Western Switzerland Ski Resorts Marketing Intelligence Case Study

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Abstract—**This paper presents the results of a longitudinal study of marketing intelligence aimed at tourism stakeholders in the French speaking part of Switzerland. Based on a benchmarking study for the period of 2012-2013, this research aims to provide avenues for development of mobile applications for ski resorts with the goal of retaining customers and building customer loyalty. The first comparison group consisted of 52 regional destinations. The second group was composed of a single foreign operator with transferrable elements. The results of the study provide two main contributions: the identification of an innovative technology in the context of regional tourist attractions as well as a practical illustration of a method of marketing intelligence that can be reproduced in other situations. All the information used in this study comes from open and free sources available from the internet and smartphones.**

Keywords : marketing, marketing intelligence, benchmarking, mobile applications, Swiss French, ski resort destinations

I. INTRODUCTION

In order to raise the level of competitiveness of the ski resorts in the French speaking part of Switzerland (Western Switzerland), our study presents a case of marketing intelligence concerning the use of mobile applications with the goal of retaining customers and building customer loyalty. This longitudinal study was conducted in order to present the evolution between the winter seasons of 2011-2012 and 2012-2013.

Marketing intelligence consists of acquiring and using information about events, trends and relationships in the external environment of an organization. It helps management gain the knowledge necessary to plan future courses of action. [1]

The results of this study (Marketing Intelligence) are intended primarily for Directors of Communication working in tourist destinations in Western Switzerland as well as entrepreneurs with a capacity to adapt to new business opportunities. [2]

The methodological contribution lies in the adaptation of a strategic business benchmarking method to tourism marketing on a regional scale. We will present our research objectives in addition to the methodology used before presenting the main findings of this research. In conclusion, we will present the limitations of this study and propose possibilities for future research.

II. STATE OF THE ART

Our approach consists of two dimensions: comparative analyses of ski resorts and comparative analyses of mobile applications. Previous studies have been made in ski resorts' benchmarking [3] aiming to identify drivers of competitiveness. Other comparative analyses of ski resorts focus on marketing management practices [4], on customer satisfaction [5], on service quality [6], on tourist image [7], on hospitality elements [8] or on economics, infrastructure and frequency indicators [9]. The second dimension about the comparative analysis of mobile applications led us to identify studies about the evaluation of usability, such as [10]. However, no focused study assessing the level and the typology of purposed features of the mobile applications were identified. Moreover, our literature review was not able to highlight any previous study regarding the competitiveness of a group of resorts taken in the field of marketing intelligence.

III. OBJECTIVES

This research is part of a marketing intelligence case study aiming to enhance the competitiveness of tourism operators in Western Switzerland. We will present a method for processing and analyzing marketing intelligence information as well as our main results.

Our study is fundamentally exploratory. Our research question is the following: are there innovative technologies that can be adopted by ski resorts in Western Switzerland?

This case focuses on a comparative analysis of the mobile applications offered by Western Switzerland ski resorts in order to propose possible developments to aid in customer retention and increase customer loyalty.

IV. METHODOLOGY

According to the French Association for Standardization[1], marketing intelligence is used to actively monitor the environment in order to anticipate changes, in an ongoing and largely repetitive way [11]. Marketing intelligence is based on a process for simplifying properties to map the main stages of the activity, the "intelligence cycle" [12].

- *Step 1*: the general direction of the monitoring activity is based on defining the organization's needs at the beginning of the cycle, and evaluating the adequacy of

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[1] Internet access : [http://www.afnor.org/]

the needs according to the responses given at the end of the cycle in the feedback following the dissemination of information to the identified targets;

- *Step 2*: research and information gathering activities are based on a research plan, a predefined plan for collecting the information and the sources of relevant information;

- *Step 3*: the use of information includes verifying, processing, analyzing and synthesizing in order to convert raw data into useful knowledge;

- *Step 4*: interpreting and reporting findings to the relevant recipients, as well as storing the monitoring results, to constitute the memory of the organization.

