Improving the Orchestration Resilience of a Smart Integrated Tourism Destination – A Case Study in the Swiss Alps

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Summary: Most tourism destinations in Switzerland are fragmented. The result is that actors along the customer's journey intervene in a disordered way. To create a smart integrated tourism destination, we posited that collaboration between these different actors should be trained upstream, in the design process. However, this training requires a laboratory independent of day-to-day business activity and allowing a type of rehearsal by the local stakeholders in the tourism industry. Through a case study based on SWISSPEAK Resorts (SPR), this research article illustrates that merely creating a digital marketplace for tourism is not enough to ensure a truly smart, integrated customer experience. Based on consecutive pre-experiments, we concluded that digital trust was of primary importance for the resilience of a smart integrated tourism destination and that orchestrating and rehearsing it was essential.

Keywords: Tourism, Integrated Destination, Smart Destination, Resilience, Digitalisation, Digital Trust, Pre-experiment

Verbesserung der Resilienz Orchestrierung einer integrierten smarten Tourismusdestination – eine Fallstudie in den Schweizer Alpen

Zusammenfassung: *Die meisten Tourismusdestinationen in der Schweiz sind stark fragmentiert. Das Ergebnis ist, dass die Akteure entlang der Customer Journey wenig koordiniert kooperieren. Um eine intelligente, integrierte Tourismusdestination zu schaffen, postulierten wir, dass die Zusammenarbeit zwischen diesen verschiedenen Akteuren im Vorfeld, d.h. im Designprozess, trainiert werden sollte. Dieses Training erfordert jedoch ein Labor, das vom Tagesgeschäft unabhängig ist und eine Art Probe durch die lokalen Akteure der Tourismusbranche ermöglicht. Die Fallstudie SWISSPEAK Resorts (SPR), welche in diesem Artikel diskutiert wird, zeigt, dass die bloße Schaffung eines digitalen Marktplatzes für den Tourismus nicht ausreicht, um ein wirklich intelligentes, integriertes Kundenerlebnis zu gewährleisten. Basierend auf aufeinander aufbauenden Prä-Experimenten kamen wir zu dem Schluss, dass digitales Vertrauen für die Widerstandsfähigkeit einer intelligenten, integrierten*

Tourismusdestination von größter Bedeutung ist und dass die Orchestrierung und Einübung dieses Vertrauens unerlässlich sind.

Stichwörter: *Tourismus, Integrierte Destination, Smart Destination, Resilienz, Digitalisierung, Digitales Vertrauen, Prä-Experiment*

1 Introduction

Most tourism destinations in the Swiss Alps are fragmented, which results in a great deal of inconsistency in how economic actors intervene along the customer's journey. To orchestrate the customer's entire journey in a more coherent and customer-oriented way and enhance the quality of the services provided, some destinations, mainly in the United States, choose totally integrated management models (*Haugland et al.* 2011). Indeed, one company may own all the services along the customer's journey (e.g. hotels, cable-cars, shops, restaurants and activities). This 'ideal' situation would currently be difficult to achieve in Switzerland, although different models exist to overcome the issue: cooperation can be administered by a destination management organisation (DMO), a single actor can take on leadership, or there can be contractual agreements between partners. Another means of supporting a destination's integration is the creation of a single marketplace where all of its services can be booked or purchased.

With the rise of digitalisation, any destination could also apply smart tourism as its new management model, characterised by the use of technology and data management (*Ivars-Baidal et al.* 2019). Indeed, the trends towards ever-greater use of the internet, smartphones, social media and big data are deeply influencing the tourism industry. Former new players, like Airbnb, Booking.com or Tripadvisor, have disrupted the market and are now unavoidable. Destinations must incorporate these paradigms in their management models. Digitalisation now makes it easier to develop a marketplace—via a website and/or an application—where tourists can find all the information about their destination and buy the products and services provided there by local stakeholders.

Smart integrated tourism destinations combine the smart and integrated management models mentioned above. The resulting combined management model is applied by SWISSPEAK Resorts (SPR), a company operating a chain of holiday residences, the first of which opened in December 2017 in the village of Vercorin, in the Swiss Alps. SPR's business model is based on two income streams: its own apartment rentals and the sale of services provided by local partners, for which it collects a commission on each sale. To support this business model, SPR developed a smartphone application (App). On the App, customers can find information about their destination and buy local services (e.g. ski lessons or local visits) and products (e.g. breakfast or sports equipment). All the partners proposing their services on the App have signed a contract with SPR stipulating the terms of their collaboration.

Through the evaluation of four consecutive pre-experiments, the present case study shows that the digitalisation—like the creation of a digital marketplace—is insufficient to ensure the orchestration resilience of a smart integrated tourism destination. Indeed, the findings illustrated that certain ingredients, such as trust between stakeholders and digital trust in a new information system (App), are crucial. Moreover, to reach its new state (i.e. integration), the tourism destination must orchestrate its resilience.

