KNOWLEDGE ACQUISITION AND ASSIMILATION IN TOURISM INNOVATION PROCESSES

To cite this article: Hindertje Hoarau (2014) Knowledge Acquisition and Assimilation in Tourism-Innovation Processes, Scandinavian Journal of Hospitality and Tourism, 14:2, 135-151, DOI: 10.1080/15022250.2014.887609

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ABSTRACT

The paper develops a framework and an understanding of the external knowledge absorption in nature-based tourism companies. The concept of potential absorptive capacity is the starting point for exploring how external knowledge (tacit and explicit) is absorbed and assimilated in tourism innovation processes. Although knowledge is the engine that drives innovation, tourism firms can have problems and challenges when trying to absorb external knowledge for innovation. The main challenge is to access and absorb tacit knowledge. This type of knowledge is personal and sticky and therefore difficult to acquire and assimilate into the existing knowledge pool of organizations. Tacit knowledge is also difficult to imitate and is

therefore important for developing original and competitive innovations. In this study, knowledge acquisition and assimilation processes and how knowledge challenges are handled are investigated by adopting a multiple, qualitative case-study strategy that focuses on three Icelandic whale-watching firms. This study contributes to the tourism innovation discussion by identifying tourism specific abilities for the acquisition and assimilation of knowledge. The sense-making and strategic interpretation of this knowledge are considered to be important subsequent steps in the innovation process.

Key words: knowledge, innovation, absorptive capacity and nature-based tourism

Introduction

Tourism firms need to continuously innovate to be competitive, to adapt to an ever-changing world and to continue to offer attractive services to their customers (Hall et al., 2008). Knowledge can be understood as the fuel that drives these innovation processes (Cavusgil, Calantone & Zhao, 2003; Newell, Robertson, Scarbrough, & Swan, 2009; Nonaka & Takeuchi, 1995). The competitive advantages and innovativeness of firms no longer rely on internal knowledge alone but rather originate from the absorption of external knowledge (Gebauer, Worch & Truffer, 2012). However, external knowledge has not only been recognized as a resource but also as a problem for innovation. The difficulty of transferring knowledge, its tacit nature and its stickiness make it difficult to manage (Carlile, 2002; Shaw & Williams, 2009).

Tourism researchers have recognized that the generation and use of new, external knowledge are critical factors in innovation processes (Cooper, 2006; Hjalager, 2010; Hjalager, 2002; Shaw & Williams, 2009; Weidenfeld, Williams, & Butler, 2010). This recognition is reflected in the growing number of empirical studies (Bertella, 2011a; Bertella, 2011; Bertella, 2011b; Camisón & Monfort-Mir, 2012; Johannesson, 2012; Racherla et al., 2008; Weidenfeld et al., 2010) that address the role of knowledge in tourism innovation processes in one way or another. However, Cooper (2006) and Shaw and Williams (2009) have identified research gaps in regard to understanding the absorption of external knowledge in tourism innovation processes. The present paper addresses these gaps in the tourism innovation literature by focusing on the knowledge absorption processes of tourism firms and on the problem solving capacity of tourism managers when assimilating external knowledge for innovation. There are several models that address knowledge

transfer in tourism organizations; however, according to Cooper (2006), absorptive capability is the most relevant to the tourism context.

The concept of ´absorptive capability´ (ACAP) assumes that firms have varying capabilities in terms of knowledge absorption and the application of knowledge in innovation processes (Easterby-Smith, Graça Antonacopoulou, & Ferdinand 2008). Zahra and George (2002) suggested that ACAP encompasses both the acquisition and assimilation (the potential ACAP) and the transformation and realization (the realized ACAP) of knowledge.

The scope of the present paper is limited to the potential dimension of absorptive capabilities and the following research questions are addressed: (1) how do tourism firms acquire and assimilate external knowledge for innovation? And, (2) how do tourism innovators overcome challenges in the acquisition and assimilation processes?

Theoretical background

Innovation is increasingly understood as a cumulative and iterative set of activities and coincidences where multiple actors and multiple forms of knowledge interact (Newell, Robertson, Scarbrough & Swan, 2009). According to this view, innovation is fundamentally a social, interrelated, interdependent and collective process. The understanding of innovation in tourism as a collective process is reflected in the growing number of publications that are framed within a system or network approach (See, for example, Arnaboldi & Spiller, 2011; Bertella, 2011a; Hjalager, 2009; Hjalager, 2010; Johannesson, 2012; Larson, 2009; Lemmetyinen, 2009).

