Influence of ICTs on Destination Management

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Academic year: 2015/2016
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List of abbreviations

DMO: Destination Management Organization
DMS: Destination Management System
ICT: Information and Communication Technology
OTA: Online Travel Agency
SMTE: Small and Medium Tourism Enterprises
STE: Small Tourism Enterprises
TIC: Tourist Information Centre
TO: Tour Operator
UGC: User Generated Content
Abstract

Information and Communication Technologies (ICTs) are playing an increasingly important role in tourism market. The objective of this work is investigating the extent to which ICTs influence destination management and the potential they have to determine Destination Management Organization (DMO) and destination success. The literature review provided a theoretical basis on destinations, DMOs, ICTs in tourism market and the concept of destination success. The central part of this work consisted of two main phases. First, an empirical analysis of some best practices in the innovative use of Destination Websites and Destination Cards. Then the application of the knowledge acquired to a real case, “Longobard Ways across Europe” itinerary, through the tourist experience design. The analysis provided insights about both types of ICTs. Regarding Destination Websites, the home pages are used mainly with the objectives of inspiring tourists and/or assisting them in the organization of their trip. In addition, DMS functionalities are still rare in the Destination Websites analysed and even when present their potentialities are often not completely exploited. Destination Cards are a powerful tool for integration among the different stakeholders in a destination, allowing DMOs to give visibility also to STE. Moreover, they are at the forefront of a radical transformation into more advantageous and completely digitalised tools, thanks to the development of virtual tourist cards. The application to the “Longobard Ways across Europe” itinerary shows instead how ICTs could support and add value in every phase of the tourist experience, up to the point that they become the connection element allowing the perception of the itinerary as a single conceptual entity.
Abstract (Italiano)

Il ruolo delle Tecnologie dell’Informazione e della Comunicazione (ICTs) sta acquistando crescente importante nel mercato del turismo. L’obiettivo di questo lavoro è capire fino a che punto le ICTs possano influenzare la gestione di una destinazione e le potenzialità che esse hanno di determinare il successo di una Destination Management Organization (DMO) e della destinazione stessa. L’analisi della letteratura ha fornito una base teorica riguardo al concetto di destinazione, di DMO, alla diffusione e al ruolo delle ICTs nel mercato turistico e al concetto di successo per una destinazione. La parte centrale di questo lavoro è costituita da due fasi principali. Per prima cosa è stata effettuata un’analisi empirica di alcune best practices nell’utilizzo innovativo dei siti web e delle Destination Card. In seguito la conoscenza acquisita è stata applicata ad un caso reale, l’itinerario “Longobard Ways across Europe”, tramite la pianificazione dell’esperienza turistica. L’analisi ha fornito intuizioni per entrambi i tipi di ICTs considerati. Per quanto riguarda i siti web di destinazione, le home page sono usate prevalentemente con gli obiettivi di ispirare il turista e/o di assistere nella pianificazione del suo viaggio. Inoltre, le funzionalità di un DMS sono ancora piuttosto rare nei siti analizzati e anche quando sono presenti le loro potenzialità non sono sfruttate fino in fondo. Le Destination Card sono un potente strumento per l’integrazione dei diversi attori in una destinazione e permettono alle DMOs di dare visibilità anche alle piccole imprese turistiche. Inoltre, grazie all’introduzione delle Tourist Card virtuali, si prospetta per esse una trasformazione radicale in uno strumento ancora più vantaggioso e completamente digitalizzato. L’applicazione all’itinerario “Longobard Ways across Europe” mostra invece come le ICTs possano supportare e aggiungere valore in ogni fase dell’esperienza turistica, tanto che diventano l’elemento di connessione che permette la percezione dell’itinerario come una singola entità concettuale.
EXECUTIVE SUMMARY

