Optimizing User Interface Design and Interaction Paths for a Destination Management Information System

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Abstract. Destination Management Organizations (DMO) being the central units in destination management within European destinations face increasing pressure due to effects of globalization. At the same time, effects of digitalization combined with methods summarized by the umbrella term of Business Intelligence create opportunities to tackle these challenges. Höpken et al. (2011) described how destinations can evolve to so-called *knowledge destinations*. With the help of a Destination Management Information System (DMIS) managers of DMOs as well as its various stakeholders are provided with holistic decision support when working on strategic development of the destination. The objective of this study is to conceptualize a novel DMIS user interface and evaluate its usability. The study (1) defines different analysis perspectives and corresponding performance indicators enabling a powerful decision support for destination managers and tourism stakeholders, (2) defines interaction paths along different abstraction levels to support drill-down analyses, and (3) evaluates the usability and understandability of the DMIS interface in the south-western Swedish destination Halland.

Keywords: Destination Management Organization (DMO) · Destination Management Information System (DMIS) · Management Cockpit (MC) · User interface (UI) design · Usability · Business intelligence

1 Introduction

Since 2000, tourism has seen a steady increase in revenues worldwide with an industry volume of $ 1,309 billion for 2014. Since 2010, the number of tourist arrivals rose steadily. In 2015, global tourist arrivals grew four percent compared to the previous year (UNWTO 2016:16). At the same time, the surrounding conditions of international as well as national economic competition have changed dramatically. Bieger and Scherer (2003:10–11) refer progress in information and communication technology (ICT), transport technology and deregulation of markets as drivers for these changes. Thus, these developments lead to increased market transparency while, at the same

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time, reduce the cost of travelling, which gives both consumers and private companies access to new markets.

The described opening of global tourism markets leads to increased competitive pressure in many countries of the world. Companies must respond to these changes with innovative power and flexibility and, thus, need the ability to develop new competences (Fischer 2009:1). Information and knowledge, which foster the early recognition of development trends and customer needs, help companies to succeed. Changed market conditions affect competition in the broad tourism industry. Next to individual tourism service providers in the field of accommodation or transportation, this especially applies to geographical target areas as competitive units, in tourism also referred to as destinations. Consequently, in the context of global competition, tourism destinations must cope with saturated markets and increasingly demanding customers, while product life cycles are shrinking at the same time (Fischer 2009:3). In addition, the public character of the so-called Destination Management Organizations (DMO) strengthens the interests of its numerous stakeholders. Next to local politicians and the various service providers, important stakeholder groups consist of the local population, the DMO's employees and investors as well as the visitors of the destination (Fischer 2009:66–68; Bieger and Beritelli 2013:91).

The described market changes combined with the claim towards professional management making informed and transparent decisions place new challenges on electronic management support. At the same time, more and more data is available as a consequence of ongoing digitalization processes. However, especially at the destination level, these data about customers, products and competitors often remain unused (Pyo 2005; Fuchs et al. 2014; Höpken et al. 2015). The use of Business Intelligence (BI) and its capabilities to convert data into information for decision-support helps to overcome changes in economic conditions and, thus, to ensure increased competitiveness. According to Bieger and Beritelli (2013:107), an ideal indicator system for measuring competitiveness must, next to other things, be simple, transparent and comprehensible to the practitioner but also based on theoretical models or theories in order to have explanatory power and, thus, be suitable as a strategic basis for decision-making. The research challenge now is to structure relevant information in a meaningful way and to present it in the best possible way to meet these managerial requirements.

The objective of this study, therefore, is to conceptualize a novel destination management information system (DMIS) user interface and evaluate its usability. Specifically, the study will (1) define different analysis perspectives and corresponding performance indicators enabling a powerful decision support for destination managers and tourism stakeholders, (2) define interaction paths along different abstraction levels to support drill-down analyses, and (3) evaluate the usability and understandability of the DMIS interface with input from major stakeholders from the south-western Swedish destination Halland. In more detail, the following research questions will be answered: *What basic structure should a DMIS have or how should content be subdivided within a DMIS?* Management information is to be divided logically, considering the specificities of tourism, thus, provide the greatest possible overview of the overall situation within a destination. *How should key figures be displayed within a DMIS?* Concretely, this question is about delimiting the flood of information within the

DMIS. In addition to the selection of suitable diagram types, the various levels of indicator visualization are discussed. Overall, this is intended to improve the understanding of economic contexts in destination management, since key performance indicators (KPIs) often have a causal link.

