Proceedings of the ENTER annual eTourism conference, Izmir, Türkiye, 17-19 January 2024, which should be cited to refer to this work.

# Hot Topics in Travel Digital Transformation: A Swiss Perspective

Alessandro Inversini[1], Meng-Mei Chen[1], Amélie Keller[1], Roland Schegg[2]

[1] EHL Hospitality Business School, HES-SO, University of Applied Sciences and Arts Western Switzerland, Lausanne, Switzerland.
alessandro.inversini@ehl.ch; maggie.chen-holleran@ehl.ch; amelie.keller@ehl.ch

[2] Institute of Tourism, University of Applied Sciences and Arts Western Switzerland, Sierre, Switzerland. roland.schegg@hevs.ch

**Abstract.** The advance of technologies has profoundly changed customers' expectation and behaviors, as well as companies' business processes and business models. Given the critical importance of digital transformation, surprisingly, there is scarce research documenting and sharing the knowledge, experience, and insights from digital transformation practitioners, especially in the tourism domain. This research aims to understand the perspectives and actions of Swiss tourism stakeholders in pursuing the digital transformation process. The research data was collected through interviews with tourism stakeholders. The interviews were analyzed through both theme identification and human synthesis. The findings are tourism stakeholders conduct digital transformation for better customer experiences, operation efficiency and profitability, and data collection for better management. Digital transformation needs technology as the tool and data as input and output while keeping in mind that all decisions should be customer-centric. The challenges include data ownership, various data formats, data analysis, and data sharing. Yet, stakeholders are optimistic about the future of digital transformation and willing to collaborate. Both technology and the right digital mindset are required to succeed in digital transformation. Technology can be used to save employees from repetitive tasks and focus on human interactions to create customer-centric experiences. Nevertheless, technology should never replace the human aspect of hospitality.

**Keywords:** digital transformation, resilient tourism, Switzerland, human interaction, customer centricity.

## 1 Introduction

The advance of technologies has profoundly changed customers' expectation and behaviors, as well as companies' business processes and business models. Customers are empowered with technologies to search for endless information from a myriad of information sources, compare products and experiences based on other users' experiences

and reviews, and finally purchase from the most familiar or cheapest channel. Companies face the challenges of acquiring and retaining these most informed customers in the history. Furthermore, companies must adopt their business processes and even their value propositions to stay competitive in the market. Hence, leveraging digital transformation to optimize the business process and serving customers better is one of the most critical challenges facing most companies.

Researchers have advocated the importance of digital transformation, identified critical success factors to ensure the success of the transformation, and measured the benefits of digital transformation. On top of this, tourism research has predicted the heavy transformation of travel related organization by adopting real-time consumer intelligence, artificial intelligence, real-time contextualization and personalization and dynamic business analytics [1]. Existing literature, mainly focus on the development and deployment of digital technology in the wider travel field to collect data and optimize back end functions towards enhancing competitive advantage [2]; even if this is an important avenue of research, the human-side of smart destinations and digital transformation should be taken into account [3].

A series of semi-structured interviews have been conducted with 15 practitioners to gain insights on the state-of-the-art of digital transformation processes, especially in the wider tourism domain. Among the other thing, each practitioner was asked to describe and comment a successful case of digital transformation in their practices. The paper documents digital transformation through real cases, providing practitioners' points of view with respect to the pure operational point of view but also from a customer experience perspective.

## 2 Literature Review

### 2.1 Digital transformation

The transformation brought about by digital advancements and the resulting innovation in business models has significantly changed consumer expectations and actions. This has created pressure on traditional companies and caused disruptions across various markets [4]. The digitalization of the customer experience, particularly in the tourism sector, is not only reshaping competition but also altering the influence of different industries and enterprises [1]. The widespread utilization of big data and the emergence of novel digital technologies like artificial intelligence (AI), blockchain, internet-of-things (IoT), and robotics are predicted to have extensive consequences for businesses [5]. While not all of these technologies might meet their expected potential, their collective introduction underscores the necessity for companies to undergo digital transformation.