Tourism is one of the fastest-growing industries in a great number of countries around the world, and the main source of foreign income for a significant number of developing countries (Cucculelli and Goffi, 2015). The diffusion of Information and Communication Technologies (ICTs) has changed drastically the dynamics existing in tourism business environment. In recent years, ICTs have transformed the nature of travel and tourist experiences (Neuhofer et al. 2015). Recent Internet-based technologies, social networking tools and mobile technologies have allowed businesses and consumers to connect, interact and create experiences to an unprecedented scale (Neuhofer et al. 2015). Particularly enforced by the new collaborative dimensions of technologies, the market place has undergone a shift towards consumers gaining increasing power and control (Alt and Klein, 2011). For industries operating in this sector it has become a central endeavour to exploit the potential of technology and use it for the creation of meaningful tourist experiences (McCabe et al. 2012). Another drastic change happened in tourism networks is due to the fact that ICTs have provided new cooperation relationships among the members of the various tourism distribution channels (Law et al., 2011), leading to increases in competitiveness and business performance (Bernè et al., 2015). This improvement is linked to the fact that a greater intensity of information exchange among enterprises leads to greater efficiency, highlighting also shared interests and common goals, which as a consequence facilitate collaboration (Spralls et al., 2011). Moreover, ICTs have been shown to be determinants of cost advantages and product-service differentiation, and their application in an organization improves coordination and control of activities and allows a more effective decision-making (Porter, 2001) impacting positively on the performance of a company.

It is then evident that tourism destinations, or better Destination Management Organizations (DMOs), cannot ignore these trends, and should be aware of the effects ICTs are having on tourism sector, since their success is strongly linked with ICTs utilization. With the proliferation of destination choices (Buhalis, 2000), DMOs need to find means to differentiate themselves, attract consumers and offer distinct value (Neuhofer et al., 2012). Destinations have to find innovative ways to create desirable experiences for the tourist (Morgan et al., 2009). One critical way to reach this goal is to implement the latest developments made available by ICTs in the area of tourist experience creation (Neuhofer et al., 2012). However, ICTs implementation is not trivial and by itself it does not always improve tourism business or relationship performance (Bernè et al., 2015). In fact, the implementation and management of some form of ICT could not be easy for destinations, because of their sometime low understanding of
related dynamics, of the limited resources they have at disposal, of some of their organizational characteristics or of ICTs insufficiencies (Buhalis and Jun, 2011).

Objective

The objective of this work is to provide some insights about how ICTs influence destination management, how they can contribute to destination and DMO success, which are the most beneficial ICTs to introduce in a destination and how they have to be managed in order to effectively generate benefits for the destination.

Literature review

For reaching this goal, the present work started with a literature review, to improve the understanding of the forces and the actors influencing this field of study. The analysis began with a study about the elements constituting a tourism destination and those making it a smart destination, the reasons of the complexity of this entity and the needs of one of the most demanding customers in the world: the tourist. Then the Destination Management Organization was considered, with its roles, structure and a brief excursus on the situation in Italy. The literature review went on taking into account the impact of Information and Communication Technologies on tourism market with the benefits and challenges they bring with them. Further, six of the most important and influencing application of ICTs to tourism industry where examined and described. The literature analysis concludes with a part exploring in depth the meaning of the word success for a tourism destination, the bond between DMO and destination success and its relationship with ICTs.

Methodology

The methodology selected for this work consists of an empirical analysis followed by the design of the tourist experience in a real case.

Empirical Analysis

First, two types of ICTs application were chosen for a more detailed analysis, because of their relevance and innovativeness for tourism market: Websites (with the eventual DMS functionalities they contained) and destination cards. For each of these two typologies an initial sample of destinations was constituted. From these two samples, by means of a “light” analysis scheme, a final sample composed by the most innovative
destinations for what concerns the specific ICT utilization was extracted. The additional empirical criteria for destination selection were:

- Equal number of Italian and international destinations;
- Equal number of destinations for each typology (cities, regions, countries, itineraries)

The initial sample for destination websites consisted of eighty websites and resulted in a final sample of twenty cases, almost equally distributed according to the criteria. They are reported in the following table.