The paper is structured as follows. The first chapter introduced challenges, opportunities and resulting research questions for this work. The second chapter provides basic definitions and summarizes all related studies and concepts that inspired the creation of the concept, which is then presented in the third chapter. Chapter four covers the methodology regarding the concept's evaluation before concluding this paper and providing a suggestion for future work based on the presented findings.

2 Background

2.1 Success Factors of Tourism Destinations

A tourist destination is defined as a geographic area selected by a particular guest or guest segment. A destination should, by definition, include all the necessary accommodation, catering and entertainment facilities for a particular stay. Thereby, a destination is seen as the major competitive unit in tourism and should, therefore, be managed as a strategic business unit (Bieger and Beritelli 2013:54).

Tourists perceive and assess the overall performance of the destination as one single product. Thus, destinations are increasingly competing with other destinations sharing a similar range of tourism products and services, which require their continuous optimization, reconfiguration and promotion (Dettmer 2005:19; Bieger and Beritelli 2013:56). Furthermore, this work focuses on destinations that correspond to the so-called *community-model* (Flagestad and Hope 2001:452), implying a large amount of small-sized tourism suppliers and a dominant role of the DMO.

Usually, a DMO covers all functions of strategic management within a destination. This includes safeguarding the normative framework and ensuring the long-term cohesion of stakeholders. In addition, safeguarding the strategic competitiveness of the destination is another important task. Finally, the DMO also secures the operational tasks within the destination (Bieger and Beritelli 2013:102).

Destinations are often described as systems in which the various actors are related. In the center, there are the different individual service providers, coordinated by the DMO. At the same time, the system is embedded in different environmental spheres, which provide the natural, social, political and economic framework conditions for the provision of services. The demand side, which is strongly interrelated to the economic environment and, thus, the economic success of the destination, is another external factor of influence (Bieger and Beritelli 2013:62).

In summary, destination management deals with the constant monitoring and analysis of the environment, in particular tourist demand but also available resources and competition. The results are then incorporated into the strategy planning of the destination (Bieger 1997:129).

In a recent study, Bornhorst et al. (2010) identified determinants for the success of DMOs and destinations. They elaborated a model that explains the relationship between

the success of DMOs and destinations based on selected indicators. Accordingly, it is factors related to organizational efficiency that contribute to the success of a DMO. Supplier relations, effective management and strategic planning are examples of success factors of a DMO. The success of a destination, on the other hand, is measured by factors, such as product and service offerings and the quality of visitors' experience. Finally, community relations management, marketing and economic key figures contribute to the success of both DMOs and destinations (Bornhorst et al. 2010:587–588).

The findings of the mentioned study have been confirmed by Volgger and Pechlaner (2014). The authors investigated the role of network capability when measuring success of DMOs and destinations and found that network effects are increasing with the rise of power and acceptance of the respective DMO (Bornhorst et al. 2010:517–518; Volgger and Pechlaner 2014:72).

2.2 Business Intelligence in Tourism

Airline companies were pioneers within the tourism domain when it comes to analyzing customer transaction data as input to process and product optimization. The most prominent application areas of business intelligence (BI) in the airline industry comprise demand forecasting (Subramanian et al. 1999) and the prediction of customers' cancellation behavior and no-shows (Garrow and Koppelman 2004). A prominent example in the area of revenue and yield management in the airline industry is the DINAMO system introduced by American Airlines in 1988 (Smith et al. 1992). DINAMO builds on American Airline's GDS SABRE as the data source, providing comprehensive information on all transactions related to the areas reservation/booking, cancellation (no-show) and offerings/resource management.