Section 2 of this paper examines our literature review, section 3 describes the methodology used in our research, section 4 lays out our findings, and we conclude with a discussion of our topic in section 5.

2 Literature review

2.1 Smart integrated tourism destinations

The World Tourism Organization (UNWTO) defines a tourism destination as "a physical space with or without administrative and/or analytical boundaries in which a visitor can spend an overnight"[1]; it defines destination management as "the coordinated management of all the elements that make up a tourism destination (attractions, amenities, access, marketing and pricing)"[2]. Tourism destinations can be considered as complex networks involving many actors working together to deliver different products and services. Even if tourists perceive a destination as one entity, their stay is composed of different products and services delivered by individual actors. The success of all the individual actors depends on their efficient coordination and integration. The destination must be able to co-produce services involving several actors and continuously integrate new resources and skills. By establishing better cooperation and an appropriate coordination of its activities, both the destination and the individual actors will benefit (*Haugland et al.* 2011), and their long-term success will be assured (*Beritelli et al.* 2007; *Pansiri* 2008). Integrating a destination requires the use of many formal and informal processes as well as structures such as networks, partnerships, committees, and other forms of organisation (*Jamal/Jamrozy* 2006). However, the integration of tourism destinations often encounters problems like resource constraints and a lack of common goals and trust (*Saxena/Ilbery* 2008). Smart tourism destination management is a new model characterised by the technology and data management driven by the rise of information and communications technology (*Ivars-Baidal et al.* 2019). Smart integrated tourism destination combines the smart and integrated management models.

A smart integrated tourism destination is a network of tourism stakeholders. It is rather like a living system and, as such, has vulnerabilities and points of fragility. Tourism stakeholder networks are intended to contribute to the invisible production of services which, by definition, are immaterial. They are particularly vulnerable because it is difficult for them to set up measurement tools to evaluate their own actions. One of the most popular methods for diagnosing network fragility is social network analysis (SNA), often using a sociogram as a graphical representation of the social links that exist between a group of individuals. SNA allows a better understanding of group dynamics (*Ferrándiz-Vindel/Jimenez* 2011; *Appleton et al.* 2013), and tourism makes extensive use of it in research to better understand the structure of its networks and identify their weak links (*Shih* 2006). *Scott et al.* (2008) conceptualised the effects of a crisis on a tourism destination system using a sociogram. More recently, SNA has also been used to study aspects of integrated tourism (*Lee et al.* 2013).

Digital trust is an essential ingredient for a smart, integrated tourism destination (*Mazzella et al.* 2016). Indeed, a smart, integrated tourism destination requires its stakeholders to be

1 UNWTO Tourism Definitions, p. 14 https://www.e-unwto.org/doi/book/10.18111/9789284420858.
2 World Tourism Organization (2007), A Practical Guide to Tourism Destination Management, UNWTO, Madrid, p. DOI: https://doi.org/10.18111/9789284412433.

dynamically interconnected through a technological platform as this builds a bond of trust between tourists and destinations (*Buhalis/Amaranggana* 2015). To achieve social acceptance for a smart, integrated tourism destination, it is important to focus on the salient attributes (*Lai et al.* 2014) of its services—a major element of perceived value in the eyes of the consumer. Indeed, a service only acquires value once the client perceives its benefits (*Fragnière et al.* 2012). There are several kinds of benefits—some purely logistical, some are about psychological preference, and some are more social. Even though salient attributes are typically identified using surveys, the initial selection of those attributes is usually based on a discrete choice experiment (DCE) (*Van Rijnsoever et al.* 2015). For instance, selecting the social attribute of *trust* can be done using a discrete choice experiment from both demand-side and supply-side models (*Draganska/Jain* 2006). In our tourism network case study, where the different actors and customers rely heavily on trust, findings in the scientific literature related to the notion of service co-production should also be considered. Indeed, in their seminal paper, *Auh et al.* (2007) showed that services relying heavily on co-production significantly increased customer loyalty and trust.

2.2 Digitalisation of tourism

Digitalisation has had a major impact on tourism. Key major players like Airbnb, Booking.com, Tripadvisor or Google have changed the market. Small and medium-sized enterprises cannot ignore this trend and must adapt their organisation in order to survive (*Tkaczynski et al.* 2009). In tourism destinations, destination management organisations (DMOs) are playing a central role in these changes. As they oversee a destination's promotion, they must provide a marketplace where customers can find all the pertinent information about their stay and buy the different services they need (*Choi et al.* 2007). In this context, smartphones and how tourists use them are of primary importance. *Kang et al.* (2020) found that tourists search for more information before their stay than during it, but that they search for restaurant and activities information more during their stay. Much research has been done on social media. Regarding the use of social media at the destination, *de Lima et al.* (2019) found that tourists use social media to choose a restaurant. *Varkaris/Neuhofer* (2017) illustrated that tourists use them to choose a hotel in which to stay. *Tham et al.* (2020) found that social media's influence on the choice of the destination itself was mostly low. They identified three dimensions of influence: the level of social media engagement, the destination's novelty or familiarity, and the complexity of the planning decisions. *Li et al.* (2018) conducted a comprehensive literature review on the topic of big data and proposed an analytical framework for data sources (users, devices and operations). Research on user-generated content data was the dominant type (47 %), followed by research on device data (36 %) and transaction data (17 %). When the internet of things can be linked to the smart tourism destination management model, mentioned above (*Tripathy et al.* 2018), it provides huge amounts of data.