<table>
<thead>
<tr>
<th>Cities</th>
<th>Regions</th>
<th>Countries</th>
<th>Itineraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florence</td>
<td>Valle d’Aosta</td>
<td>Italy</td>
<td>Via Francigena</td>
</tr>
<tr>
<td>Milan</td>
<td>Trentino</td>
<td>Spain</td>
<td>Walk of Peace</td>
</tr>
<tr>
<td>Turin</td>
<td>Apulia</td>
<td>Slovenia</td>
<td>Inn cycling way</td>
</tr>
<tr>
<td>Valencia</td>
<td>Queensland</td>
<td>Austria</td>
<td>-</td>
</tr>
<tr>
<td>Innsbruck</td>
<td>Tirol</td>
<td>Poland</td>
<td>-</td>
</tr>
<tr>
<td>Brussels</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1. Destinations in the final sample for destination websites empirical analysis.

The initial sample for destination cards consisted instead of sixty-two cards and resulted in a final sample of sixteen destination cards. The typologies are not equally represented in this sample because of the almost complete absence of regional, national and itinerary tourist cards.

<table>
<thead>
<tr>
<th>Cities</th>
<th>Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firenze Card</td>
<td>Barcelona Card</td>
</tr>
<tr>
<td>Venezia Unica City Pass</td>
<td>New York Pass</td>
</tr>
<tr>
<td>Milano Card</td>
<td>Go Card Washington</td>
</tr>
<tr>
<td>Innsbruck card</td>
<td>Singapore Pass</td>
</tr>
<tr>
<td>Brussels card</td>
<td>Oslo Pass</td>
</tr>
<tr>
<td>Ljubljana card</td>
<td>Go Card Los Angeles</td>
</tr>
<tr>
<td>Valencia Tourist card</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2. Destinations in the final sample for destination cards empirical analysis.

Both the final samples were analysed in depth by means of analysis schemes prepared on purpose, which allowed focusing on the most relevant aspects for the present research and conducting the analysis in a standardized way for the different destinations. The next table (Table 3) reports the main aspects taken into account in the two empirical analysis schemes.
<table>
<thead>
<tr>
<th>Destination Website</th>
<th>Destination Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information about destination website</td>
<td>General information about destination card</td>
</tr>
<tr>
<td>Home page</td>
<td>Virtual version</td>
</tr>
<tr>
<td>DMS functionalities</td>
<td>Mobile application</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Need satisfied</td>
</tr>
<tr>
<td>-</td>
<td>Channels</td>
</tr>
</tbody>
</table>

*Table 3. Aspects taken into account for the design of the empirical analysis schemes.*

For every destination card and destination website in the final sample a case study was composed, underlining the most important elements emerged from the analysis. Subsequently, a benchmark table was created, in order to more easily compare the results, and finally figures were created, starting from the data collected, for giving more evidence to the results obtained. A special attention was dedicated to those destinations that introduced DMS functionalities in their website or a virtual version of the card, the most innovative ICTs implementation in this field.

**Tourist experience design**

The final part of this work consisted in the application to a real case of the knowledge acquired during the literature review and through the empirical analysis. The case selected is the itinerary “Longobard Ways across Europe”, a cultural European itinerary, which follows the traces of the Longobard migration over the centuries, from South Sweden to southern Italy. The methodology for this application consisted in the design of a seamless tourist experience for Longobard Ways visitors, through the implementation of ICTs and the application of the concepts of all digital destination and of smart destination. First, the phases of the experience were identified. Then, for each phase, the main activities performed by tourists were listed. The following step was to select the types of ICTs application that should be utilized in each phase. These ICTs were identified basing on best practices or examples found in the literature or in the empirical analysis. Finally, an explanation of the DMO relation or tourist interaction with each type of ICTs in each phase was elaborated, with the aim of clarifying the benefits ICTs could bring to management and success of the Longobard Ways across Europe itinerary.
Results

The results obtained from the empirical analysis and from the tourist experience design are exposed in the following sections.

Empirical Analysis

The analysis provided insights about the two typologies of ICTs considered.