Knowledge plays a key role in the innovation and renewal performance of organizations. Cooper (2006) has defined knowledge as the use of skills and

experience to add intelligence to information to make decisions or provide reliable ground for action. At the organizational level knowledge is created by adding new knowledge to the existing knowledge pool. New knowledge is added when employees or innovators interact with external sources of knowledge. There are several ways of thinking about the role of knowledge in innovation processes. One way is to see knowledge as residing in the heads of individuals and, as such, appropriated, transmitted and stored by means of mental processes. A second way is the identification of knowledge as production factor, in which knowledge is seen as an objectified transferable commodity. The third way is to understand knowledge as residing in practice; participating in practice therefore becomes a way to acquire knowledge in action but also to change and perpetuate such knowledge and to produce and reproduce society (Gherardi & Strati, 2012).

Absorptive capability

ACAP addresses the role of external knowledge in innovation processes. Cohen and Levinthal defined ACAP as the firm's ability to recognize the value of new information, assimilate it and apply it to commercial purposes (Cohen & Levinthal, 1990; Gebauer et al., 2012).

Zahra and George (2002) argued that a firm´s ACAP is its dynamic ability to acquire and apply external knowledge that contributes to an improved competitive advantage (Jones, 2006). ACAP as a dynamic capability means that it can be attributed to a collective such as the firm or to individual employees or innovation managers. Individual absorptive capacity, at the level of tourism change agents, draws attention to the ability to appreciate and acquire knowledge from the external

environment; however, it also focuses on the ability to engage in the internal processes of learning (Easterby-Smith et al., 2008).

The concept of ACAP has the following four dimensions: 1) acquisition, 2) assimilation, 3) transformation and 4) exploitation. In addition, Zahra and George (2002) suggested that ACAP is composed of potential and realized absorptive capacity. These two components perform separate but complementary roles because firms cannot apply external knowledge without having first acquired it (Camison & Fores, 2010). The *potential* of absorptive capacity encompasses the dimensions of acquisition and assimilation and is composed of the connections and relationships between actors and their ability to develop knowledge out of these interactions. Conversely, *realized* ACAP refers to the transformation and realization dimensions of ACAP, meaning that new knowledge is transformed into innovations.

The acquisition capacity is a firm's ability to locate, identify, value and acquire the external knowledge that is critical to its operations. The assimilation capacity refers to a firm's capacity to absorb external knowledge. This capacity can also be defined as the processes and routines that allow the new information or acquired knowledge to be analyzed, processed, interpreted, understood, internalized and classified (Camison & Fores, 2010; Zahra & George, 2002). As such, assimilation refers to integrating external knowledge into the organizational knowledge base.

In a quantitative study, Camison and Fores (2010) have operationalized the acquisition and assimilation dimensions further based on a review of the recent literature. Although the context (high tech and manufacturing industries) and methodology (quantitative) is different from tourism research on innovation and knowledge management, tourism researchers can benefit from the insights that were

developed in these management studies. In addition, Gebauer, Worch and Truffer (2012) have conducted a qualitative study in which they present a coding structure for the potential and the realized ACAP elements. Combining the insights of these two studies results in four items for the acquisition capacity and four items for the assimilation capacity of tourism firms.

Knowledge of the competition (1), openness towards the environment (2), cooperation (3) and the internal development of competences (4) all refer to knowledge acquisition capacity. ´Knowledge of the competition´ is the capacity to capture relevant and up-to-date information and knowledge on current and potential competitors (Camison and Fores, 2010). This knowledge generates information regarding the business environment that could be relevant for new opportunities (Gebauer et al., 2012). Openness towards external knowledge sources, the recognition of external knowledge sources and the identification of new knowledge in external sources is captured in the ability to have ´openness towards the environment´ (Gebauer et al., 2012). In addition, Camison and Flores (2010) argue that openness is about a pro-active exploitation of the environment instead of a wait-and-see approach. Although Camison and Flores primarily refer to cooperation with R&D organizations, Gebauer et al. (2012) understand this ability in a broader sense as regular meetings with external actors and the acquisition of knowledge through various sources. The ´internal development of competences´ refers to the effectiveness of the internal development of competences needed for acquisition (Camison and Flores, 2010).