Early applications of BI can also be found in the area of tourism destinations and the hospitality industry. A common example is the Austrian tourism marketing information system TourMIS (Wöber 1998), offering market research information and decision support for tourism destinations and stakeholders. TourMIS supports analyses of tourism performance indicators like arrivals, overnights or visits aggregated on the level of tourism destinations, regions, countries, or customer characteristics like sending country.

The Tyrolean (Austria) benchmarking tool Destinometer™ analyses representative survey data on customers' satisfaction with the destination offer (e.g. accommodation, gastronomy, animation, wellness, sport, shopping, etc.) as well as supply-side destination data (e.g. overnight stays, price levels for the various accommodation categories) and destination resource data (e.g. bed base, marketing costs, cost for energy, water and recycling and aggregated wages for tourism personnel) (Fuchs 2004b; Fuchs and Höpken 2005; Weiermair and Fuchs 2007).

MANOVA WEBMARK (Kepplinger 2006), a management information system for Austrian tourism stakeholders, supports tourism destinations, accommodation providers, attraction providers and ski lift operators in their operative and strategic decision making process. Tourism indicators like arrivals, overnights, visits, and passengers/transportations as well as guest feedback and satisfaction are collected and support the analysis of guest satisfaction (based on guests' demographic characteristics, travel

motives and consumption behavior), performance indicators and trends, benchmarking as well as strategic analyses like SWOT analyses or importance/performance analyses (IPA), respectively.

DestiMetrics (www.destimetrics.com) supports performance analyses and decision making for tourism destinations and accommodation providers in the United States and Canada and offers performance indicators like occupancy rates, daily average room rates, or revenue per available rooms (RevPAR). The system interlinks them with contextual factors influencing tourism demand (e.g. holiday information) and offers benchmarking functionalities for tourism suppliers within as well as between tourism destinations.

T-stats (www.t-stats.co.uk), another management information system (MIS) for tourism destinations, supports descriptive analyses and benchmarking functionality in the areas of accommodation (i.e. indicators like occupancy rates, average room rates, RevPAR, etc.), attractions (i.e. indicators like the number of visitors, expenditures per visit, etc.), general tourism statistics (e.g. arrivals, expenditures, car parking, visitors of information centers, visits to events and festivals, weather data, exchange rates, etc.), customer feedback and satisfaction (based on customizable surveys) and website statistics (i.e. web navigation behavior).

Thus, almost all BI components are gradually being used in destination management. However, Höpken et al. (2015) criticize the fact that these solutions typically are isolated solutions, thus, only covering small areas of relevant business processes within tourism. The authors, therefore, describe a holistic system architecture that precisely meets this challenge, namely the generation of knowledge across all relevant business processes of a destination (Höpken et al. 2015; Fuchs et al. 2014).

2.3 Dashboard Design

A further challenging aspect is the design and implementation of a management cockpit which is highly accepted by its users. While Few (2006) provides instructions on how to design meaningful BI dashboards, Georges (2000) focuses on a holistic organizational level when designing the concept of the Management Cockpit (MC). Its goal is to increase the productivity and effectiveness of a team of executives in any type of organizations. This is achieved by the creation of a common communication framework within a special meeting room (Daum 2006:313). The central structural element is a Wall Display System, consisting of a blue, black, red and white wall, respectively. They cover different tasks within the decision-making process and, thus, provide answers to the following questions (Daum 2006 p. 314):

- Where do we stand in relation to our overall goals? (Black Wall with the main indicators - the Black Wall integrates the Balanced Scorecard if it is used)
- What about our resources? What can we do? (Blue Wall with detailed indicators and information on resources and internal processes)
- What are the (external) obstacles and critical success factors that need to be overcome? Where do we have to act? (Red Wall with detailed indicators and information on customers, markets and competitors)
- What are the critical decisions that need to be taken now? (White Wall with information on previously agreed, ongoing measures, strategic projects, etc.)