For what concerns destination websites, the main results concern the elements present in the home page and the DMS functionalities

- **Home page elements**: It was possible to notice that the home pages could be divided in two main categories:
  - *Inspirational home pages*: The main aim of this type of home pages is clearly to inspire the visitor and to create in him the desire to visit the destination;
  - *Planning home pages*: These websites have the main aim to help tourists organizing their trip to the destination.

- **DMS functionalities**: The analysis of the final sample allowed underlining the diffusion of DMS functionalities in destination websites. The following histogram (*Figure 1*) shows the percentage of websites of the final sample containing each of the DMS functionalities.

![Percentage of websites providing a specific DMS functionality](image)

*Figure 1. Percentage of destination websites providing a specific DMS functionality. Sample: 20 destination websites.*
From the data emerged, it is possible to conclude that DMS functionalities are still quite rare, at least for the websites inside the final sample. In fact, only the search engine and the transactional dimension are available for more than 50% of the websites.

Regarding destination cards, the empirical analysis provided first an overview of the different characteristics (duration, integration level, technology utilized) of the cards included in the final sample, that was represented through different figures. Then the business model of the cards in the final sample was taken into account, with a particular attention to the actors involved, the needs satisfied and the channels utilized. The actors involved with the percentage of destination cards including them in their offer can be seen in the following graph (Figure 2), with museums and attractions figuring as the most frequently involved.

The need satisfied are for every card analysed “convenience”, “time optimization” and “information about attractions and novelties”, while 44% of the cards provided also an answer to the “personalization” need. The channels through which destination cards are sold are direct offline sale (100% of the cards) and online sale (94% of the cards), with the possibility to pay in cash or by credit card. However only 63% of the cards can be received at home, either by express courier or via e-mail (for virtual tourist cards). After that, the virtual tourist cards present in the final sample were analysed more in detail, since they are the most innovative ICTs application in this field. From the analysis, it was possible to understand...
the advantages and the disadvantages of virtual destination cards, reported in Table 4.

<table>
<thead>
<tr>
<th>Advantages of virtual tourist cards</th>
<th>Disadvantages of virtual tourist cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of waiting times for receiving the card.</td>
<td>Smartphone dysfunctions could create problems for card utilization</td>
</tr>
<tr>
<td>Elimination of shipping costs</td>
<td>The absence of internet connection could make card usage difficult</td>
</tr>
<tr>
<td>Cards can be bought anywhere, with just a smartphone and an internet connection.</td>
<td>The absence of a point of sale is seen as a disservice in case of need for assistance</td>
</tr>
<tr>
<td>They are environmental friendly, eliminating waste materials.</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4. Advantages and disadvantages of virtual tourist cards.

Finally, some general insights emerged during the analysis of the initial and final samples were provided. The most relevant is probably the fact that destination cards can be used as a powerful integration tool, to convey the different destination product and services of a destination into a single and more attractive offer.

**Tourist experience design**

The result consists in a description of ICTs role in the experience and of the way through which every ICTs typology can interact with the tourist during each phase. The first and vital role for ICTs in the Longobard Ways across Europe tourist experience is to act as the connection element, so that the Longobard Ways across Europe Itinerary acquires sense as a whole and is perceived as a single entity in the minds of both visitors and stakeholders. This main role is then declined in many other roles, depending on the ICTs typology and the phase of the experience considered. Figure 3 shows the general scheme of the Longobard ways across Europe tourist experience, in which it can be seen the result of ICTs application to the itinerary.