2.3 The resilience of tourism systems

Masten et al. (1990, 425) defined resilience as "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances". For *Walker et al.* (2004, 2), resilience is "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, iden-

tity, and feedbacks". For tourism systems, resilience is related to the capacity to deal with tensions by maintaining a region's economic stability while ensuring its capacity to innovate and develop (*Nelson et al.* 2007). The four stages of the Resilience Cycle (*Holling* 2001) describe how systems evolve and regain stability: 1) Reorganisation – change after a disturbance event, 2) Exploitation – the creation of new systems, 3) Conservation – the construction of a new stable state and 4) Release – a disturbance event. *Cochrane* (2010) developed the Sphere of Tourism Resilience model which illustrates three elements of a resilient tourism system: 1) awareness of market forces, 2) stakeholder cohesion and associative working and 3) strong and consistent leadership. The resilience of tourism systems is linked to a destination's strategy. *Gretzel/Scarpino* (2018) proposed a five-pillared framework for smart destination resilience and provided "practical insights on how to ensure that smart destination development leads to greater resilience" (p.1). Within the context of integrated destination and disaster management, *Filimonau/Coteau* (2020) found that despite local stakeholders being aware of the potential damage caused by natural disasters, they failed to build their destination's capacity to ensure their organisational resilience. They proposed an action framework to overcome this issue, based on regional collaboration, disaster planning and preparedness, and disaster recovery and resolution. *Reinhold et al.* (2018) highlighted that due to the multiple production or business systems in place, a destination would probably not have a single strategy for all its forms of supply and demand. They suggested that a DMO's role in different destination settings should be to evolve towards hosting the strategic capabilities to create resilience. In this context, resource orchestration (*Sirmon et al.* 2011)—which integrates resource management and asset orchestration—enables the destination to create competitive advantages for itself.

3 Methodology

For our research into orchestration resilience, we chose a case study methodology. According to *Yin* (1981), a case study research strategy can be used for exploratory as well as descriptive or explanatory purposes. As an explanation, a case study can be used to make a causal inference. A single case-study design can be used in a disconfirming role. For *Dooley* (2016, 388), case studies can use qualitative and quantitative data and various data collection processes. "As a strategy, case study research attempts to examine a contemporary phenomenon and the associated contexts that are not clearly evident". A case study is organised as follows: 1) determine a research question, 2) select the case and choose the data collection process, 3) collect the data, 4) analyse the data and 5) write the report.

This case study's research question was: How can the orchestration resilience of a smart, integrated tourism destination be ensured? We formulated the following hypothesis (H1): The creation of a digital marketplace will ensure the orchestration resilience of a smart integrated tourism destination. For this case study's research strategy, the refutation of the null hypothesis (H0) was: The creation of a digital marketplace **does not** ensure the orchestration resilience of a smart integrated tourism destination.

To answer the research question, we used a pre-experiment design to operationalise the hypothesis and collect data. Designing a pre-experiment is a four-step process: 1) hypothesis formulation, i.e. the answer to the stated research question, 2) hypothesis operationalisation, i.e. the simulation of the ecosystem under study, 3) data collection and analysis, and 4) conclusion, i.e. the comparison of the results with the prediction. For this case study research, the pre-experiment used a suitable one-group post-treatment-only de-

sign—"one best used prospectively" (*Thyer* 2012). Customers test the integrated tourism destination (X) and data are collected (O).

$$X - O$$

The operationalisation of the hypothesis—the creation of the laboratory's conditions—requires efforts and coordination; however, these efforts are acceptable to all the smart integrated tourism destination's stakeholders. Indeed, those efforts enable services to be tested, and the results are valuable insights that will improve the overall quality of the customer experience.

For this case study, four pre-experiments were set up to operationalise the research hypothesis and simulate the ecosystem under examination—a smart integrated tourism destination. Pre-experiment design relied on existing testing protocols from various fields, like Human–Computer Interaction, Service Design and Service Operation Management. The four pre-experiments were intuitively arranged from the simple task (App usability test) to full normal operation (first winter season). The whole research study design combined systematic and iterative processes (see *Figure 1*).