The White Wall is usually represented by a separate whiteboard or presentation screen, which is used for monitoring previously taken decisions. The remaining walls are divided into six screens (i.e. Logical Views) which deal with information on the six most important questions per wall. Each of these six screens, in turn, contains exactly six individual pieces of information, which, in their combination, are supposed to provide answers to the respective question. Georges (Georges 2000; Georges 2000:133) justifies the restriction to six information blocks with the limitation of a human's short-term memory, i.e. the capacity to process information.

Additionally, the MC also defines different levels of visualization (Daum 2006:315):

1. Level 1 shows the overall status for the whole *Logical View* and for each of the corresponding six indicators, using a common traffic lights color scheme.
2. Level 2 uses specific diagram types to support managers to capture the overall status at a glance (e.g. a tachometer).
3. Level 3 shows further details within the relevant *Logical View* by utilizing commonly used chart types, such as line or bar charts, respectively.
4. Level 4 provides an additional level of detail and e.g. allows a drill down to the level of single transactions, spreadsheets, and reports used for aggregations.

Similar to Few's (2006) instructions on dashboard design, the SUCCESS rules by Gerths and Hichert (2013:17–37) define how business information can be presented in a standardized and clearly structured way (Schneider 2016:33). It also serves as the theoretical foundation for the non-profit association IBCS (International Business Communication Standards, www.ibcs-a.org), which is committed to the dissemination of standards for shaping successful business communication (Schneider 2016:33). More precisely, SUCCESS consists of seven rule areas that can be used to assess the quality of business charts and are referred to as SAY, UNIFY, CONDENSE, CHECK, ENABLE, SIMPLIFY and STRUCTURE (Gerths and Hichert 2013:17–37).

3 Conceptualization of DMIS User Interface

The concept presented in this section provides a suggestion for the general structure of the user interface for a DMIS as a special form of information system, described in the concept defining the *knowledge destination* (Höpken et al. 2011).

In the Management Cockpit (Georges 2000), indicators are divided into three walls with each having a different focus to answer relevant managerial questions. This holistic approach allows cross-industry usage of the concept.

According to Bieger (1997:129), constant monitoring and analysis of the environment, in particular the demand side, but also available resources and competitors, are the most important tasks in destination management. Combined with the findings on success factors in tourism and inspired by the MC, the proposed concept divides information into three perspectives, namely *Resources*, *Performance* and *Demand*.

With reference to the related model by Bornhorst et al. (2010), the depicted process and input variables within that model essentially correspond to the *Resources* available

to the DMO and the destination for the optimization of the overall destination product. These findings strongly correlate with the definition of the *Blue Wall* within the MC.

Furthermore, the measurement of success is represented by means of *Performance* variables. These could be economic key indicators, such as the return on investment (ROI) or tourist arrival data. But also qualitative indicators, such as the assessed visitor experience, could be used to measure success. These figures should, however, always be analyzed in relation to direct competitors to better evaluate success or failure. The success measurement, thus, ranks among the main tasks in destination management, which, in turn, has parallels to the *Black Wall* within the MC.

The strong influence of the *Demand* side on the success of a destination can be explained by the fact that a destination is mainly defined and interpreted by the final customer (i.e. tourist). Thus, the range of products and visitor services is constantly

Table 1. Identified perspectives including exemplary list of indicators

Resources	Performance	Demand
Community/supplier relations • Articles in newspapers & magazines • Fairs, festivals and other events • Community/supplier polls *Growth statistics* • Population • Capacity metrics • Number companies • Employment rates in touristic sector • Salary development • Tax income • GDP *Corporate social responsibility (CSR)* • Protective areas • Recreational areas • power/heat consumption • Energy mix • Waste accumulation • Share of regional products • Public project presentations • Urban/rural development	*Economic indicators* • Tourist arrivals, overnights • Bed occupancy rate • Season length • Revenues o Products o Services • Market share • Guest engagement areas *Satisfaction rates* • Guests o e.g. towards products and services • Residents o e.g. regarding tourism development • Employees o e.g. regarding salary development • Members o e.g. regarding market development *Competitor/* • Market share • Main competitors	*Psycho-graphic segmentation* • Pull/push motives *Socio-demographic segmentation* • Country of residence • Age (range) • Marital status • Household income *Social media statistics* • Likes, tweets, mentions, reviews, rankings • Sentiment analysis *Web usage statistics* • Website visitor tracking • Search statistics *Location tracking* • Guest movement • Consumption • Weather *Corporate social Responsibility (CSR)* • Guest awareness measurement • Used transportation types *Currency rates* • Most important sending countries *Risk analysis* • Technology shifts • (natural) disasters • Terrorism