In the figure it is possible to see the four phases in which the experience was divided. Each of them appears with the three main activities tourists perform and all the ICTs typologies that should be involved for a complete and pleasant offer. For each ICT type, in each phase, a description of the interaction between the DMO or the tourist and the specific technology was provided. Thanks to the experience designed, the tourist creates his own account, enters the cycle and if ICTs are utilized in an optimal way, he could reiterate it many times, visiting an always-new part of the itinerary and bringing benefits to all the cities and regions taking part to it.
Figure 3. The Longobard Ways across Europe tourist experience.
SOMMARIO

Il turismo è una delle industrie che stanno crescendo più rapidamente in un gran numero di nazioni in tutto il mondo, ed è la principale fonte di reddito estero per un numero significativo di paesi in via di sviluppo (Cucculelli e Goffi, 2015). La diffusione delle Tecnologie dell’Informazione e della Comunicazione (ICTs) ha cambiato drasticamente le dinamiche esistenti nel mercato turistico. Negli ultimi anni infatti le ICTs hanno trasformato la natura dei viaggi e dell’esperienza turistica (Neuhofer et al. 2015). Le recenti innovazioni della rete, gli strumenti di social networking e le tecnologie mobili hanno permesso ad aziende e consumatori di connettersi, interagire e co-creare esperienze ad un livello mai raggiunto prima (Neuhofer et al. 2015). Influenzato fortemente dalle nuove possibilità di collaborazione, il mercato turistico ha subito uno spostamento verso i consumatori, il cui potere contrattuale continua a crescere (Alt e Klein, 2011). Per le industrie operanti in questo settore è diventato quindi prioritario sfruttare le potenzialità della tecnologia e utilizzarla per la creazione di esperienze turistiche significative (McCabe et al. 2012). Un altro grande cambiamento avvenuto nel mercato del turismo è dovuto al fatto che le ICTs hanno permesso di stabilire nuovi rapporti di collaborazione tra i membri dei vari canali di distribuzione (Law et al., 2011), causando un aumento della competitività e delle prestazioni economiche (Berne et al., 2015). Questo miglioramento è legato alla maggiore intensità dello scambio di informazioni tra le imprese, che ha come conseguenza una maggiore efficienza, dato che evidenzia gli interessi condivisi e gli obiettivi comuni facilitando quindi la collaborazione (Spralls et al., 2011). Inoltre si è dimostrato che le ICTs sono causa di vantaggi di costo e di differenziazione del prodotto-servizio, che la loro applicazione in un'organizzazione migliora il coordinamento e il controllo delle attività e che essa permette un più efficace il processo decisionale (Porter, 2001), impattando positivamente sulle prestazioni delle aziende.

È quindi evidente che le destinazioni turistiche, o meglio organizzazioni per la gestione di una destinazione (DMO), non possono ignorare queste tendenze e devono essere consapevoli degli effetti che le ICTs stanno avendo sul settore del turismo, dato che il successo di una destinazione appare fortemente legato con il loro utilizzo. Con la proliferazione delle destinazioni verso le quali è possibile viaggiare (Buhalis, 2000), le DMO devono trovare modi per differenziarsi, attrarre i visitatori e offrire loro un valore aggiunto (Neuhofer et al., 2012). Le destinazioni devono quindi trovare modalità innovative per creare esperienze desiderabili per il turista (Morgan et al., 2009). Un metodo fondamentale per raggiungere questo obiettivo è quello di implementare i più recenti sviluppi delle ICTs a disposizione nell’ambito della creazione dell’esperienza turistica (Neuhofer et al., 2012). Tuttavia, ottenere un’ottimale implementazione delle
ICTs non è scontato ed inoltre se è fine a se stessa non sempre migliora il giro d'affari e le performance economiche di una destinazione (Berne et al., 2015). Infatti, l’introduzione e la gestione delle ICTs potrebbe non essere facile per le destinazioni, a causa della loro talvolta scarsa comprensione delle dinamiche correlate, delle risorse limitate che hanno a disposizione, di alcune delle loro caratteristiche organizzative o di insufficienze tecnologiche (Buhalis e Jun, 2011).

**Obiettivo**

L'obiettivo di questo lavoro è quello di fornire alcuni spunti su come le ICTs influenzino la gestione di una destinazione, come possano contribuire al successo di una destinazione e di una DMO, quali siano le ICTs più utili da introdurre in una destinazione e come debbano essere gestite al fine di generare efficacemente benefici per la destinazione.

