most popular tourism magazine in the Regio Bodensee. Furthermore, information stems directly from the tourism attractions and from cross-border information projects regarding culture ('Kulturhandbuch Hochrhein-Bodensee') or nature and environment ('Umwelt-Terminkalender Bodensee').

For every entry in the databank, the information was recorded by a Raster uniform grid, which distinguishes between the following information (see Figure 2):

- Address (incl. Telephone, Fax, E-mail, Homepage)
- Short description
- Opening hours
- Admission charges
- Target groups
- Rate offers/special offers of the public traffic
- Environmental information
- Tips for Trips' to nice places in the proximity.

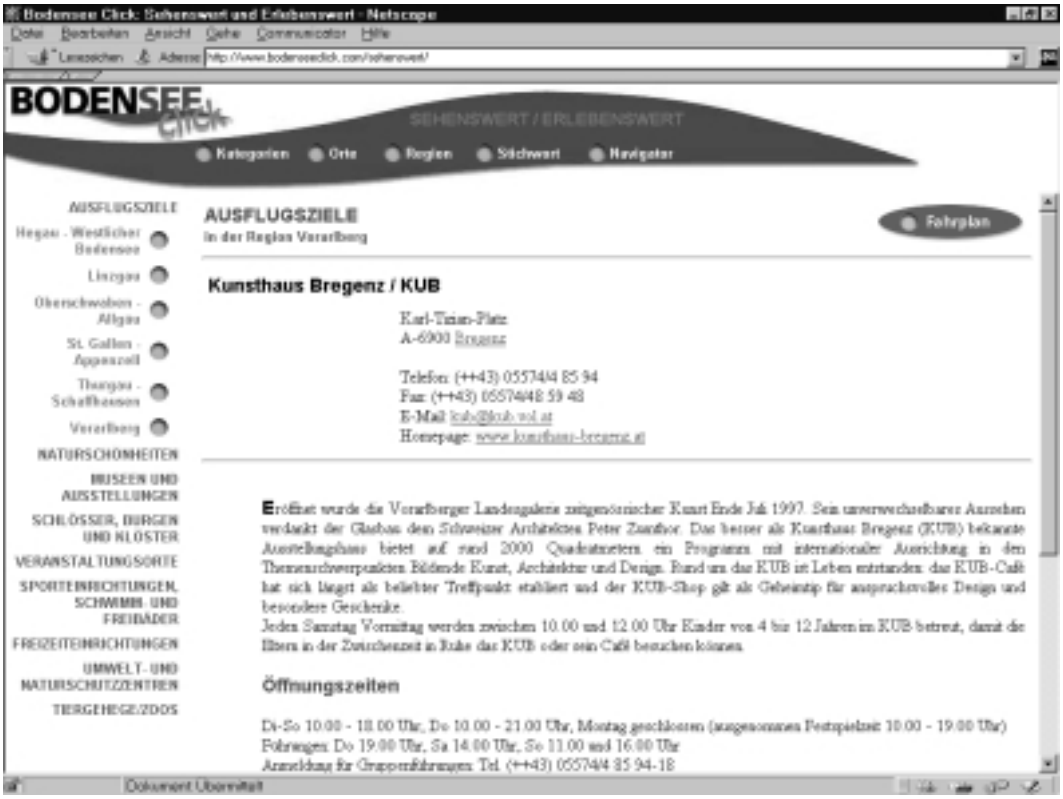

Figure 3 Exemplary representation of an attraction point

The single entries of the databank are assigned to different categories with multiple mentioning being possible:

- Tourism destinations and attractions
- Museums and exhibitions
- Castles and cloisters
- Event places
- Sports facilities
- Public baths leisure
- Leisure time facilities
- Environment and landscape conservation centers
- Zoos
- Scenic attractions

The different attractions and places are assigned to six subregions, so that users are able to search spatially. These subregions are defined on the basis of landscapes rather than administrative delimitations. In Germany there are the three subregions Hegau (western Lake Constance), Linzgau and Upper Swabia/Allgäu. The swiss subregions are Thurgau/Schaffhausen and St. Gallen/Appenzell and the Austrian region is Vorarlberg.