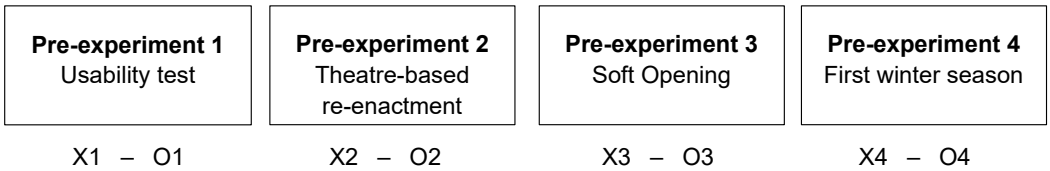

Figure 1: Research design combines systematic and iterative processes between consecutive pre-experiments

3.1 Pre-experiment 1 – App usability tests

App use was simulated as the first pre-experiment. Since this App was specially developed for SPR, two usability tests were organised. During usability tests, researchers observed users completing specific designated tasks (e.g. as the parent of three children, you would like to book a holiday for six people in a Swiss ski resort at Christmas). This dedicated scenario was written to test the processes of checking-in, paying tourist taxes, purchasing an activity and checking-out. Bachelor's degree students in tourism were hired to test the App. To collect data, researchers observed the test, took notes and reported problems according to a usability checklist (*Holzinger* 2005). The pre-experiment was video recorded.

3.2 Pre-experiment 2 – Theatre-based front-desk re-enactment

The second pre-experiment recreated SPR's front-desk using a theatre-based re-enactment. This role-playing technique is also used in medicine (*Evans/Taubert* 2019) and Service Design (*Fragnière et al.* 2012). It is based on the concept of rehearsal, one of the five innovation rules for large, high-risk projects, as described by *Davis et al.* (2017). Actors (tourism students) and service providers (front-desk staff) act out scenarios written for the occasion. Since SPR's staff were totally new, this theatre-based re-enactment also served as a training process for them (e.g. check-in, check-out, giving information about the destination). To collect data, researchers observed the scenes, took notes and reported problems. This pre-experiment was also video recorded.

3.3 Pre-experiment 3 – Soft opening of the smart, integrated tourism destination

The third pre-experiment recreated the customer journey of an SPR guest, that is, all the services provided by all the partners in the smart, integrated tourism destination (*Anderl et al.* 2016). In the tourism sector, especially in hospitality management, companies like hotels and restaurants are used to organising such tests, known as soft openings or soft launches, involving test customers before the arrival of the first paying customers. The goal is to collect test-customer feedback and make final adjustments to provide the best possible experience to paying customers. However, there is little literature on the subject, and this is perhaps due to the desire to keep these procedures and results confidential. Soft openings are similar to the high-fidelity simulations used in the airport (*Zerjav* 2015) and healthcare (*Munangatire/Naidoo* 2017) sectors.

To coordinate all the actors in this third pre-experiment, a service blueprint was developed based on Shostack's model (*Shostack* 1982), which follows the standard customer's journey (i.e. inspiration, booking, preparation, travel, arrival, check-in, stay, check-out, return, sharing). A service blueprint is a tool which helps to analyse service processes and enhance the quality of service (*Li* 2015). Using service blueprints enabled the coordination of all the partners involved in the soft opening and set quality-measurement points. Two weeks before this third pre-experiment, all the local tourism partners were invited to a preparation meeting at which the service blueprint was presented. If a service or a facility was not expected to be available, this was mentioned during this meeting and not tested. For example, SPR's lifts, car parks and its definitive front desk were not functioning during the pre-experiment.

This third pre-experiment was organised in the new SPR holiday residences in the village of Vercorin on 23 and 24 November 2017. The services proposed by SPR (e.g. car parks, a front desk, the apartments themselves, a video gaming room, a wine bar, Wifi) were tested along with local tourism partners (e.g. restaurants, the cable car company, paragliding school, mountain guides, a sports shop and local guide), the destination's infrastructure (e.g. transport, signage, public utilities) and SPR's new information system (i.e. the App). SPR's staff (concierges, housekeepers, and waiters), employees of the integrated tourism destination (a total of 37 people) and 28 proxy customers (bachelor's degree students in tourism) all took part in this pre-experiment. Customers were divided into small groups. In order to test every aspect of the customer journey, each group received a dedicated scenario including all the details of their stay (e.g. means of transport to reach the destination, activities to book and do, dinner and breakfast to order). Most proxy customers had to use the App to book and buy services. Some had to use the telephone or ask questions directly at the front desk. In case they had problems, customers had to get help from SPR staff. To collect data, customers were asked to fill in a form and a survey, and then researchers observed the soft opening, taking notes and reporting issues. In addition, the local television station[3] and the university's communications department ensured media follow-up for this pre-experiment[4].

3 https://canal9.ch/vercorin-inaugure-son-swisspeak-resort-une-centaine-dappartements-4-etoiles-a-louer-des-le-16-decembre/.

4 https://youtu.be/vKz2KYki0Ms.

3.4 Pre-experiment 4 – Opening of the smart integrated tourism destination

The fourth pre-experiment was conducted under real conditions, using SPR customers' experiences during the holiday residences' first winter season (December 2017 to April 2018). Qualitative data were collected through 24 semi-structured interviews, observation and netnography. Two researchers conducted interviews with 22 residence guests and 2 front-desk staff. A sample of customers to interview was selected to represent the guests staying at SPR's residence during this first winter season, mainly families with children. The sample also corresponded to SPR's preferred target group. Customer comments were also collected during check-ins and welcome aperitifs. To complete data collection, a netnography analysis was carried out on booking websites (booking.com and interhome.com) and using customers' comments left on sharing platforms (Google).