adapted to the needs of the clientele. Destination guests also show specific travel motivations that are either intrinsic or influenced by the destination itself. In this context, researchers refer to so-called push and pull factors of travel motivation (Klenosky 2002). Economic revenues in tourism are only sustainable if demand meets suitable elements out of the overall destination product. However, customers can also be influenced by unforeseen factors, such as political decisions, price fluctuations or even the weather (Bornhorst et al. 2010:587). Thus, the demand-side comprises the critical success factors for the goal achievement, namely the success of the destination. Here we have the connection to the *Red Wall* within the MC.

Table 1 summarizes the three interface perspectives with related exemplary indicators. The latter are deduced from a literature review paired with several expert interviews (Bornhorst et al. 2010; Bieger and Beritelli 2013; Fuchs and Weiermair 2004; Weiermair 1993).

Figure 1 on the following page displays the prototypical implementation of the Resources view in the form of a dashboard within a prototypically implemented BI portal. The first highlighted area (1) in the figure shows the navigation elements used to access the three predefined views. The second highlighted area (2) frames the collapsed sub-categories (Logical Views within the MC) of this perspective. In this example, these are National Economy, Organization, Products & Services and Infrastructure. Finally, the third highlighted area (3) shows various indicators assigned to the sub-categories National Economy and Organization.

On each of the above described perspectives or dashboards, DMIS users will be able to create an unlimited number of sub-categories and within these an unlimited amount of information boxes, which summarize customized analysis results configured by users. Furthermore, the presented concept uses three visualization levels.

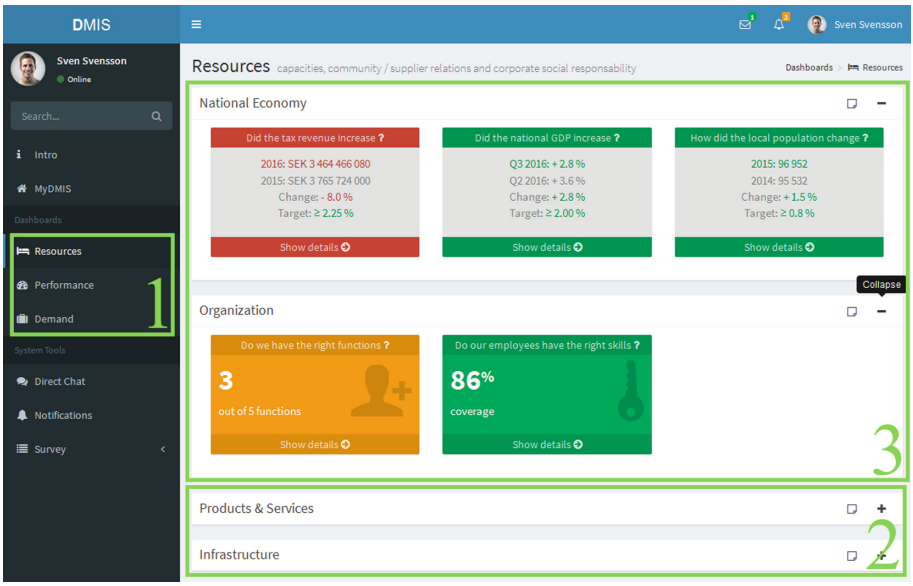

Fig. 1. Resources dashboard

On the first level, information boxes display a description (e.g. 'Are we satisfying our guests?' or just 'guest satisfaction') paired with details on associated indicator(s). The optional status for each information box is visualized using a traffic lights color scheme. The green status corresponds to the desired target value of a selected indicator. In the example in Fig. 2, the target value would be $\geq 10\%$.