Benchmarking is a method used in business to analyze key aspects of another entity from which lessons can be learned and implemented depending on capabilities. Benchmarking can be used for nearly anything: an advertising campaign, a product, service, practice, process, strategy so that the element can be compared with the organization conducting the comparison. [13] The main steps of benchmarking in the context of business are:

1. identifying a process that needs improvement,
2. identifying performance measures,
3. assessing the capabilities of our own organization,
4. identifying a benchmarking organization,
5. conducting research on selected organizations,
6. analyzing collected data and preparing an action plan.

As our research does not fit into the context of business, we have adapted the methodology in our case by taking the following steps:

1. identifying an innovative process,
2. assessing the capabilities of our own organization,
3. conducting research on the selected organization,
4. identifying the performance measures,
5. analyzing the collected data and
   preparing an action plan.

The data from the benchmarking was analyzed in terms of visual thinking [14] to promote strategic thinking and highlight the innovative nature of the organization's offers compared to the state of the local offer. Indeed, the principal of visual thinking is based on using simple methods of visualization to solve complex problems.[2]

Identifying the mobile applications proposed by the selected ski resorts was achieved through a review of Apple Store[3] platforms for iPhone apps and Google Play Store[4] for Android apps.

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[2]   Internet access : [http://www.danroam.com/]

[3]   Internet access : [http://store.apple.com/ch-fr]

[4]   Internet access : [https://play.google.com/store]

The development of the comparison grid comes from a compilation of various functions identified through all the applications tested during the period from 27 January 2012 to 10 February 2012.

To achieve the longitudinal study, we completed our first data sample with a second series of data collection conducted between 25 March 2013 and 8 May 2013. This second series of collections led to a modification of the comparison grid established during the first phase of data collection. Furthermore, in order to remove any ambiguity from certain movements identified while collecting the documented information, different interviews were conducted with the providers who developed the applications.

The results were completed by findings from observation and the analysis of supplementary documents to further enrich the conclusions and input for policy makers of the tourist destinations in the region studied.

V.   RESULTS

A.   Identifying an innovative technology

The use of gamification via mobile applications to increase customer retention and loyalty to a ski resort destination was identified as a potentially innovative technology during a conference on the themes of communication and events[5].

A literature search on Google Scholar[6] has determined that gamification can be defined as a strategy to influence and motivate the behavior of any class of people – customers, employees, students, fans, patients, members, etc. The target can be any person that we wish to influence a repetitive, loyal and committed behavior. Experts in gamification such as Jesse Schell, professor of entertainment technology and game design at Entertainment Technology Center (ETC - Entertainment Technology Center) at Carnegie Mellon University (USA) argue that gamification "is capable of revolutionizing every aspect of our lives, from the influence of our habits, to improvements in education." [15] According to Deterning [16] [17] gamification lies in the "use of game design elements in non-play contexts". Specifically, it is rewarding certain behavior by obtaining badges and virtual points, which are rarely attached to real awards.

B.   Comparing the protagonists

This section presents the assessment steps of the capacity of the regional destination groups (2.1) and the research on the comparison organization (2.2).

1.   Assessment of the capacity of the regional destination groups

a) General situation

The group includes 52 regional resort destinations in Switzerland. 50 destinations located in the Western Switzerland and 2 German-speaking destinations located in the Valais. The selected destinations are located mainly in Valais, but also in the cantons of Vaud, Geneva, Neuchâtel and Fribourg (see detailed list in Annex 1).

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[5]   Internet access : [http://www.europecristalfestival.com/fr]

[6]   Internet access : [http://scholar.google.ch/]

This group is located in the Alps, which accounted for 46% of global skier visits in 2012 compared to 23% for America. [18]

For its part, the canton of Valais was composed of 48 ski resorts in 2012 for a total of 2,400 kilometers of ski slopes. According to the Observatory Valais Tourism, this canton captures nearly 30% of the Swiss ski lifts, with attendance approaching 8 to 10 million skier visits per year. [19]