4 Findings

The case study's hypothesis—that the creation of a digital marketplace would ensure the orchestration resilience of a smart, integrated tourism destination—was tested, in terms of feasibility, through four consecutive pre-experiments involving customers.

4.1 Pre-experiment 1 – App usability tests

Based on Nielsen's ten usability heuristics, the findings of the two tests concerned usability issues (e.g. how to log into the App, the possibility to choose different credit card types, adjusting date and time formats on two different operating systems). Problems were transmitted to the software engineers and the majority were corrected before the last release: the main issues concerned not understanding how to use the App. During tests, customers were unable to complete the tasks asked of them in the scenario, did not understand why some tasks were mandatory or did not understand the processes for booking an activity.

To ensure orchestration resilience for the smart, integrated tourism destination, the digital marketplace (i.e. the App) must function perfectly and its use must be easily understandable to the user. If this is not the case, tourists will not use the App. Following this first pre-experiment, the null hypothesis (H0) could not be refuted.

4.2 Pre-experiment 2 – Theatre-based front-desk re-enactment

This pre-experiment enabled the front-desk staff to discover that a lot of procedures were missing (e.g. how to book and cancel an activity, what the rules for the games room and spa were). These findings were transmitted to SPR's management and dedicated procedures were written. Other findings were related to the integrated tourism destination itself. Front-desk staff had no precise information regarding the activities that customers might find in the App. This concern indicated that the operationalisation of an integrated tourism destination concept requires much more work than expected, especially when it comes to the details. Indeed, in the end, front-desk employees had a lot of direct contact with customers. They were co-producers in the information process and had a real influence on how customers perceived an integrated tourism destination. Customers also asked what advantages there were to using the App. Indeed, they were aware of some similar business models and would have liked to benefit from their share in the profits. In SPR's vision of an integrated tourism destination, this dimension had not been considered. Indeed, customers had been seen solely as buyers, with no other role.

Again, with regard to this second pre-experiment, the null hypothesis (H0) could not be refuted. Indeed, too many of the necessary ingredients were missing to ensure the orchestration resilience of the smart, integrated tourism destination.

4.3 Pre-experiment 3 – Soft opening of the smart integrated tourism destination

This pre-experiment enabled us to collect 87 sets of customer feedback. Customers appreciated the building, its location close to the cable car, its comfort and its facilities (gaming room and wine bar). They did not appreciate the signage in the village, especially to the SPR residence and the shops; they considered the cable car to be old and unsafe and the access road to be difficult to drive. These customers—the tourism students who took part in the two first pre-experiments—were aware of SPR's project, i.e. the development of an integrated tourism destination and its smart marketplace (the App). They appreciated the concept and its operationalisation through the App. Even though they knew that SPR was an apartment-style holiday residence complex, they complained about the lack of services and equipment (e.g. soap in the bathrooms), comparing it to a hotel.

Once more, the results of the third pre-experiment did not enable us to refute the null hypothesis (H0).

4.4 Pre-experiment 4 – Opening of the smart integrated tourism destination

During the first winter season, a total of 1511 pieces of qualitative data were collected—mainly sentences noted down in customer feedback during semi-structured interviews (77 %) and netnography. The remaining 23 % of comments about stays came from booking websites (booking.com and interhome.ch) and sharing websites (Google). Comments were then classified according to the stages of the customer journey they concerned (see Table 1). Some were unclassifiable (N/A).

Customer Journey Stages	Semi-directive interviews	Netnography	Total	in %
Inspiration	118	8	125	8.34 %
Booking	46	8	54	3.57 %
Preparation	236	0	236	15.62 %
Travel	12	0	12	0.79 %
Arrival at SPR residence	30	2	32	2.12 %
Check-in	51	2	53	3.51 %
Stay	545	260	805	53.28 %
Check-out	25	2	27	1.79 %
Return	8	0	8	0.53 %
Sharing	24	64	88	5.82 %
N/A	70	0	70	4.63 %
Total	**1165**	**346**	**1511**	**100 %**
in %	**77.10 %**	**22.90 %**	**100 %**	

Table 1: Qualitative data collected through semi-structured interviews and netnography during winter 2018–19

Data were coded using thematic analysis and designated as positive, problems, ideas for improvement or unclassifiable (N/A).