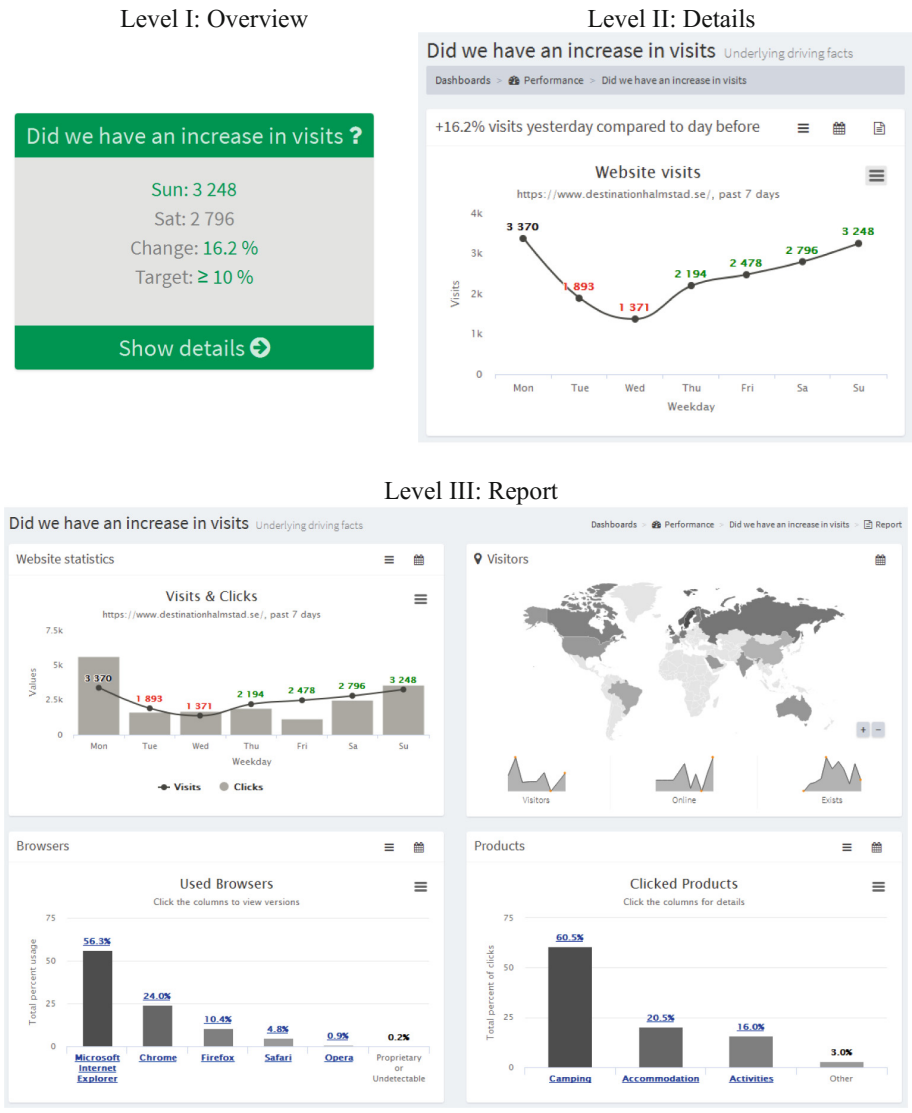

Fig. 2. Navigation overview

The second level shows the corresponding underlying data of a selected information box using appropriate chart types following the SUCCESS rules (Gerths and Hichert 2013:17–37). Additional grouping elements, such as grouping visits on a website by operating system and changes on the time interval of chart data from a daily to a weekly or monthly level, are also available.