Consumer behavior is undergoing shifts in response to the digital revolution [4]. Market data demonstrates a move towards online purchases, with digital interactions playing a crucial role in shaping the customer journey and impacting both online and offline sales [6]. New digital (social) tools have enabled consumers to be more

interconnected, knowledgeable, empowered, and engaged [7], empowering consumers to participate in value creation by personalizing products, engaging in last-mile distribution tasks, and aiding other consumers through sharing product reviews [8].

Furthermore, the introduction of the latest digital technologies (such as AI, Blockchain, IoT and Robots) is anticipated to fundamentally transform consumers' expectations [9]. Consequently, the adoption of these technologies could easily become the new standard and challenge traditional business norms.

Firms that fail to adapt to these shifts risk losing appeal with customers and may be replaced by competitors who effectively leverage such technologies. Therefore, firms need to undergo a process of digital transformation. Digital transformation can be described as a company-wide digital shift that leads to the development of new business models [e.g. 10]. The advent of digital transformation brings forward novel business models, introducing fresh business logic to create and capture value [11]. Digital transformation affects the entirety of a company and its operational methods [11], going beyond mere digitalization. It restructures processes to alter a firm's business logic (or its approach to value creation [12]. Furthermore, digital transformation leverages digital technologies to facilitate cross-border interactions with suppliers, customers, and competitors [4]. Consequently, digital technologies can confer a competitive advantage by transforming the organization, either by enhancing established core competences or fostering new ones. Hence, digital transformation is intrinsically tied to strategic modifications in the business model due to the integration of digital technologies [4].

### 2.2 Digital Transformation in Travel

The field of travel and tourism has always been prone to heavy use of digital technologies [13] due to its information-intensive nature; over the years, researchers and practitioners have discussed the impact of digital technology on business models [14] and travel experience [15]. Gretzel et al. (2015) highlighted how the integration of these technologies has led to the creation of more personalized and seamless travel experiences, where travelers can access real-time information, make informed decisions, and engage with travel providers through multiple digital touchpoints [16]. Moreover, the digital landscape has catalyzed the rise of online travel agencies, peer-to-peer accommodation platforms, and other novel business models, altering traditional industry structures and challenging established players [14].

The impact of digital transformation on traveler behaviors and expectations has also garnered significant attention. With the proliferation of social media platforms and user-generated content, travelers are increasingly relying on digital channels to seek inspiration, gather insights, and share their experiences [17]. Additionally, the advent of mobile applications and location-based services has empowered travelers to access on-the-go information, enhance navigation, and engage in location-specific activities [18].

Moreover, the field of travel has been witnessing the rise of multi-sided platforms [19] and the shift towards a travel digital ecosystem (already predicted in 2008 by [20]);

this has not only provided convenience but has also presented challenges related to data privacy, security, and the digital divide [21]. Scholars have emphasized the need for travel organizations to navigate these complexities while harnessing the potential of digital technologies to meet evolving customer demands and maintain competitive relevance.

One other prominent concept that has emerged over the years in the field of tourism is the one of smart destinations [2]; this has emerged as a novel notion in the realm of tourism and urban planning, propelled by the integration of cutting-edge technologies and data-driven strategies [16]. Smart destinations harness extensive data derived from sensors and smartphones to enable technology-mediated value co-creation in real-time [3]. Notably, information and communication technologies continue to generate both fresh opportunities and new challenges for businesses in the tourism sector. Emerging technologies such as real-time consumer intelligence, artificial intelligence, real-time contextualization, personalization, and dynamic business analytics are currently focal points in tourism research, instigating transformative changes within the industry [22].

Destinations are here seen as ecosystems leveraging advanced digital infrastructure, such as the internet-of-things (IoT), artificial intelligence (AI), and data analytics, to enhance the overall tourist experience and optimize the management of resources and services [3]. Researchers emphasize that smart destinations aim to provide travelers with seamless, personalized, and context-aware experiences [2]. Nonetheless, as travel is both 'information intensive' and 'relationship intensive', researchers are also claiming a central role of the 'human factor' within the digital technology landscape [3].

Therefore, moving from this landscape, this research aimed at understanding the most relevant topics in the field of digital transformation in travel. Exploratory in nature, the research will focus on a specific country, Switzerland, and the broader travel field.