Customer Journey Stages	Positive	Problems	Ideas for improvement	N/A	Total	in %
Inspiration	15	1	3	107	126	8.34 %
Booking	5	26	1	22	54	3.57 %
Preparation	7	108	1	120	236	15.62 %
Travel	1	5		6	12	0.79 %
Arrival at SPR residence	4	22	1	5	32	2.12 %
Check-in	5	23		25	53	3.51 %
Stay	295	326	46	138	805	53.28 %
Check-out	3	12		12	27	1.79 %
Return		1		7	8	0.53 %
Sharing	63	5		20	88	5.82 %
N/A	7	26	3	34	70	4.63 %
Total	**405**	**555**	**55**	**496**	**1511**	**100 %**
in%	**26.80 %**	**36.73 %**	**3.64 %**	**32.83 %**	**100 %**	

Table 2: Designation of data collected during winter 2018–19

4.4.1 Inspiration

Inspiration is understood to mean the moment the customer decides to take a vacation. What were their motivations? What was the occasion? This stage also includes the reasons why the customer chose Vercorin and SPR.

Websites, special offers (e.g. 50 % off at Easter), the aesthetics of the building, its proximity to the ski lifts, the large size of the apartments (especially for large families), the holiday residence concept, the desire to go skiing, repeated holidays in the region, recommendations from friends or relatives, a previous stay with SWISSPEAK Resorts or just having a few days off, were all factors that inspired customers. Inspiration also refers to recurrence, i.e. the fact that a guest returns to a SWISSPEAK residence—undeniable proof of the overall quality of the service.

4.4.2 Booking

Booking refers to the process that customers follow to book an apartment with SPR. Were they looking for specific information?

To book an apartment with SPR, guests used websites or called the front desk. Regular users of SPR's booking company partner, even if they do not know Vercorin or SPR, felt safe dealing with it because of its professionalism and efficiency. The availability of the apartments was also attractive. Indeed, some clients wishing to get away for a few days chose SPR because rooms were immediately available. According to many customers,

any mandatory fees should be included in the price of the apartment. Some felt cheated when they had to pay additional fees at check-in. Guests also reported a lack of general information.

4.4.3 Preparation

Preparation refers to the actions that customers carry out after booking their apartment but before their stay. Were they looking for specific information? Did they organise their stay before arrival and how?

Customers who prepared their stay mainly looked for information about apartment layouts and how they are equipped and the activities to do in Vercorin and the ski area. They had to navigate between various websites. In general, the information available before arrival was imprecise and often insufficient. Some guests thus imagined SPR to be a hotel, which led to some frustrations. For ski holidays, customers prepared ski equipment rental, ski passes and ski lessons in advance. As SPR is a holiday residence complex, many people did some grocery shopping before their arrival, either bringing things from home or buying them on the way to Vercorin. The App allowed customers to check-in in advance, which was perceived as advantageous by some (saving time or less waiting on arrival), but others experienced difficulties or felt obliged to do it. Problems mentioned with regards to the App included problems creating accounts (customers did not know which password to use) and misunderstandings about the check-in process, which was not perceived to be intuitive. Many customers did not like the check-in process, especially the obligation to leave one's credit card details.

4.4.4 Travel

Travel refers to the route from the customer's home to the SPR residence.

Customers encountered some problems during their travel: incorrect GPS coordinates for SPR and lack of signage, poor connections between different means of public transport, no means of sending luggage in advance, difficult driving conditions due to traffic jams, weather conditions (e.g. snow) and safety concerns (stones on the road). During this stage, customers were not supported by SPR or the App. A new App update might help, but no specific information or functionalities were added to the first release. Help with travel could represent a real positive point for customers and convince them to use the App.

4.4.5 Arrival

Arrival was understood to be the moment when the customer arrived in Vercorin, at the SPR complex. How did arrivals take place? What difficulties did customers encounter? Were SPR's residences easily identifiable?

Customer arrivals at SPR were sometimes hectic. Although some visitors found the signage for the holiday residence complex good, this was not the case for everyone. Finding the car park entrance was not intuitive; signage was sometimes missing or hidden by the snow; unloading luggage was complicated; and in general, customers thought that there was not enough information.

4.4.6 Check-in

Check-in is an obligatory stage for any tourist in Switzerland. Each tourist is required to identify themself. Furthermore, tourists must pay a tourist tax for each night they spend in the region.

During the check-in at SPR, customers received the keys to their accommodation and were asked to pay the obligatory tourist tax as well as the standard costs associated with the apartment rental. Customers could anticipate this stage and check-in before their arrival using the App. They nevertheless had to go to the reception desk to collect their access cards to their apartment. Mandatory fees could also be paid via the App if customers had checked-in via the App.

Customers sometimes perceived check-in to be too long. Indeed, front-desk staff had to navigate between three different information systems. The mandatory fees also caused some frustration. Customers considered them too expensive and could not understand what they referred to. However, customers did perceive check-in to be a good opportunity to ask for information about parking and unloading, the equipment and services provided by SPR, and breakfast or shop opening hours.

From the check-in stage, SPR is given a face by the front-desk staff—the human part of the service. The opportunity to do a partial check-in via the App was a good way to save some time needed for administrative tasks. Front-desk staff could concentrate on welcoming customers, checking whether they were satisfied and providing them with information on the tourism destination as a whole.