**Analisi della letteratura**

Per raggiungere questo obiettivo, il presente lavoro è iniziato con una rassegna della letteratura, per incrementare la comprensione delle forze e degli attori che influenzano questo campo di studio. L'analisi è iniziata con uno studio degli elementi costitutivi di una destinazione turistica nonché di quelli che la rendono una Smart Destination, delle ragioni della complessità di questa entità e delle esigenze di uno dei clienti più esigenti al mondo: il turista. In seguito è stata considerata l’Organizzazione per la Gestione di una Destinazione (DMO), con i suoi ruoli, la sua struttura e un breve excursus sulla situazione delle DMO in Italia. L’analisi è poi proseguita considerando l’impatto delle Tecnologie dell’Informazione e della Comunicazione (ICTs) sul mercato turistico con i benefici e le sfide che esse comportano. Inoltre sono state analizzate e descritte in dettaglio sei delle più importanti e influenti applicazioni delle ICTs nell'industria del turismo. L'analisi della letteratura si conclude con una sezione che si propone di chiarificare il significato della parola successo per una destinazione turistica, il legame tra successo di una destinazione e quello di una DMO e la sua correlazione con l’introduzione delle ICTs.
Metodologia

La metodologia utilizzata in questo lavoro consiste in un'analisi empirica seguita dalla progettazione dell'esperienza turistica in un caso reale.

Analisi empirica

In primo luogo sono stati scelti due tipi di ICTs per essere studiati più in dettaglio, a causa della loro rilevanza e dell'innovazione che possono portare nel mercato del turismo: i siti web (con le eventuali funzionalità di un DMS che contengono) e le Destination Card. Per ciascuna di queste due tipologie è stato costituito un campione iniziale di destinazioni. Da questi due campioni è stato estratto un campione finale composto dalle destinazioni più innovative per quanto riguarda l'utilizzo dalla specifica ICT, mediante uno schema di analisi denominato "leggero". Gli addizionali criteri empirici per la selezione delle destinazioni per il campione finale sono stati:

- Uguale numero di destinazioni italiane e internazionali;
- Uguale numero di destinazioni per ogni tipologia (città, regioni, nazioni, itinerari)

Il campione iniziale per i siti web di destinazione, composto da ottanta siti web, ha permesso di individuare un campione finale di venti casi, quasi equamente distribuiti secondo i criteri sopra ripetuti. Essi sono elencati nella tabella seguente.

<table>
<thead>
<tr>
<th>Città</th>
<th>Regioni</th>
<th>Nazioni</th>
<th>Itinerari</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firenze</td>
<td>Valle d'Aosta</td>
<td>Italia</td>
<td>Via Francigena</td>
</tr>
<tr>
<td>Milano</td>
<td>Trentino</td>
<td>Spagna</td>
<td>Sentiero della Pace</td>
</tr>
<tr>
<td>Torino</td>
<td>Puglia</td>
<td>Slovenia</td>
<td>Ciclabile sull’Inn</td>
</tr>
<tr>
<td>Valencia</td>
<td>Queensland</td>
<td>Austria</td>
<td>-</td>
</tr>
<tr>
<td>Innsbruck</td>
<td>Tirolo</td>
<td>Polonia</td>
<td>-</td>
</tr>
<tr>
<td>Bruxelles</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Tabella 5. Destinazioni nel campione finale per l’analisi dei siti di destinazione.

Il campione iniziale per le Destination Card consisteva invece di sessantadue carte e ha portato alla determinazione di un campione finale di sedici Destination Card. In questo campione le tipologie di destinazione non sono equamente rappresentate a causa della quasi totale assenza di Destination Card regionali, nazionali e di itinerario.
Città | Regioni
---|---
Firenze Card | Barcelona Card | Piemonte Card
Venezia Unica City Pass | New York Pass | Cartamuseimarche
Milano Card | Go Card Washington | Trentino welcome card
Innsbruck card | Singapore Pass | -
Brussels card | Oslo Pass | -
Ljubljana card | Go Card Los Angeles | -
Valencia Tourist card | - | -

*Tabella 6. Destinazioni nel campione finale per l’analisi delle destination card.*

Entrambi i campioni finali sono stati analizzati in modo approfondito per mezzo di schemi di analisi predisposti appositamente, che hanno permesso di concentrarsi sugli aspetti più rilevanti per questa ricerca e di condurre l’analisi in modo standardizzato per ciascuna destinazione. La tabella seguente (*Tabella 7*) riporta i principali aspetti presi in considerazione nei due schemi di analisi empirica.