Furthermore, 50% of skier visits in Switzerland were made by Swiss nationals in 2011.[19] When considering mobile solutions, it is clear that 50% of users are then likely to use foreign calling plans. Therefore, the access costs can be a barrier to the adoption of solutions offered by destinations. Solutions distributed through other channels should then be preferred including Bluetooth, RFID chips or NFC. RFID technology is used in particular by the comparison group but has, however, not been evaluated in this study.

b) Mobile application situation

Here we will present the situation identified in the two survey periods: 2012 and 2013.

b.1) Situation in 2012 during the first survey

Of the 52 local destinations analyzed, only 20 of them offered a mobile app for iPhone or Android systems. Among the 50 French speaking resorts, 19 applications were identified, including 15 iPhone apps offered by 12 different destinations.

From all of the applications of the 52 locations, we selected the free applications available for the iPhone in order to analyze the features. In total 17 applications were selected: Torgon CH, Champéry AnniviersSki, Crans-Montana Crans-Montana Tourism MyCMA, Portes du Soleil, Maya-Mont-Noble, Verbier, Verbier Mobile Verbinet, Veysonnaz, Les Diablerets, Valley Joux, Villars-Gryon, Zermatt Matterhorn, Zermatt Mobile.

b.2) Situation in 2013 during the second survey

Over the period of 2012-2013, the structure of our panel changed due to:

- the disappearance of four applications: Champéry, Anniviers Ski, Verbinet and Les Diablerets;

- the appearance of 4 applications : Sierre Anniviers, Nendaz 4 Vallées, Loèche-les-Bains, Les Diablerets - MyCity.

Certain applications replaced already existing applications. This is particularly the case of:

Les Diablerets – MyCity - an application developed by the Les Diablerets Tourism office which appeared during the course of the study, and which replaced by chance the Les Diablerets application which was withdrawn from the market and was developed by the Diableret ski lifts;

- Anniviers Ski, replaced by Sierre Anniviers. The first application in 2011 regrouped the following resorts: Zinal, Grimentz, Vercorin, St. Luc and Chandolin. The new application offers information and features on Zinal, Ayer, Grimentz, St. Jean, Vercorin, St. Luc and Chandolin in addition to Vissoie and Sierre,

Salgesch and surroundings which are not ski resorts but are part of the same economic region and have unified their marketing efforts with all destinations included in this application.

Certain applications made new appearances in our study:

- Loèche-les-Bains developed a new application in July 2012, in the interval between the two tests;

- Nendaz 4 Vallées was recorded in 2012 but was not analyzed due to its non-availability during the period of our investigation.

Some applications have disappeared due to consolidation of information and functionality in other applications such as "network stations" or availability via other applications. These are:

- Champéry is part of the area of the Portes du Soleil, which has an application with functions on the network stations in the area;

- Verbinet was addressed to the resort of Verbier, which has two other applications presented in our panel.

The results of these structural changes to the mobile application offer has no impact on our basis for calculating frequency of appearance of the features because the basis used for 2013 is equivalent to that used in 2012, i.e. 17 applications.

2. Research on the comparison group
a) General Situation

Established in 1997, Vail Resorts is an American group owning and operating six ski resorts throughout Colorado (Vail, Beaver Cree, Breckenridge, Keystone) and the region of Lake Tahoe in California / Nevada (Heavenly, Northstar).

The group had a turnover of $1,167 billion in 2011. Mountain destinations account for 65% of turnover, compared to housing (18%) and real estate (17%).

It should be noted that Vail Resorts own the ski lifts, buildings, luxury accommodations, ski schools and catering establishments. The group also provides procurement services and ski equipment rental [20].

During the 2010/2011 season, the American ski resorts welcomed 61 million skiers from the United States and 80 million from North America. For their part, the Vail Resorts facilities captured 11.5% of their visitors from the United States and 9% from North America. [20]

b) Mobile application situation

We will present the situation identified in the two surveys periods: 2012 and 2013.

b.1) Situation in 2012 during the first survey

From the 2008-2009 winter season, the group launched the operation of the RF technology (RFID) cards for accessing the ski lifts. This technology allows access control without the skiers having to submit their pass (easy scanning process).