4.4.7 Stay

Stay refers to the customer's overall experience at the SPR complex. What activities did they do? What use was made of the SPR App? What was missing from the stay? What needed to be improved?

Customers spent their holidays mainly skiing; they enjoyed relaxing at the spa, walking in the village, hiking, sledging and visiting the surrounding area. During their stay, customers mainly used the App for information; however, not everyone liked it. Indeed, some did not wish to insert their credit card number. Others preferred to have direct contact with service providers or the front-desk staff. Some customers would have liked the App to have more information about the residences (e.g. spa schedules and rules) and the destination (e.g. ski run map, weather forecast). Customers sometimes had problems understanding the App or making it function. One major problem was that customers were not used to staying in a holiday residence. They felt like they were staying in a hotel and therefore expected hotel services (e.g. room cleaning, a 24-hour reception desk, breakfast included, etc.). Customers also shared their perceptions regarding other services in the integrated tourism destination, like the grocery, restaurants, hiking trails or the ski area.

4.4.8 Check-out

The check-out is used to register a customer's departure from a tourist establishment. In hotels—in contrast to SPR's concept—this is when they pay the fees for their stay.

The check-out could be done via the App, but very few users chose this solution as SPR asked guests to bring a signed "to-do list" with them to the front desk when they left.

Although some perceived this to be a constraint, in general, customers did check out at the front desk. They sought and appreciated direct contact with the visible, human part of SPR—the front desk.

4.4.9 Return

Return is understood as travel from the SPR residence to the customer's home or on to another tourism destination.

In most cases, customers did not plan their return; they enjoyed their stay without thinking about its end. Some planned to leave early in the morning to avoid traffic jams; others liked to enjoy their holiday until the last moment.

4.4.10 Sharing

Sharing is the final stage of the customer journey. It summarises the customer's overall satisfaction with the integrated tourism destination.

Most customers were charmed by the SPR residence and seemed to recommend it. Indeed, most of the comments on booking and sharing platforms were positive. During the interviews, comments were also very positive.

4.4.11 Results of pre-experiment 4

Regarding our research hypothesis—the creation of a digital marketplace ensures the orchestration resilience of a smart, integrated tourism destination—the fourth pre-experiment based on the first winter season gave lots of interesting insights.

Customers seemed to be indifferent about the App, the tangible technological aspect of the smart integration of the tourism destination. During the sharing stage, however, no comments, whether positive or negative, were left on the App. Even if they had used it, the App did not make a big enough difference to the integration of the destination. During their stays, the App was mainly, even solely, used for information purposes. Customers did not perceive the fact that they could purchase services through the App to be a significant benefit. As SPR's business model is partly based on commission from the sales of partners' products and services, this is problematic.

Some missing logistical attributes meant that the total integration of the tourism destination could not be assured. During the booking phase, customers could book their apartment via lots of different platforms not directly linked with SPR. During the preparation phase, customers navigated through many websites to find the right information or book other services and activities. This part of the customer journey was not integrated.

Customer journey stages like arrival, check-in, check-out, travel and return were poorly designed and handled in the App. Arrival was not thought through in terms of a customer experience. During the check-in, the fact that additional fees were not included in the initial bill caused frustration. Since customers were obliged to go to the front desk for the check-out stage, they did not use the App for this. Indeed, because customers engaged in human relations with SPR employees during their stay, they respected the ritual ending of that relationship by saying goodbye personally. Some parts of a customer journey cannot be digitalised. During the travel and return stages, customers are not accompanied by SPR through the App. This illustrates the complexity of fully integrating a tourism destination. Full integration would require each detail and touchpoint of the customer journey to be

considered (e.g. missing signage or snow clearance difficulties). This shows that a tourism destination's strategy must integrate the whole ecosystem, including the most significant public utilities that customers will interact with when they are there. By taking these customer journey stages into account, SPR will be able to integrate the complete customer journey and customers should feel a real difference between SPR destinations and other holiday locations.

As seen in the literature review, whether their tourism destination is digitally integrated or not, customers experience it as a whole and as one point along their customer journey. Despite the concerted efforts made by SPR and its partners, customers did not perceive the digital integration of their tourism destination because some of the elements were missing or poorly designed. So, the results of the fourth pre-experiment could not refute the null hypothesis either. Indeed, despite the development of the App (the tangible technological aspect of the integrated tourism destination) and the integration efforts done by all the partners, customers perceived that some stages of their journey were not integrated.

5 Conclusion

This case study presents the improvement of the orchestration resilience of a smart, integrated tourism destination. To illustrate this concept, the case of SWISSPEAK Resorts (SPR) was presented. SPR's business model is based around the concept of a smart, integrated tourism destination, supported by a smartphone application (App) that it has developed. This App was the tangible technology of a marketplace where all the services provided by the partners in the tourism destination were available. With this App, customers found information about services and could buy or book them.