# 3 Methodology

## 3.1 Data collection

In order to generate a better understanding of digital transformation happening in the broad Swiss travel field, a series of exploratory interviews have been conducted. The aim of the research was to understand the most relevant topics in the field of digital transformation in travel with a particular focus on the Swiss market.

Through purposeful sampling, 15 interviewees were identified; those belong to (i) tourism technology providers, (ii) DMOs, (iii) trade associations, (iv) consultants, and (v) academics (Table 1). The interviews took place between November 2022 and May 2023. The structured interview was conducted in different languages (German, French, Italian, and English). Interviews were then transcribed and translated into English for analysis purposes. Translation and meaning consistency was ensured by multilingual researchers on the project.

**Table 1. List of interviews**

| ID | Organization Type | Language |
|---|---|---|
| 1 | Digital Technology Solution Provider | English |
| 2 | World Heritage Site Association | French |
| 3 | Destination Marketing and Management Organization | Italian |
| 4 | Digital Technology Solution Provider | German |
| 5 | Digital Technology Solution Provider | French |
| 6 | Research Institution | English |
| 7 | Destination Marketing and Management Organization | French |
| 8 | Research Institution | German |
| 9 | Consultant & Digital Technology Solution Provider | French |
| 10 | Hotel Owner | German |
| 11 | Research Institution | French |
| 12 | Consultant and Research Institution | German |
| 13 | Event Organization | Italian |
| 14 | Research Institution | English |
| 15 | Destination Marketing and Management Organization | German |

### 3.2 Data Analysis

The process of analysis involved two stages.

**[Stage 1] Data exploration and theme identification.** The raw transcribed text collected from interviews was cleaned to allow for uniform processing. The cleaning process involved homogenizing formats (e.g., different capitalizations and inconsistent paragraphing). Unnecessary titles were also removed under the condition that they were not embedded in relevant sections of the text. The output was formatted in sentence case, with one paragraph corresponding to one interview. Interviewee names were also added at the beginning of each paragraph for the analysis software to identify different speakers. Then, the cleaned data were analyzed using Leximancer software (leximancer.com, edition 5). Leximancer [15] is a text-mining software that analyzes text content and presents findings in a bubble map. Leximancer adopts a two-stage approach for semantic extraction and relational extraction, respectively. Leximancer first conducts relative co-occurrence of words, names these first-level findings as *concepts*, then uses these *concepts* to re-classify text again, names these high-level findings as *themes*, and presents *concepts* and *themes* findings in visuals (bubble maps). Leximancer has been widely used in tourism and business research [16; 17]. The default settings of Leximancer were used, except manipulating Concept Seed Editor - merged concepts including customer-customers, guest-guests, hotel-hotels, project-projects, tourism-tourists-tourist, worked-work; Concept Coding Settings - hidden concepts including

able, certain, course, examples, try; Concept Map - % theme size: 35%; and Concept Map - % of Concepts Shown: 100%.

**[Stage 2] Inductive Coding and Synthesis.** Although Leximancer's theme identification reveals the emerging themes, to gain granular insights further, transcripts were also independently analyzed with an inductive coding strategy to identify the key insights. The objective of this inductive coding analysis was to cluster the main categories of interest for digital transformation in Switzerland, thus informing the aim of this research.

## 4 Results and Discussions

### 4.1 Data Exploration: Themes Identification

Figure 1 presents the frequencies of the most popular words, while Figure 2 presents the visualization of Theme Identification from Leximancer. In terms of frequency (Figure 1) 'data' and 'digital' appear on top of the list, while 'information' and 'system' have less frequency. This can be an indication of the data-driven digital transformation that is happening in the travel field.