The third level serves as the report layer for each information box. Based on the selected indicator, various aggregation functions and available grouping elements are applied and displayed in separate customizable charts. These additional charts could be implemented automatically based on the information within a holistic, multidimensional data warehouse (Höpken et al. 2013). This level also includes model-based results such as visitor segments based on similarities in their click behavior. The chart widgets can then be rearranged on the screen to finally be printed and shared with colleagues or used in business presentations.

Finally, the technologies and frameworks used for the implementation of the presented interface prototype are briefly summarized. *AdminLTE* (almsaeedstudio.com/themes/AdminLTE/documentation), based on the popular framework *Bootstrap* (getbootstrap.com) provides the layout framework of the prototype. *Bootstrap* takes over the entire user interface design and ensures that the prototype is presented in the best possible way on all commonly used devices. For the manipulation of different HTML elements, pure *Javascript* (JS) and special JS frameworks like *jQuery* (jquery.com) were used. Finally, *highcharts* (www.highcharts.com) was selected as a suitable chart library for plotting most of the commonly used chart types within the prototype.

4 Evaluation

4.1 Method

Within the last quarter of 2016, both a workshop and focus-group interview were carried out in the Swedish region of Halland to evaluate the presented concept for its suitability in the area of tourism destination management.

An important goal for the workshop was the early introduction of the presented concept to a first group of representatives both from DMOs as well as their corresponding stakeholders. During several brainstorming sessions, this group did collect sample contents and filled the predefined perspectives. No prototype was available at the time of the workshop execution. The results of the workshop were intended to serve as exemplary content of the later implemented prototype.

Based on the results of the workshop a prototype was developed. Each participant in a follow-up focus-group interview was asked to test the developed prototype. Subsequently, participants were asked to complete a survey. The first three elements of the survey examine the approval of statements which describe the core structural aspects of the presented concept. The degree of consent is measured on a 4-point Likert scale (strongly agree, rather disagree, strongly disagree), to force respondents to give a clear opinion (Likert 1932). In addition, respondents can add additional comments in a text field provided for each topic area.

Following the questions on the concept, participants should provide the likelihood towards a given set of statements in the areas of perceived usefulness and ease of use. These statements are based on the Technology Acceptance Model (TAM) as described by Davis (1989) and often used in conjunction with system installations and the measurement of user acceptance. Respondents can specify their consent using a 7-point Likert scale (extremely likely, quite likely, slightly likely, not likely, unlikely, slightly unlikely).

4.2 Results

A total of nine participants took part in the workshop. Next to the organizer representing the entire Swedish region of Halland, DMO representatives from three additional sub-destinations were present. Moreover, stakeholders representing hotels, hostels and camping sites mainly covered the accommodation sector. Two other participants finally represented a winter sports center. The results of the brainstorming sessions were used to fill the three predefined dashboards of the later implemented interface prototype with corresponding exemplary content.

A first focus-group interview was conducted with a total of five participants, four of which also answered the corresponding survey. Moreover, all participants work for DMOs, mostly in the field of destination development.

The results show a strong agreement among three of the four survey participants regarding the grouping of analysis results into the three predefined dashboards. The other respondent would also rather agree to the corresponding statement. Similar results can be observed regarding the levels of visualization. Here, however, the relationship between stronger and weaker consent is balanced. One participant also expressed the desire for further levels within the comments section. Finally, the result regarding the overall understanding of the developed concept is equal with the first statement, where three out of four respondents strongly agree and one respondent still rather agrees with the statement (see Fig. 3 for reference).

	strongly agree	rather agree	rather disagree	strongly disagree
1. The grouping of analysis results into the three predefined dashboards (i.e. Resources, Performance and Demand) appears to be logical	**3**	**1**	0	0
2. The levels of visualization effectively reduce information overloads (i.e. level I: target control -> level II: target value details -> level III: related data)	**2**	**2**	0	0
3. Overall, I understand and like the way information is structured within the DMIS.	**3**	**1**	0	0

Your comments regarding structure of and navigation within the system:
I want more levels.