The assimilation capacity consists of the following items: the assimilation of knowledge and innovations (1), human resources (2), industrial benchmarking (3) and spreading the knowledge (4). The ‘assimilation of knowledge and innovation´

refers to the integration of new knowledge into the firm´s knowledge base, and it requires a shared interpretation of the newly acquired knowledge (Gebauer et al., 2012). ´Human resources´ refers to the ability to use the employees´ level of knowledge, experience and competencies in the assimilation and interpretation of new knowledge (Camison and Fores, 2010). Gebauer et al. (2010) refer to ´human resources´ as the collective understanding of the acquired resources. ´Industrial benchmarking´ is about the assimilation of basic, key business knowledge and technologies from the successful experiences of businesses in the same industry. The last item, ´spreading the knowledge,´ refers to the dissemination of new knowledge throughout the firm and the use of tools in these processes.

Barriers to the acquisition and assimilation of knowledge

Knowledge is not only a resource but can also be a barrier to tourism innovation processes. Organizational knowledge creation can be seen a process of mobilizing individual tacit knowledge and fostering its interaction with the explicit knowledge base of the firm (Nonaka & Takeuchi, 1995). Hence, the challenge is to identify, capture and convert tacit knowledge from the relevant individuals into explicit knowledge that is available for the innovators and others in the organization. Tacit knowledge is localized, embedded and invested in practice, and practices/activities help to foster an environment in which this type of knowledge can be shared (Swan, Scarbrough & Robertson, 2002). Explicit knowledge represents the knowledge capital that is appropriated by the organization, independent from who works there (Cooper, 2006). Sundbo (1998) has argued that to convert tacit into explicit knowledge, organizational knowledge needs a context, a shared social and mental space for the interpretation of information, interaction and emerging relationships; this shared space will serve as a foundation for knowledge creation. This insight has

consequences for the definition of absorptive capacity in a tourism-innovation context. New knowledge for innovation is not simply a matter of acquiring knowledge from the outside. Instead, the internal knowledge-base of the organization must be built by sharing or translating the tacit knowledge of employees into accessible, explicit knowledge, which requires frequent intensive and social interaction among the members of the organization (Nonaka & Takeuchi, 1995). Sharing knowledge for innovation thus inherently becomes learning in practice, which suggests that knowledge is accumulated in the experiences and know-how of the individuals who are engaged in a given practice.

Carlile (2002) argues that 'knowledge in practice' makes working across functional boundaries and accommodating the knowledge developed in another practice especially difficult. This phenomenon is referred to as the knowledge boundary (Newell et al., 2009). The problem of moving knowledge across boundaries has primarily been studied in relation to technical knowledge. However, as all knowledge is localized, embedded and invested in practice, it is to be expected that the types of non-technical knowledge that are relevant for tourism innovation are facing boundaries as well. Individuals who are able to connect two different communities are called boundary spanners because they overcome the barrier by having knowledge of both communities (Wenger, 1998). The concept of boundary spanners is closely related to that of knowledge brokers. Knowledge brokers support innovation by connecting, recombining, and transferring to new contexts otherwise disconnected pools of ideas (Verona, Prandelli and Sawhney, 2006). Hence, a key feature in overcoming the problem of knowledge appears to be the facilitation of knowledge exchange or sharing between and among various actors, including researchers, practitioners and policy makers.

Methodology

Absorptive capacity, learning processes and knowledge barriers are complex and contextual organizational issues. This study aims to contribute to theory building through the dialectic interaction between field studies and existing theory. A qualitative case study design has been chosen to allow the meaning, not the frequency, of knowledge and innovation processes in tourism to be understood (Easterby-Smith, Thorpe & Lowe, 2002).