The concept of an integrated tourism destination transforms the way local stakeholders in the tourism sector interact with customers. Success depends on their capacity to cooperate efficiently and create and offer services and products that meet those customers' needs. Although the concept of integrated tourism destinations has disseminated all over the world, its operationalisation is not well documented in the literature. Digitalisation provides new opportunities to foster the integration of a destination, such as the development of a digital marketplace for local goods and services. The smart integrated tourism destination is set to become a new destination management model.

The sociogram below (Figure 2) represents the effects that smart integration can have on a destination. A stakeholder (digital marketplace, the SPR App) appears and brings new relationships to the system. The orchestration resilience of the smart, integrated tourism destination enables the system to evolve and regain stability (*Holling* 2001).

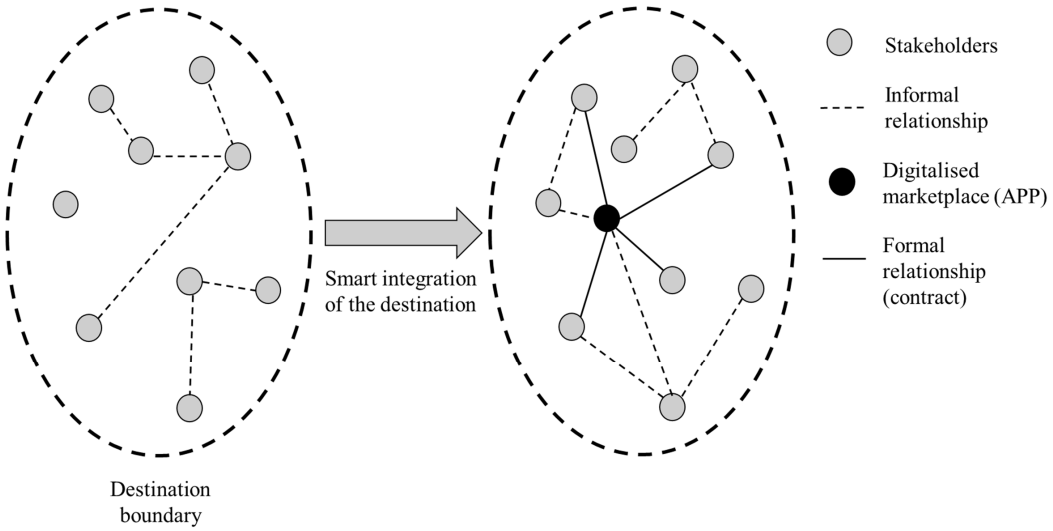

Figure 2: Sociogram representing the effects of smart integration on a tourism destination (adapted from *Scott* 2008)

Four consecutive pre-experiments were used to test our research hypothesis that the creation of a digital marketplace would ensure the orchestration resilience of a smart, integrated tourism destination. Their findings, however, did not confirm our hypothesis. In other words, even though digitalisation (e.g. the creation of a digital marketplace) can support the integration of a tourism destination, it is not sufficient in itself to ensure that the hoped-for smart integration is fully functioning and well perceived by customers. The findings also demonstrated that the contractual agreements signed between SPR and its partners were necessary (*Haugland et al.* 2011) but not sufficient for the success of SPR's business model.

The methodology used for this case study met a fundamental criterion for supporting the resilience of a smart, integrated tourism destination: the preparation for a disturbance (*Luthe/Wyss* 2014). The reasoning behind the consecutive and iterative pre-experiments was rooted in business experimentation for innovation management (*Thomke* 2020). This enables stakeholders to be trained about the process and leads to the progressive establishment of the digital trust that is a missing ingredient of smart integrated tourism destinations (*Saxena/Ilbery* 2008). The four consecutive pre-experiments enabled the smart integrated tourism destination to co-adapt with the location (i.e. the village of Vercorin) and other stakeholders, especially the local people (*Farrell/Twining-Ward* 2005), helping to create new formal and informal processes (*Jamal/Jamrozy* 2006). In other words, they help to co-produce the services of the smart integrated tourism destination and leads to loyalty and trust (*Auh et al.* 2007). As one of SPR's managers testified after the soft opening (third pre-experiment), "*We're already implementing the first of their* [the students] *comments, and that's awesome.* […] *If you're open, well, you can move forward quickly.*"[5]

5 https://canal9.ch/vercorin-inaugure-son-swisspeak-resort-une-centaine-dappartements-4-etoiles-a-louer-des-le-16-decembre/.

Furthermore, SPR's management used the results of the fourth pre-experiment to redesign some of its processes as well as the APP. Finally, as *Reinhold et al.* (2018) suggested, DMOs could become the orchestrators of smart, integrated tourism destination resilience through the organisation of such pre-experiments.

This paper described an original methodological development which aimed, via an innovation-oriented yet human-centred approach, to integrate known experimental techniques to evaluate whether there were improvements in customer perceptions from one pre-experiment to the next. To continue this avenue of research, after having tested, through pre-experiments, the interaction patterns between actors in order to favour the smart integration of a tourism destination in parallel with a digital marketplace (App), we are going to carry out quasi-experiments to measure the impact of the tourism destination's smart integration on actual customers' perceived journey quality.

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