Fig. 3. Survey results: concept details

Regarding perceived usefulness of the system, three out of four respondents considered it to be extremely likely that the system would make it easier to do their jobs. The other respondent also votes for a weak but still positive likelihood. Furthermore, two of the respondents consider it highly likely that tasks could be accomplished faster by using the system, and another two are very positive regarding the overall usefulness of the system. The other two respondents for each of the above statements would agree, too. Finally, two respondents believe that using the system would improve their job performance, productivity and effectiveness, respectively. The other respondents also rather or slightly agree with these statements (see Fig. 4 for reference).

	extremely likely	quite likely	slightly likely	neither likely nor unlikely	slightly unlikely	quite unlikely	extremely unlikely
8. Using the system in my job would enable me to accomplish tasks more quickly	**2**	**2**	0	0	0	0	0
9. Using the system would improve my job performance	**2**	**1**	**1**	0	0	0	0
10. Using the system in my job would increase my productivty	**2**	**1**	**1**	0	0	0	0
11. Using the system would enhance my effectiveness on the job	**2**	**1**	**1**	0	0	0	0
12. Using the system would make it easier to do my job	**3**	0	**1**	0	0	0	0
13. I would find the system useful in my job	**2**	**2**	0	0	0	0	0

Fig. 4. Survey results: perceived usefulness

Concerning ease of use, one respondent considers the system to be extremely user-friendly. Two other respondents think this is quite likely and a last one would also slightly agree. Moreover, two respondents would consider the system to be extremely flexible to interact with and two others think that it would be easy for them to become skillful at using it. The other respondents share these assessments by evenly assuming a slight or stronger likelihood towards the according statements. Another three of the respondents indicate that operating the system would be easy. The other respondent could not take a decision towards this specific statement. Finally, three respondents are quite convinced that interaction with the system would be clear and understandable with another three respondents believing the system will do exactly what they expect. Each of the other respondents assume a slightly likelihood towards the corresponding statements (see Fig. 5 for reference).

	extremely likely	quite likely	slightly likely	neither likely nor unlikely	slightly unlikely	quite unlikely	extremely unlikely
14. Learning to operate the system would be easy for me	0	**3**	0	**1**	0	0	0
15. I would find it easy to get the system to do what I want it to do	0	**3**	**1**	0	0	0	0
16. My interaction with the system would be clear and understandable	0	**3**	**1**	0	0	0	0
17. I would find the system to be flexible to interact with	**2**	**1**	**1**	0	0	0	0
18. It would be easy for me to become skillful at using the system	**2**	**1**	**1**	0	0	0	0
19. I would find the system easy to use	**1**	**2**	**1**	0	0	0	0

Fig. 5. Survey results: perceived ease of use

5 Conclusion and Future Work

Destination Management Organizations (DMOs) as central units for the management of European destinations face great challenges by the progressive effects of globalization. The use of Business Intelligence (BI) and its ability to transform data into information and knowledge input for decision-support helps to tackle these challenges while ensuring competitiveness (Fuchs et al. 2014; Höpken et al. 2015). In this context, the present work deals with the optimal structuring and presentation of these data based on selected design concepts, such as the Management Cockpit (MC) or SUCCESS rules for data visualization (Georges 2000; Gerths and Hichert 2013:17–37). The defined concept was first discussed and pre-evaluated within a workshop with destination stakeholders. The next step was to implement a first prototype, which then was used as input for a focus-group interview accompanied by a survey. The main findings were that the overall concept is well-understood and accepted by its selected users. All members of the focus group also think that a functional system based on the proposed concept would be useful in their daily business. Ease of use was also positively evaluated, although there is still room for improvement. Yet, the main goal was to get a first impression by practitioners regarding the developed concept. On the basis of these findings, a next logical step would be the successive development of the existing prototype into a functional prototype. This way, the whole concept could be tested under real conditions and over a longer period of time. Similarly, on the basis of a larger user group, a quantitative evaluation could follow in order to verify the concept's particular suitability to display BI-based knowledge in the domain of tourism destination management.

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