A case study can be a study of a single individual, a group, an incident, or a community (Ruane, 2005). Three Icelandic nature-based tourism firms, designated Alpha, Beta and Gamma, have been selected as the cases for this study. Multiple cases enable a broader exploration of the research questions and theoretical elaboration but can make theoretical sampling more complicated (Eisenhardt & Graebner, 2007). The cases selected were critical and have strategic importance in relation to the general problem (Denzin & Lincoln, 2011). The choice to study marine nature-based tourism firms was justified by the innovative and developing character of these businesses in Iceland. Due to both historical and political events in Iceland, such as the collapse of the cod fisheries in the 1980s, the rapid growth of the economy in the 1990s, the economic and financial crises of 2008 and the recent volcanic eruptions, innovation has been part of the survival strategy of Icelandic tourism firms. The firms have been selected using the strategic choice method on the basis of the following similarities: wildlife tourism (whale-watching) as the core activity, over 5% annual growth during the past 10 years and being small enterprises located in Iceland. Data were collected in September 2010 and June 2011 in the form of a review of the companies' public reports and websites, face-to-face interviews with the managers, guides, captains and researchers and, when possible, participant

observation of the core activities. This triangulation of different types of data and methods contributes to the credibility and validity of this study (Easterby-Smith et al., 2002; Eisenhardt & Graebner, 2007). The interviews were semi-structured so that the informant could speak freely about the topics that were addressed. The interviews were recorded and transcribed. Personal observations of the firms´ activities were also conducted by the author during these periods.

Data analysis

The research was structured around the following areas of interest:

- The manager´s and other employees´ acquisition of knowledge and ideas
- The sharing of knowledge within the organization
- The firm manager´s ability to absorb external and internal knowledge for innovation

In an extensive coding process, the data were broken down into discrete parts that were, in turn, examined and compared to other parts for differences and similarities. The data were analyzed using a relatively open interpretation and coding search for interesting events. The existing studies were used to guide the analysis of potential ACAP dimensions. The constructs and ideas of Camison and Fores (2010) and Gebauer (2012), discussed in the theoretical section of this paper, formed the basis for interrogating the data, and a content analysis was conducted (Miles & Huberman, 1994). However, the analysis allowed for the emergence of new categories of acquisition and assimilation based on the data and for a more suitable understanding of the existing categories as applied to tourism cases.

Findings – abilities for knowledge acquisition and assimilation

The findings are organized around the potential ACAP abilities that are important for tourism. Table 1 presents an overview of the findings in the different cases, which will be further discussed in the remainder of this section.

Table 1: potential ACAP items in NB-tourism

Abilities – potential ACAP in tourism	**Alpha**	**Beta**	**Gamma**
1. Learning from competitors	Experiencing whale-watching tours from other companies Observation of direct competitors	Observation of direct competitors	Browsing websites of competitors Observation of direct competitors
2. Learning from and openness towards the environment	Observing nature	Observing nature	Observing nature
3. Learning from (multidisciplinary) cooperation	Intensive cooperation with marine biologists (tours, housing, interaction) Cooperation with non-governmental organizations (NGOs) Cooperation in Icelandic networks (Icewhale, The Wild North)	Long-term cooperation with marine biologists (tours) Cooperation with NGOs Cooperation in Icelandic networks (Icewhale, The Wild North)	Starting cooperation with marine biologists (tours) Cooperation in Icelandic networks (Icewhale, The Wild North)
4. Learning from customers	Observation Interaction Feedback Surveys/questionnaires	Observation Interaction Feedback	Observation Interaction Feedback
5. Internal development of competences	Consultancy & environmental labeling agencies: bringing external professional knowledge into the organization to improve management ICT Marketing	ICT	ICT
6. Integration of knowledge in existing knowledge pool	Newsletters and research papers Sharing ideas	Sharing ideas Delegating tasks and responsibilities	Sharing ideas Delegating tasks and responsibilities

	Delegating tasks and responsibilities		
7. Human resources	Sharing tacit knowledge with colleagues Management accessing tacit knowledge	Sharing tacit knowledge with colleagues	Sharing tacit knowledge with colleagues
8. Spreading knowledge among employees	Guiding handbooks Newsletters Informal gatherings	Guiding handbooks Lectures Informal gatherings	Guiding handbooks Informal gatherings
9. Industrial benchmarking	Trying out new ideas	Trying out new ideas	Trying out new ideas

1. Learning from competitors

The empirical tourism studies have shown that competitors are an important source of knowledge for innovation in tourism (Fuglsang, Sundbo & Sørensen, 2011). The studied firms learn about their competitors by browsing websites, observing them or participating in their activities. In particular, companies that serve other destinations can be a source of new ideas and inspiration that have not been introduced in the destination yet, providing opportunities for a firm to differentiate itself from its local competitors. Although browsing websites can be a fast, easy and cheap way to obtain ideas from other companies, it appears that (face-to-face) interaction adds extra value to knowledge acquisition as not only explicit but also tacit knowledge is shared.