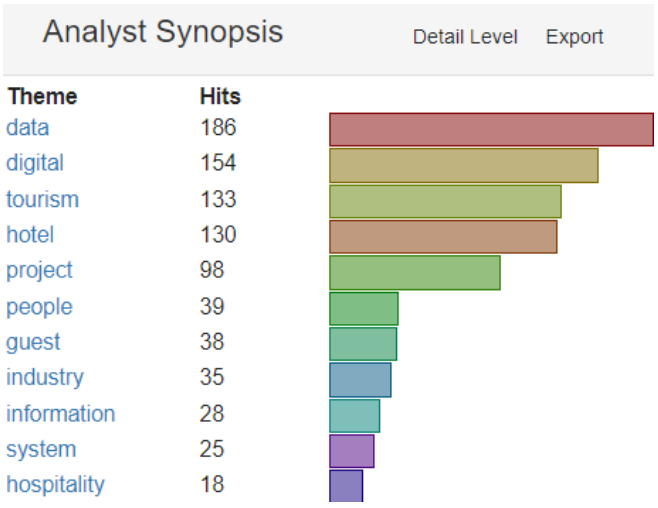


**Fig. 1.** Words Frequency

Looking at Figure 2, the warm color bubbles (orange and yellow) are hot topics, while the cold color bubbles (blue and purple) are less discussed topics. The relative positions of bubbles indicate the relatedness between *themes*. As shown in Figure 1, themes that emerged from the interview transcripts are data, digital, tourism, and hotels. Given that the interviewees speak about how tourism can benefit and be more resilient

thanks to a digital transformation, it makes sense that data, digital, tourism, and hotel are the largest and most important themes. The two themes at the top (industry and hospitality) reflect that the hospitality industry started by doing everything by hand. There was a need for transformation regarding marketing and management (hotel theme), which is heavily linked to data and digitalization.

What seems to be important in this data exploration stage is the nature of the digital transformation happening in travel that is clearly data-driven [5] and project based; it is interesting how both 'people' and 'guest' appear in the external part of the figure but are connected with the 'hotel' and 'digital' respectively; this seems connected with a possibility of working with digital transformation to customer experience [15] also from a host (i.e. people) point of view. Lastly, digital transformation is connected with creativity and understanding of data; it is sustainable "done by the people" with inward and outward looking components [3].

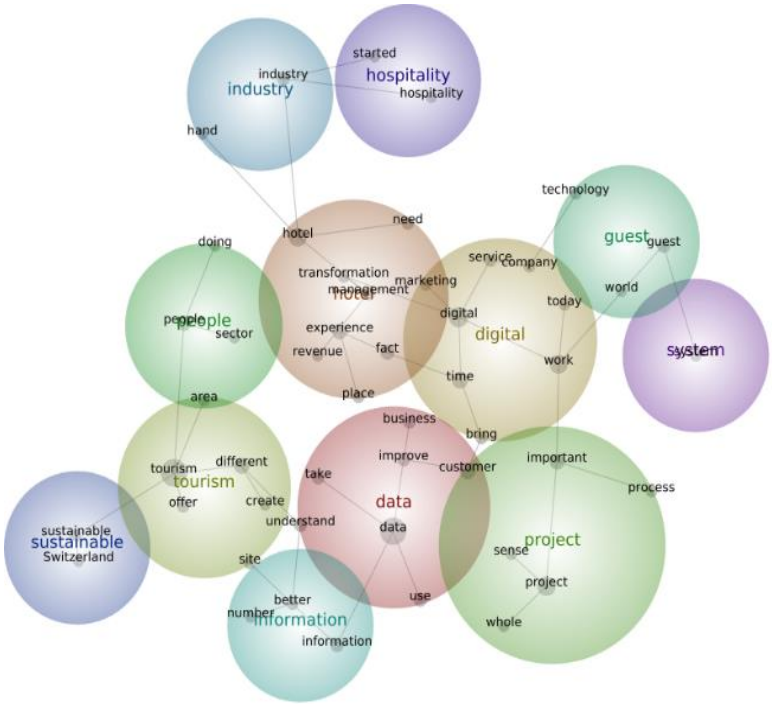


**Fig. 2.** All concepts

Surprisingly enough, in this first data exploration analysis, there are not keyword connected with keywords clusters related concepts such as competitiveness and efficiency [2].

### 4.2 Hot Topics in Travel Digital Transformation

Our inductive coding analysis revealed that digital transformation can be conducted for three distinct purposes: (i) to enhance the guest experience, (ii) to improve efficiency and profitability, and (iii) to collect data for better management. If those are the streamlined themes, there is an emergent topic that is transversal to the whole interviews which can be summarized as (iv) human-centered digital transformation.

