Mario Pichler
Senior Researcher, Software Competence Center Hagenberg GmbH

Martin Rutzinger
Senior Scientist, Institute for Interdisciplinary Mountain Research
Austrian Academy of Sciences

Herta Neiss
Head of MBA-Tourism Management, Institut für Sozial- und Wirtschaftsgeschichte
Johannes Kepler University Linz

insightTourism – Towards Understanding Online Behavior of Tourists

In this commentary, we introduce the Austrian eTourism research project *insightTourism* that investigates the gap between increasing spontaneity of tourists' booking and activity decisions and the long-term investment and planning of the tourism sector.

Motivation

Tourism has a major impact on the Austrian economy. Experts expect further growth of the tourism sector in coming years[1]. Additionally, the tourism sector is facing continuously and significant change, especially considering tourists' behavior. Tourists make their decisions about destinations, activities, duration of stay, etc. in an increasingly spontaneous manner[2]. Such changes are difficult to track in tourism statistics and market enquiries, which are usually designed for monitoring large periodic intervals. For example the German Travel Monitor is published on an annual basis and the Tourism Monitor Austria on a two-year cycle[3], whereas both are used as one basis for touristic investment decisions. While statistics, market research and tourism strategies are typically developed with a multi-year perspective, the short-term decision-making behavior of tourists cannot be mapped properly. These challenges demand for new methods for analyzing short-term changes in travel decision-making and tourist behavior for optimizing touristic investments and enabling proactive destination service adjustment.

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[1] http://www.statistik.at/web_de/statistiken/tourismus/index.html (accessed 28.7.2014)
[2] http://www.statistik.at/web_de/statistiken/tourismus/reisegewohnheiten/index.html (accessed 28.7.2014)
[3] http://www.austriatourism.com/tourismusforschung/t-mona-urlauberbefragung/ (accessed 28.7.2014)

Objective and Research Questions

The objective of *insightTourism* is the automated analysis of Web 2.0/social media data to better understand short-term behavior of tourists to improve tailored offers, services and investments by tourist destinations and generally inform decision makers in the tourism industry. This will be reached by answering the following research questions.

- Which new explanatory variables of tourism demand can be derived by analyzing new information and communication channels such as Web 2.0/social media channels?

- Which factors are influencing online booking decisions and what are actual demands of the guest?

- Which recent trends on modified tourist behavior can be derived for the Austrian tourism and leisure landscape?

Approach and Method

insightTourism develops prototypical tools and related services that allow the derivation of spatially and temporally highly resolved information on tourist interests, needs and behavior influencing factors for better understanding the increasing spontaneity in their decision-making behavior. This extracted information is then provided to improve short- and medium-term planning, adjustment and adaptation of tourist destinations' offers and services.

Specifically, *insightTourism* investigates, (1) the importance of digital information and communication channels such as social media streams for booking decisions, (2) which new factors (that have not been taken into account in tourism statistics and market research so far) influencing tourist decisions can be derived from these channels, (3) how to optimize the use of these novel channels by tourism professionals to optimize customer satisfaction (e.g. by value-based target group orientation to enhance the attractiveness of booking platforms). From an economic perspective, the goal of the introduced project is to support tourism businesses through improved data and analyses in the areas of efficient advertising and marketing and better investment decisions.

Within the project, the process of vacation choice is investigated by booking platforms and hotel websites of project partners. Specific marketing campaigns of the company partner Hotel Edelweiss (Obergurgl, Austria) and specially promoted events of destinations and tourist regions of associated project partners are serving as case studies for proof of concept and prototype development.

Considering social media channels, the project focuses on Twitter and tourism-related information spread in further linked channels and platforms. Using semi-automated information extraction methods such as natural language processing and sentiment analyses it is aimed at gaining new insights into tourist decisions. Heterogeneous data sources such as estimates of tourism professionals, tourism-related social media posts, and visits to hotel websites and panorama cameras at tourist destinations are integrated and analyzed.

Based on the newly identified influence factors a tourism knowledge model will be developed. This model will serve for explaining relationships between the newly identified and already known influencing factors. The model is integrated into a prototypical analysis software tool in order to simulate and analyze different scenarios of management options of tourism professionals giving new insights into changing tourist behavior.

Expected Results and Impact

The following results are expected in the course of the project: (1) infrastructure for data collection and information extraction from Web 2.0/social media content, (2) data collection and tourism knowledge model, (3) services to analyze the data on behalf of tourism businesses and their intermediaries.

The participating tourism technology providers are taking advantage of innovative software tools for high spatial and temporal resolution data analyses and forecasts of tourist behavior. Subsequently, tourism intermediaries will take profit of new service developments (e.g. optimized use of digital media for specific destinations), which can be developed based on the project results. Developed tools and services are the basis for short-term modeling of future spatial and temporal distribution of individual tourism demand, which will improve tourism decision-making and Austrian destination promotion.

Project Partners and Contact Information

insightTourism – Optimization of tourism investment decisions based on valid demand analysis by integrating social media and web data (funded by Austrian Research Promotion Agency, FFG)

Web: http://www.insight-tourism.at (primarily in German)

Twitter: https://twitter.com/insightTourism (English and German)

Coordinator: Software Competence Center Hagenberg GmbH (SCCH), Hagenberg

Project partners:

- Institute for Interdisciplinary Mountain Research (IGF) of the Austrian Academy of Sciences (ÖAW), Innsbruck

- MBA-Tourism Management, Johannes Kepler University Linz (JKU), Linz

- Seekda GmbH, Vienna, Innsbruck

- visit.at visualisierungs- und informationstechnologie, Henndorf, Salzburg

- Utopia Refraktor Ltd & Co KG, Linz

- Hotel Edelweiss & Gurgl Scheiber GmbH, Obergurgl

Associated partners:

- Österreich Werbung, Vienna

- Oberösterreich Tourismus, Linz

- Bundesverband Urlaub am Bauernhof, Salzburg

Affiliation of Authors:

Mario Pichler
Senior Researcher
Software Competence Center Hagenberg GmbH
Softwarepark 21
A-4232 Hagenberg
Phone: +43-(0)7236-3343-898
Email: mario.pichler@scch.at
Web: http://www.scch.at

Martin Rutzinger
Senior Scientist
Institute for Interdisciplinary Mountain Research
Austrian Academy of Sciences
Technikerstr. 21a, Otto Hittmair-Platz 1, ICT
A-6020 Innsbruck
Phone:+43-(0)512-507-49480
Email: martin.rutzinger@oeaw.ac.at
Web: http://www.mountainresearch.at

Herta Neiss
Head of MBA-Tourism Management
Johannes Kepler University Linz
Institut für Sozial- und Wirtschaftsgeschichte
Altenberger Straße 69
A-4040 Linz
Phone: +43-(0)732-2468-8863
Email: herta.neiss@jku.at
Web: http://tourismus.jku.at