> ´´When I am in Boston, I am going to do a tour just to see how they are doing things. I know that they are doing many interesting things, like taking samples out of the sea and letting people see what comes up. And we are thinking about getting headphones, to check if we can hear something from

> the whales. I know they have it in Boston, and I would like to see it for myself" (Managing Director Alpha).

2. Learning from and openness towards the environment

The ability to recognize and absorb knowledge from the environment is referred to as ´openness´. For whale-watching companies, as well as other nature and wildlife based sectors, openness towards the environment refers to the ecological or natural environment that is at the core of the tourism product. For example, understanding weather and climate change and behavior of wildlife is very important to adequately adapt through innovation. New knowledge about the environment is brought into the organization by observation, learning from daily experiences and learning from researchers. The captain of Alpha illustrates this process by explaining how he has learned to find whales:

> ´´How I do it (finding whales), is difficult to say…. You watch the changes in the weather and you just have to experience what is happening in the nature and in the sea. Of course there are annual changes, the spring in the ocean, changes of life, whales, fish, births… and then the different places you go to, based on the experience of the years before" (Captain Alpha).

3. Learning from (multidisciplinary) cooperation

The three companies studied all cooperate with marine biology researchers by offering them places on board their whale-watching vessels. The following quotation illustrates how research knowledge is shared when guides and researchers interact on whale-watching tours.

> ´´The research institute and whale museum send someone with us every day. They are collecting data about where the whales are, the birds, collecting pictures, etc. It is really good to have a researcher on board; they know more

> about whales then I do. There are two people who have taken pictures of whales for a few years now and we can always count on them if we meet a whale and we want to know if it has been seen before in the bay" (Guide 1 Beta).

The marine biologists that are allowed on the whale-watching tours share explicit and tacit knowledge with the guides and other employees during tours and other interactions.

Cooperation with NGOs also brings new knowledge and ideas into the company. Alpha and Beta have established relationships with Greenpeace and the International Fund for Animal Welfare (IFAW). In addition, all three companies are connected to Icelandic nature-based tourism networks such as Ice-Whale (the Icelandic whale watching association) and the Wild North (a non-profit organization dedicated to the development and success of the wildlife and nature tourism industry within the Northern Periphery based on sustainable operations).

4. Learning from customers

Tourism companies learn about customer preferences by following or communicating with them online, face-to-face or via questionnaires. These methods are rather indirect ways of learning from customers, as there is no direct interaction involved. More direct learning occurs through interactions with travel agents, potential customers at travel fairs and customers who are participating in the tourism product (tours). The ideas and requests from customers that arise during tours are often directly communicated to the front stage personnel. For example, when customers request certain services, it can encourage ideas about how to do things differently or it can inspire new products.

> ´´People would come to the ticket office and say they would like to see puffins because they think three hours of whale-watching trip is too long and they just want to see the birds. Then, we started thinking what we could do for the ones who want to go on shorter trips and only see the puffins, and this year we have a puffins-exclusive tour!" (Assistant Manager Gamma).

The guides and other front stage employees act as boundary spanners or knowledge brokers between the firm and its customers and form an important source of knowledge about the wishes, preferences, interests and behavior of the customers. These knowledge brokers become very good at 'reading' people, as one guide explained during an interview. However, the knowledge acquired by the boundary spanners must be passed on to those who can transform and exploit that knowledge (the innovators).

5. The internal development of competences

Competence refers to knowing how to do things and involves tacit knowledge that is gained by experience. One way that the studied firms develop internal competences is with performance and communication courses. The firms ask external professionals to teach their employees how to do things such as, for example, how to improve their guiding. A second method for acquiring competence is to hire ICT companies. These companies provide knowledge about online booking systems and the design and maintenance of websites. Once these technologies are in place, someone within the company becomes responsible for keeping the system up to date and running. ICT knowledge and competence are becoming increasingly important, especially because social media such as Facebook and Twitter have become more prominent in the marketing and communication activities of these tourism firms.