**Enhance the guest experience.** As underlined by interviewee 15, digital transformation in travel *"should simplify the internal processes, and increase the guest experience, and always have in mind the tourism stakeholders of the destination. Only in such a trio we can be successful".* This, as maintained by several interviewees, is the essence of travel, as interviewee 7 stated, *"[we should] not forget that tourism is made to travel. It's about having an experience; it's about making people dream. Don't forget to be customer-centric. That's the key in the end, it's to talk to people and make them dream."* Similarly, as put by interviewee 1 *"[in hospitality] we have the passion to deliver the best possible experience for our guests".*

Therefore, maintaining the personal touch while leveraging digital technologies is essential and accelerating digital transformation does not intend to replace this human interaction as interviewee 1 stated: *"Digitalization will not take away the personal touch, [it] will help them [the employees] to make sure that they know what they are doing, but they will still be doing or delivering the human part of it in a more safe or more secure or more convinced way as well, because they know exactly what they are doing and what they are talking about."* This finding affirms researchers suggestion [16] that digital transformation is becoming essential to support the seamless communication of these needs as and the internal exchange of information so that the service provided meets the customers' expectations.

**Improve efficiency and profitability.** The labor shortage chronically confronts the tourism industry. Interviewee 1 talks about this issue: "*Tourism is a sector that is characterized by many small and medium-sized businesses that have many other problems to solve, such as energy shortages and staff shortages".* Interviewee 1 further adds that the travel digital transformation is about understanding *"to what extent we can use digital tools to alleviate this shortage"*.

In addition, digital transformation and technology could provide feasible relief and attract young talents to this industry, as shared by interviewee 1: *"I see again young people being extremely passionate about this hospitality universe that we all live in, and I know for a fact that hospitality is something you do by passion and because you love being there and taking care of people. So, I'm very much looking forward to giving a little bit of help to this industry by digitalizing a bit more and making it interesting also for the younger generations."*

Automating recurrent tasks will help employees use their time more efficiently and improve performance. This will also affect operations as interviewee 9 stated, *"[digital*

*transformation will allow] to take advantage of the number of resources that we are lucky enough to have available in our territories in Switzerland […] to propose high-value-added offers for visitors, which can strengthen the attractiveness of the territory".*

The above opinions are examples of digitalization can change business process and business logic as identified by researchers [10, 11]. However, digital transformation is mostly about optimizing processes to achieve desired outcomes [10, 11, 12]; as stated by interviewee 6, *"it's not really about the technology, it's more about 'what process are you fixing."*

One opinion which emerged frequently is related to the benefits of data: to fully unlock the power of data-driven digital transformation, stakeholders need to break down the boundaries of organizations and share information and knowledge and engage in cross-fertilization. As shared by interviewees 5 and 13: "*I strongly encourage [people] to share this data anonymously of course, but to share this data within a destination, within a group, at least to help each other. That's it, because we all live in the same industry. And if the industry is doing well, we are all doing well."* (interviewee 5).

This collaboration is even more crucial at the present time, "*I find that more and more it will be necessary to collaborate between players, not necessarily from the same sector, but also from complementary sectors. This dialogue can have to do either with know-how, so how we are addressing, for example, ticketing or digital transformation, or trivially, even simply change management within the company. How this can help other industries or other companies that potentially will then find themselves part of the same ecosystem, […] to be more and more competitive together and move into the future?"* (interviewee 13)

**Collecting data for better management.** Often, travel organizations struggle to align the interests of the various stakeholders, leading to unsustainable management and conflicts between parties. As stated by interviewee 2, *"We cannot put in place correct and adapted measures if we do not have a sufficiently precise vision of what is happening in the perimeter."* Therefore, some interviewees mentioned that the knowledge collected from these digital technologies enables better monitoring, management, and coordination among various stakeholders in the tourism industry (interviewees 2, 3 12 and 15).