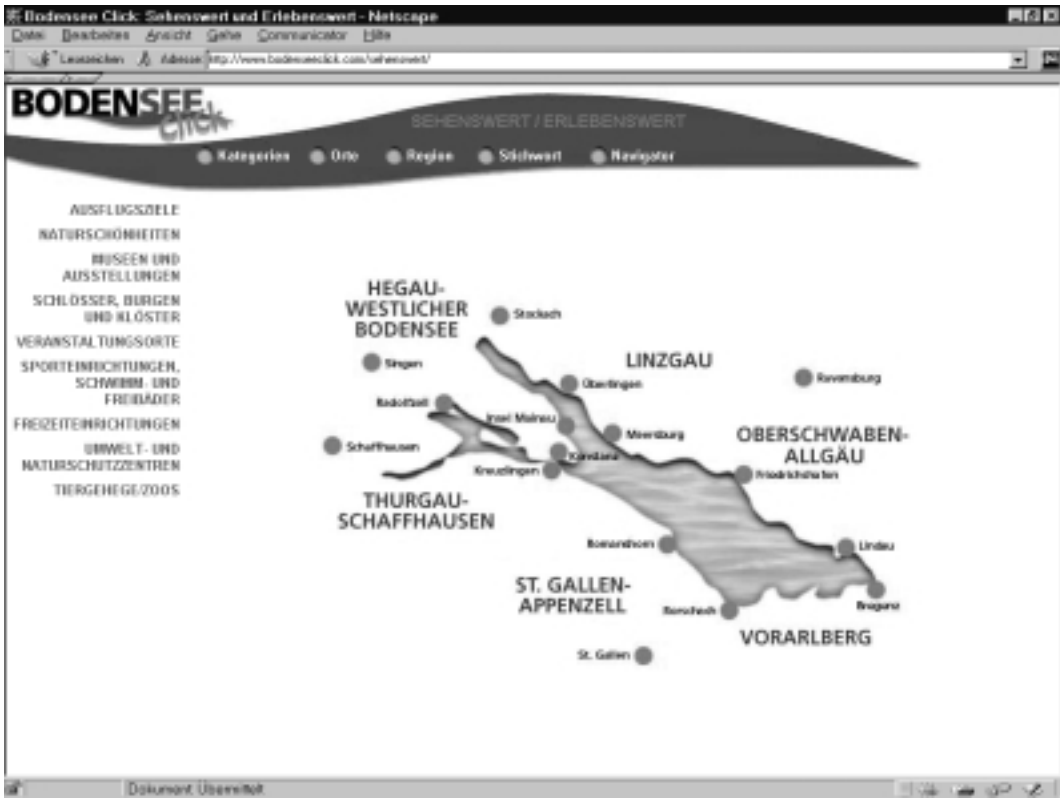

Figure 4 The sub-regions and the categories of the content

Since 1999, the **'Shop'** presents a 'Rural market place', introducing the Regio Bodensee's Wine-growers, Biological farmers, Fishermen and shops for regional products. This module is based on the ‚Nature food guide Bodensee‘, co-ordinated by the International Bodensee-Foundation for Nature and Culture.

Also since 1999, BodenseeClick's **stay** integrates the Hotel catalogue of the International Hotel association Bodenseee with the possibility to post an automated booking enquiry for 150 Hotels.

3.3 Accompanying activities

In the first two years of BodenseeClick the project team organized some trainings for counter staff and presented the project at different forums and media throughout the

Regio Bodensee and other regions, which have the same problems, e.g. border regions, tourist destinations).

The trainings were used to increase the publicity of the project within the target group and to get detailed feedback about the problems in every day work with the information system.

Additionally, in the first model season 1999 a visitor survey was conducted, which showed, that the guests, which have been consulted with the help of BodenseeClick, predominantly were content as regards speed, completeness and quality of the information. This survey, as well as an additional survey by a 'mystery person', revealed some problems which are presented in the next section 'experiences'.

4 Present Experiences

The project so far has got two major phases behind itself, a pre-test in four hotels and four tourist information in 1998 and a first model phase in 1999 and the actual summer season 2000.

The pre-test showed for instance, that the system in principle is suitable to the modus operandi of the TI offices. The time required until the guest get's his hands on his personal schedule to the desired attraction point, is about three minutes. This seems quick enough for the guests and the counter personnel. Different events for the primal target group (TI, Hotels) showed some restraint to use the information system. Primarily, they expressed problems of lacking technical equipment or missing internet access at the counters.