The EpicMix mobile application, based on RFID technology to capture user activity (elevations, slopes covered),

was introduced in six resorts in the group during the 2010-2011 season. Different versions of the application were successively introduced in December 2011 (version 2.1 in the Apple Store) and January 2012 (version 2.1.1 on the Android Market).

This particular application allows users to share their experience with friends or family members by sending data or photos on social networks. Badges and points are combined based on user activity in the destination.

b.2) Situation in 2013 during the second survey

Since May 2013, Vail Resort has extended its range of ski packages in Europe through partnerships with Arlberg in Austria and Verbier in Switzerland.

The EpicPass now provides access to destinations across the group as well as a destination for our local panel. We have no information on the use of the EpicMix application in the European destinations. However, this use remains conditional on the sine qua non for the presence of RFID terminals on the slopes.

C. Identification of performance measures

To evaluate the local offer, we developed a grid based on the options offered by the comparison group increased by additional functions provided by all of the applications evaluated. A total of 23 features were identified in the first survey that formed the basis of this categorization.

The subsequent grouping of functions into categories helped to highlight the different types of information available and the interactivity proposed to the user. The 2013 longitudinal study permitted the possibility to highlight three new functions, which are numbered [A-C] in the table below.

TABLE I.   LIST OF SELECTED MOBILE APPLICATION FUNCTIONS

Cat.	Theme	n°	Functions
Local	*Resort*	1	Network station (information)
		2	Weather report
		3	Traffic info
		4	Events
		5	Services: bathrooms, restaurants, ski equipment, etc.
		A	Augmented reality panorama
		B	Commercial video clips
		C	Commercial photography
	Slopes	6	Slope condition
		7	Live webcams and/or regularly updated photos
		8	Map of slopes
		9	Lifts status
		10	Number of lifts
Personal	*GPS*	11	Altitude of user
		12	Slopes covered
		13	Distance from lifts
	Performance	14	Course information
		15	Elevation traveled (Vertical Feet)
		16	Maximum speed reached
		17	Distance traveled
	-	18	Professional photos
Social	-	19	Find friends
		20	Share information on Facebook/Twitter
		21	Share user photos to the Facebook page of the resort
Game	-	22	Badges
		23	Points

D. Results of the analysis of the Western Switzerland resorts' offer

The results of the analysis of functions are presented by category: Local (1) Personal (2) Social (3) and Game (4). The results for each category are presented successively for each survey period: 2012 and 2013. A summary of results for comparing the two periods together is then presented in the form of a graph in the next section.

Generally, the functions offered through the mobile applications tested has increased by more than 30% from 99 functions in 2012 to 133 in 2013, for a total of applications tested which remained stable.

1. Category "Local" functions

The functions of the "Local" category provide information on the general environment of the user and the destination: the number of lifts and their status, map and slope status, location of services (catering, rental, etc.), weather information, etc...

This category consisted of the functions which were most often found in mobile applications of local destinations examined in 2012, thus 76 of the 99 total functions identified. In 2013, we identified three new functions grouped in this category (augmented reality, photography and commercial videos). This category remains the most present in the range of functions of local mobile applications.

2. Category "Personal" functions

The functions of the "Personal" category provide information about location and user activity: distance, speed, distance to lifts, photography service of the user on the slope, etc.

This category consisted of functions that appeared 18 times from the 99 identified functions of the group of local applications in 2012. From our longitudinal study, the functions from the "Personal" category have declined appearing 14 times out of the 133 functions identified.

3. Category "Social" functions

The functions of the "Social" category provide interactivity functions to the user. These include functions related to social networks such as options to meet friends on the slopes or to share information online.

This category consisted of functions that appeared five times out of the 99 identified functions of the group of local applications in 2012. From our longitudinal study, the functions from the "Social" category have decreased due to the structural change of the panel. This decrease in the total

number of occurrences of the function of sharing photos on Facebook is now found in the applications which regrouped several resorts together.

4. Category "Game" Functions

The "Game" category includes gamification functions. No features of this category appeared in the review of applications in the local destinations during the 2012 and 2013 studies.