Data can provide knowledge and information on visitor numbers, behaviors, trends, and many other elements. Having access to extensive knowledge of an organization's operations is essential for smart decision-making and strategic management, considering and involving all stakeholders' interests. Data also allows for elaborate efficient, targeted marketing through creative product offerings or real-time promotion specifically customized for the customer along the journey. In this context, while data serves as an input, technology is the medium that allows the tourism stakeholders to make better decisions and put in place efficient strategies. Interviewee 2 explains: *"once we have a better idea of their behavior and the sources of these people, we may be able to treat*

*or offer qualitative tourist experiences, which will allow us to generate more money in the area and preserve the place better. […].The data is extremely beneficial to bring, to support our arguments and our popularization"*. It's interesting to note the similarity between the interviewees' observations and smart destination discussion, even though interviewees did not mention smart destination [2, 3, 22].

Interviewees nevertheless identified challenges associated with data ownership, comparable to researchers' concern in data security and data privacy [21]. Both interviewees 12 and 7 provided examples of these challenges: *"Tourism needs a great deal in the way of digital tools, apps and websites and so on. But everything is held and managed separately, so to say in the form of silos. So, for every topic, for every organization and for every company there is a nice website, a nice app, whatever makes sense for them. And very often, the data that is needed for this is collected repeatedly. And that, fundamentally, is not very efficient. And it is, above all, not beneficial for the quality of the data that is being collected. You must put a lot of effort into such data collection."* (interviewee 12); this was echoed also by interviewee 7 who maintained: *"There is still some way to go to know our customers better because DMOs […] is an intermediary, so all the transactions are not going through us. So, we still have this difficulty in recovering the data and then consolidating them."* (interview 7)

**Human-centered digital transformation.** What transversely emerged is also a profound understanding of the field of travel and tourism, where the human-to-human interaction is still crucial for the success of the travel businesses. This finding echoes with researchers' advocate that travel is both "information intensive" and "relationship intensive" [3]. As interviewees 1 and 2 maintained, customer experience should be enhanced by digital transformation. Interviewee 14 introduced the topic in this way: *"digital transformation is no longer an option. It is really a necessity - but then it is important to understand that digital transformation should not be just to improve efficiency: in the end, they should focus on catering to customers' experience."*

This becomes really operational in the example of interviewee 1:*"[the technology artifact] will help [staff] to make sure that they know what they're doing, and they will still be doing or delivering the human part of [the experience] it in a more safe or more secure or more convinced way as well."* This point of view is complemented by interviewee 2 who stated: *"we can totally guarantee a human experience that is completed based on data."*

## 5 Conclusions

This research investigates shed light on the hot topics in digital transformation as portrayed by 15 Swiss digital technology experts. There are a few emerging trends to be highlighted.

The nature of digital transformation is directly linked with data. For our experts, it is crucial to access different types of data to create a more precise picture of the travel field at destination and business level. Three emerging trends related to digital transformation, which echoed the literature in the field, are (i) the importance of enhancing guest experience, (ii) the imperative of improving efficiency and profitability, and (iii) the need to collect data for better management. These three main directions are shaping the approach of Swiss travel organizations to digital transformation.

Last but not least, one emerging theme is about the human-centered nature of travel digital transformation: the travel field should not neglect its founding strength that is the one of 'human touch'. Therefore, digital transformation should cater to enhancing human relationships in the wider travel arena. Optimization of profitability and efficiency through data should lead to improved human-centered management and experiences to foster co-creative processes (BOES).

Nevertheless, the tourism sector still faces numerous challenges related to digital transformation, including the complexity of data ownership, the heterogeneity of data formats, the difficulty in data analysis, and the openness and possibility of data sharing. Both technology and the right digital mindset are required to succeed in digital transformation. Yet, Swiss stakeholders are optimistic about the future of digital transformation and willing to collaborate because of the possible mutualization of costs and exchange of data, and to learn from each other.

### 5.1 Limitation and Future Work

This research is exploratory in nature and based on semi-structured interviews to Swiss travel experts. Although it sheds lights on the state of the art of digital transformation in a given country, it comes with structural limitations: (i) the purposeful sample selection does not cater for a proper representation of the industry; rather it mixes the points of view of private and public organizations working in the field of tourism and other actors such as technology providers; (ii) the geographical scope of the research is limited due to the nature of the digital transformation phenomenon. Therefore, future work should focus in minimizing these two limitations by fostering industry representativeness on an international scale.

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