As the only certified whale-watching company, Alpha has developed internal competences with an environmental management and certification program. The environmental program develops technical competences such as the type of paint to use and how to manage waste. However, the program also appears to contribute to organizational and management innovations, such as the introduction of quality and monitoring systems. The following quotation illustrates how management competences have improved since the certification system was put in place.

> ´´As part of the certification, you should have all your documents in place. This has helped to structure and increase our understanding and monitoring of what we are doing" (Manager Director Alpha).

6. The integration of knowledge into the existing knowledge pool

ICT knowledge, and environmental management knowledge in particular, can be a challenge for tourism managers to integrate into the firm´s knowledge base because there is not yet a strong knowledge base and because the knowledge is dispersed. Within tourism firms, there appear to be subcultures regarding the use of IT systems and social media. Managers are often from a different generation than the guides and the ticket-sellers and are at a disadvantage because they did not grow up with social media as the younger employees have. Differences in knowledge and experiences between the younger and older generations within the organization can hinder the integration of knowledge. Including these younger employees in the social media activities of the firm can contribute to the assimilation of this type of knowledge.

It appears that how knowledge is absorbed into the organization also influences its integration. The certifying organization not only shares knowledge about how to do things in a more environmentally friendly manner but also offers the structure and policy to implement their suggestions. Hence, the knowledge that was

acquired from a certification organization comes with authority. This credibility smoothes the assimilation and integration process, especially when there is resistance to this knowledge. For example, the managing director of Alpha felt that the rules and regulations from the certification organization helped them to pressure the captains to change their behavior.

> ´´They don't understand why we are doing this (environmental management) and what for… They think it is bullshit. We are telling them to recycle, and they say that it doesn´t matter because they will mix it all together when they take the garbage anyway…Therefore, it is very nice to have Earth Check. The controller came last year and I knew beforehand what he was going to say….'You have to change this, you cannot use that'…but it is better that somebody else says it. I got it on paper as proof and the day after, everything was fixed. They finally believed it…." (Managing Director Alpha).

The problem of assimilating external knowledge can thus be overcome when authority is attached to the knowledge.

7. Human resources

Front stage employees acquire knowledge in practice and in interactive situations (see the discussion in the previous section). There are two ways to assimilate this tacit and explicit knowledge within the organization: talking about it or observing it. The three studied firms regularly organize internal staff-meetings and workshops to communicate, share experiences and learn. These meetings are a way for managers to overcome some of the disadvantages of not participating in practice. The manager of Beta explains as follows:

> ´´The guides write a blog everyday and pictures are taken from the tours. One of the guides is in charge of the Facebook site, and every second day, there is

> news on Facebook. It takes time. You need to be on it 24/7, and I cannot do it; that's why I delegate it and has to be done like this" (Marketing Manager Beta).

Guides also exchange tacit knowledge by observing their colleagues during practice. For example, the guides observe the searching behavior of the captain to develop their whale-spotting skills. On most tours in the main season, more than one guide is present. The guides listen to each other´s stories and learn new things to tell their customers and new ways to tell it. When asked what can be learned from the other guides, one guide said,

> ´´We (the guides) go on a tour together when there are more than 50 people on the big boat, and then we listen to each other, hear each other's guiding, talking, also share stories – 'what do you say about puffins?'" (Guide Gamma).

8. Spreading knowledge among employees

The knowledge from researchers is spread among the employees when they frequently interact with each other. Researchers and guides cooperate closely during the tours; in the case of Alpha, they even live together in housing provided by the company, so they share a large part of their private life as well. This interaction creates a strong basis for sharing tacit and explicit knowledge and absorbing external, scientific knowledge into the organization. One of the challenges in this process is that the scientists often speak a different (scientific) language than the guides, managers and captains. The scientists are trained in a very specific way, which can sometimes hinder easy communication between the scientists and others in the organization. However, the more interaction and the more practices are shared,

the more the different cultural groups learn to speak and understand each other's languages.

In addition to interacting in practice, the researchers communicate their results and findings with others in the firm via presentations, newsletters and research papers. This knowledge is accessible to others in the organization and can be used, for example, to improve guiding activities.

Whale-watching companies use different tools to spread knowledge among employees. These companies use, for example, guiding handbooks, from which new guides can learn what they should talk about during the tour. This type of explicit knowledge is easy to spread, but it does not cover the tacit knowledge base of the organization. The companies, therefore, have also developed tools to disseminate more tacit knowledge, such as organizing informal gatherings and parties and allowing the new guides to participate in tours a few times to observe the more experienced guides.