This led on the one hand to increased efforts as regards motivation of the potential institutional users, e.g. additional trainings, presentations and direct conversation. On the other hand the web statistics indicated, that the system is used strongly by private users.

A visitor survey and an additional 'mystery person investigation'[4] in summer 1999 confirmed that the Tourist Information offices still hesitate to use the Information system as a prior-ranking information tool for time reasons. The explanation is simple: normally visitors know exactly what they want to do in their holidays - but usually, they have no

[4] A person of the project team takes the part of the guest, who wants to get information about attraction points, possible day trips and how to get there by public transport.

idea where they can do this. They do not know about the possibilities they have. According to this, the counter staff is used to give information about possibilities. For instance they hand over printed schedules or information brochures to the visitors. They are not used to give mobility information or information about public transport. The experience of the counter staff show, that this kind of service is very time-consuming. In their eyes, the information system should offer more standardized touring information, i.e. possibilities for self-service information (suggestions for day trips including mobility information, maps for tours to the most wanted attractions). This may be provided by public information terminals.

The assessment of the contents and the technical functioning of the BodenseeClick system shows a high degree of satisfaction with the users. Further, in the self-assessment of the suppliers, the well defined responsibilities for content providing have proved to be helpful to reach the aim of presenting complete and current information.

In the public, the system has gained great recognition. Multiple links to future initiatives and project networks have been established. For example, BodenseeClick has been integrated into the network of 'Future regions', a competition supported by the federal ministry for the built environment in Germany (http://www.zukunftsregionen.de). Additionally, there have been a lot of (positive) media reports.

Technologically and regarding the ability to be implemented successfully, the BodenseeClick system is judged very well in comparison with similar systems. According to a study, which was ordered by the International Tourism Marketing Association Bodensee (IBT) in 1999, BodenseeClick is one of the best qualified information systems in the tourism sector.

5 Lessons learned

The experiences made since 1998 lead to the following conclusions for the further implementation of BodenseeClick. First of all, the maintenance of the system requires a stronger involvement of the Bodensee Tourist Board. Therefore, the initiators of BodenseeClick signed a contract with the ITB, that ensures the integration of BodenseeClick

with the planned reservation and booking system of the IBT. As well, the integration within the destination management framework of the IBT ensures standing of the information system in the tourist information offices. As another effect, the controlling of the actuality and the correctness of the information can be further improved by this organisational change.

In general, new technical options shall be integrated and the service offer shall be completed. Especially services for the regional population shall be improved. The following measures have been initialised and are to come:

- Integration of more up-to-date information (calendar of events)
- Information about further mobility services (wheel and car rental, car-sharing, etc.).
- Online reservation and booking of accommodation
- Reservation and booking service for all mobility offers
- New search possibilities through of the geographical information system (GIS) of a regional planning authority
- Integration of new forms of information and interfaces to new technologies (e.g. Wireless Application Protocoll WAP and Digital Audio Broadcasting DAB).
- Internal marketing: Information and training events are planned.
- External marketing: strengthening of the co-operation with other regional organisations and municipalities

As a conclusion for the use of regional information systems in general, the success factors of the BodenseeClick project can be summarized as follows:

- **Addressing the network character of tourism (and regional development)**
  An information system should be well established in the region. A wide partnership of tourism institutions, transportation providers, a touristic publisher and environmental organisations is needed to guarantee the completeness and topicality of the included data. This partnership works within BodenseeClick. It also guarantees free of charge entries and free public access to BodenseeClick to this day.
- **User Friendliness, (Electronic) Customer Care and Virtual Communities**
  User interfaces for all user groups are reasonably simple and the use thereof can be quickly learned, with the "Keep It Simple" principle being realised. In each site, there is a customer offer and a high level of interactivity. The "Bodensee at one

click" shows that user friendliness can be established by an intelligent combination of existing services and different stakeholders.

- **Development of the Human Capital**

  Not only technical solutions shall be developed. A region's capability to adapt to future challenges depends on its human capital. The example of BodenseeClick shows, that learning processes can be established be regional co-operation and permanent exchange of experience and knowledge.

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