E. Results of benchmarking and longitudinal analysis

The summary of results is presented in the form of a comparison of the frequency of occurrence of functions in the local application group compared to the functions offered by the comparison group. The frequency was calculated using the following formula: (number of occurrences of the feature) x 100 / (Number of selected applications).

The figure presented in the Annex 2 summarizes the comparison of the offer of the functions proposed by the Western Switzerland applications (curves) and the functions offered by the comparison group (functions in gray). This kind of visualization can identify the differences between the mobile applications proposed by the different groups studied in 2012 (dotted curve) and in 2013 (solid curve). It should be noted that the functions with the white background emerge from local applications and are absent from the comparison group. Apart from the "Local" functions, which are often found in applications in the Western Switzerland, many of the other functions are underrepresented. These differences are therefore potential development opportunities.

VI. CONCLUSIONS

Our research has identified an innovative technology not currently exploited to its fullest potential by the ski resorts in the Western Switzerland. Furthermore, we analyzed the evolution of the penetration of this technology in our region compared to a best practice identified abroad over a period of two consecutive years. Our results show a clear trend for digital artifacts that could improve destination attractivity, tourists' accompaniment and experience. Another deep trend has been identified such as collaboration and information sharing between several close resorts, *i.e.* the development of a unique application for a group of destinations. This paper also presents a method of information processing as a result of practical marketing intelligence that can be reproduced in other case studies.

The major limitations of this research include the following points:

- The amount of information analyzed was limited to free mobile applications;

- The quality of information was limited to public data;

- The mobile operating system used to carry out the collection was iOS4.3.3 (OJ*) on an Apple iPad device.

Finally, the rate of change of the analyzed market and therefore, the speed of expiry of the findings are very high and thus, the results need to be considered carefully. However, the method of marketing intelligence remains transferrable to other

research questions in the context of an organization or a group of regional operators. The basis of the identified functions and the results in 2012 and 2013 may also be used for further analysis of these products in the future to monitor the local offer and its adaptation to the international best practices identified.

Future research may also be done by duplicating the methodology described in other comparison groups. It could include the Compagnie des Alpes, a French company consisting of 41 leisure destinations across Europe (26 sites for winter sports for 56% of turnover in 2011, and 15 parks for 44% of turnover in 2011). Reference publications of the group indicate that it has achieved approximately 8% of turnover from the ski area market in Europe in 2011, with 6% of total skier visits. [21]

Other avenues of research could be considered concerning the real impact on customer loyalty and retention through the use of mobile technologies on the economic activity of ski resort destinations in Western Switzerland.

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Annex 1: Detailed list of regional destinations selected

A. *List of the 50 regional destinations in Western Switzerland (French speaking and bilingual)*

1	Anzère	2	Arolla	3	Bruson
4	Champex-lac	5	Champéry	6	Chandolin
7	Crans-Montana	8	Evolène	9	Grimentz

10	La Fouly	11	La Tzoumaz (Mayens de Riddes)	12	Les Marécottes
13	Liddes-Vichères	14	Morgins	15	Nax
16	Nendaz	17	Ovronnaz	18	St-Luc
19	Super St-Bernard - Bourg St-Pierre	20	Thyon-Région	21	Torgon
22	Verbier	23	Vercorin	24	Veysonnaz
25	Zinal	26	Saillon	27	Le Bouveret
28	Les Diablerets	29	Leysin	30	Les Mosses
31	Les Pléiades	32	Rochers-de-Naye	33	St-Cergue/La Dôle
34	Ste-Croix/Les Rasses	35	Vallée de Joux	36	Villars
37	Lavey	38	La Berra	39	Charmey
40	Lac Noir	41	Moléson	42	Les Paccots
43	Les Buttes/La Robella	44	Les Verrières	45	La Vue des Alpes/ Tete de Ran
46	Les Breleux	47	Les Genevez	48	Les Savagnières/ les Bugnenets
49	Tramelan	50	Loèche-les-bains		

B. *List of the 2 German speacking destinations*

51	Grächen	52	Zermatt

Annex 2: Figure: Benchmarking results and longitudinal analysis