For innovation managers, it can be difficult to unlock tacit knowledge, as they often do not participate in practice together and lose the opportunity to share tacit knowledge. One way to overcome this barrier is to stage situations where knowledge can be ´tapped´ in an informal way.

> ´´I decided that I will cook for them (the crew) for 2 weeks, and it is really good because I can see what is going on here; I'm not so often on the boats" (Managing director Alpha).

9. Industrial benchmarking

Industrial benchmarking can be understood as the ability to assimilate basic, key business knowledge from the successful experiences of businesses in the same industry. In the previous section, the methods through which tourism actors acquire

knowledge from competitors and other sources were discussed. To assimilate this knowledge, it must then be applied to the unique situation of the individual firm. Hence, assimilation appears to occur as the ideas that are observed at other businesses are tested.

> ´´When I was in Tenerife on a whale watching tour, they had, like, a cameraman on board all the time, and afterwards you had the ability to buy a DVD of the tour. When I got it, it worked twice and after that I could not use it again, the quality was not very good but it was nice to have the film. We would like to do it here, and we talked to some people last year, but it was too expensive; all the camera people, they are professionals and charge heavily" (Managing Director Alpha).

What works for whale watching companies in other countries might not work in the Nordic context. The idea needs to be adjusted and adapted to the resources and knowledge available in the firm.

Discussion

It has been argued that the transparent character of innovation in tourism is a barrier for innovation processes because the competition can easily copy new, successful ideas (Hjalager, 2002). This argument appears to hold at the destination level; however, the high visibility of investments in innovation can also facilitate the spread of innovation between destinations due to the internet, social media and the mobility of tourism actors. In particular, when tourism actors participate in or observe other companies´ products, it could contribute to new ideas and innovation back at the home destination. This behavior is consistent with the argument of Polanyi (1983) that personal experience evokes a more holistic and multidimensional

learning and tacit knowledge sharing than the cognitive learning from websites and other more explicit examples of knowledge sharing.

ACAP literature has suggested that openness towards the environment contributes to the absorption of knowledge. Although openness, in general, is beneficial for knowledge absorption, learning from nature is especially important for NB-tourism firms to allow them to adapt to changes in the natural environment. The behavior of wildlife changes due to variations in the climate, food supplies and their interaction with the tourism companies. These changes can set a learning process in motion, based on observation and interaction, that brings new knowledge into the organization.

Strong relationships with NGOs, like-minded companies, biologists, etc. in international and national networks appear to be beneficial for innovation. It has been argued that the tourism sector can be hostile to the absorption of knowledge from academic research and the consultancy communities (Cooper, 2006; Hjalager, 2002; Tribe, 1997). This hostility could be explained by the difference between expert and local knowledge. Expert knowledge is more scientific and technical, while local knowledge is practice-based and context specific (Yanow, 2004). These types of knowledge can be difficult to share both within and between the different communities in tourism (Shaw & Williams, 2009; Tribe, 1997; Yanow, 2004). The data from the present study suggest that whale watching tourism firms do have the ability to absorb knowledge for innovation from researchers and consultants. Scientists and tourism practitioners cooperate with each other during the whale watching experience at sea. When united in the same interactions, the differences between expert and local knowledge can be overcome because knowledge sharing is more direct and tacit. This finding is consistent with the concept that organizational

knowledge is knowledge in practice, rather than objectified and commodified knowledge (Yanow, 2004). The important role of interactions and practices between researchers and tourism-practitioners is relevant not only for nature-based tourism but also for other sub-sectors within tourism.

It is important for tourism firms to absorb and use customer knowledge in their innovation processes. This ability was not directly mentioned in the general management literature. However, it appears that customers are an important source of knowledge for tourism firms (Shaw & Williams, 2009). According to the service dominant logic (Vargo & Lusch, 2004), the tourism product is simultaneously produced and consumed and employees share knowledge and interactions with their customers to 'co-produce' whale watching tours. In these moments of value creation, the employees learn and share knowledge with their customers, and these are important contact moments for acquiring knowledge for innovation (Vargo, 2008). The ability to acquire customer knowledge should therefore be considered to be important in the potential ACAP of tourism firms.

The primary challenge in assimilating knowledge is that tacit knowledge is personal and sticky and therefore difficult to incorporate into the existing knowledge pool of organizations. Managers try to access and unlock this tacit knowledge by initiating shared practices and frequent interpersonal interactions between the innovators and the other employees. These interactions are possible because of the small size and family culture that characterize these nature-based tourism firms. The sharing of tacit knowledge is based on trustful relationships that are sustainable and developed over time. These types of relationships appear to thrive well in small peripheral firms because the line between the professional and private roles of the people working for these firms is blurred.

Developing the knowledge of the front-end employees appears to be both a risky and a rewarding investment for the tourism firm. The know-how of these employees is highly visible to the local competition, but simultaneously, the more they know, the more new external knowledge they can bring into the organization. Shaw and Williams have referred to the front-end employees as knowledgeable workers (Shaw & Williams, 2009), which means that these employees are seen by the firm as knowledge assets. In this instance, firms would seek to recruit knowledgeable workers, would motivate them to apply their knowledge via various forms of incentives and would provide opportunities for them to share their knowledge. In other words, firms need to delegate responsibilities to employees to benefit from their tacit and explicit knowledge and skills. Managers can stimulate these opportunities by offering an attractive working environment to keep knowledge in the company. This type of stimulation requires a special set of skills, which Sundbo and Fuglsang (2005) refer to as 'social competence,' that contribute to the success of the innovation processes by managing the existing knowledge and applying new knowledge. This ´social competence´ should be taken into consideration as an important knowledge assimilation capacity for tourism firms. However, to use the employees´ knowledge, the managers must first be able to understand and have access to the tacit and explicit knowledge of their employees. They must be able to spread knowledge in the organization, which depends on the organizational culture for sharing knowledge and ideas freely with colleagues.

Innovations and knowledge from outside of the organization cannot be adopted without adapting them to the unique social, natural and cultural environment of the particular tourism company. This ability has also been referred to as strategic reflexivity (Sundbo & Fuglsang, 2002), where strategy is defined as meaningful

interpretations that require feedback from practice. Tourism actors need to make sense of new knowledge by interpreting it and by establishing feedback loops between strategy and practice (Fuglsang & Eide, 2012).

Conclusions & limitations

Tourism firms have their own specific methods for acquiring and assimilating knowledge for innovation, and tourism managers have developed several techniques for overcoming the challenges in these processes. Social competence appears to be especially important for tourism innovators to both acquire knowledge from interesting sources and to absorb and assimilate it into the organization. This study has shown that although the operationalization of ACAP as developed in the management and innovation studies can be a useful starting point for the study of knowledge processes in tourism, there are also some differences that should be taken into account. Tourism managers could benefit from understanding the potential of the different knowledge acquisition and assimilation techniques and how these techniques could enhance their innovativeness and competitiveness.

Due to the particularities of shared practices in the experience economy, knowledge sharing for innovation is different in tourism than it might be in other sectors. The data were analyzed based on the operationalization of potential absorptive capacity as developed for non-tourism firms. Even if this operationalization is based on a broad range of research, future research on the absorptive capacity of tourism firms could benefit from alternative conceptualizations. There is currently discussion in the tourism innovation research as to whether a convergent or divergent line should be followed (Hjalager, 2010). This study initially followed a convergent approach, but during the data-analysis process, it preserved openness to consider particular tourism issues. This openness

led to a discussion of how the concept of ACAP should be interpreted in the tourism context.

This study focused on the potential of absorptive capacity, and its link with innovativeness and competitiveness is still missing. Future research can provide insight into how the realized absorptive capacity of tourism firms and their innovations are related to the knowledge acquisition and assimilation processes.

Finally, using the case studies of three peripheral Icelandic firms presents limitations in regard to the external validity and generalizability of the study. Further research is required to provide more insight into the role that the absorptive capacity of tourism firms plays in the tourism innovation processes.

Acknowledgements

This article is written as part of the research project Northern InSights (http://www.opplevelserinord.no/), which is partly financed by The Research Council of Norway. I would like to thank associate professor (PhD) Dorthe Eide (Bodø Graduate School of Business at University of Nordland) for her constructive comments and contributions throughout the development of the manuscript.

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