<table>
<thead>
<tr>
<th>Destination Website</th>
<th>Destination Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informazioni generali sul sito di destinazione</td>
<td>Informazioni generali sulla card di destinazione</td>
</tr>
<tr>
<td>Home page</td>
<td>Versione Virtuale</td>
</tr>
<tr>
<td>Funzionalità di un DMS</td>
<td>Mobile application</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Bisogni soddisfatti</td>
</tr>
<tr>
<td>-</td>
<td>Canali</td>
</tr>
</tbody>
</table>

*Tabella 7. Aspetti presi in considerazione per la compilazione degli schemi per l’analisi empirica.*

Per ogni Destination card e sito web di destinazione nei campioni finali è stato poi composto un caso di studio, sottolineando gli elementi più importanti emersi dall’analisi. Successivamente, è stata creata una tabella di riferimento, al fine di confrontare più facilmente i risultati, e infine, a partire dai dati raccolti, sono stati creati alcuni grafici, per dare maggiore evidenza ai risultati ottenuti. Particolare attenzione è stata dedicata a quelle destinazioni che hanno introdotto qualche funzionalità di un DMS nel loro sito web o alle Tourist Card virtuali, l’applicazione più innovativa delle ICTs in questo campo.

**Progettazione dell’esperienza turistica**

La parte finale di questo lavoro si è concretizzata nell’applicazione delle conoscenze acquisite durante la revisione della letteratura e attraverso l’analisi empirica ad un caso reale. Il caso selezionato è l’itinerario
"Longobard Ways across Europe", un itinerario culturale europeo che segue le tracce della migrazione longobarda nel corso dei secoli, dalla Svezia meridionale al sud Italia. La metodologia selezionata per questa applicazione è la progettazione dell’esperienza turistica per i visitatori dell’itinerario longobardo, attraverso l’implementazione delle ICTs e l’applicazione dei concetti di destinazione All Digital e di Smart Destination. In primo luogo sono state identificate le fasi dell’esperienza. Poi, per ciascuna fase, sono state elencate le principali attività svolte dai turisti. Il passo successivo è stato quello di selezionare i tipi di applicazione delle ICTs che devono essere utilizzati in ogni fase. Queste ICTs sono state identificate sulla base delle best practices studiate nell’analisi empirica o durante l’analisi della letteratura. Infine, per ogni fase è stata elaborata una descrizione della relazione tra la DMO e la specifica ICT oppure dell’interazione che il turista può avere con essa, con l’obiettivo di chiarire i benefici che le ICTs possono portare alla gestione e al successo dell’itinerario “Longobard Ways across Europe”.

Risultati

I risultati ottenuti dall’analisi empirica e dalla progettazione dell’esperienza turistica sono esposti nelle seguenti sezioni:

**Analisi empirica**

L’analisi ha fornito varie intuizioni riguardo alle due tipologie di ICTs considerate.

Per quanto riguarda i siti web di destinazione, i risultati principali riguardano gli elementi presenti nella home page e le funzionalità del DMS:

• **Elementi della Home Page**: È stato possibile notare che le home page possono essere suddivise in due categorie principali:

  ▪ *Home page d’ispirazione*: Lo scopo principale di questo tipo di home page è chiaramente quello di ispirare il visitatore e di creare in lui il desiderio di visitare la destinazione;

  ▪ *Home page di pianificazione*: Questi siti hanno lo scopo principale di aiutare i turisti ad organizzare il loro viaggio nella destinazione.

• **Funzionalità di un DMS**: L’analisi del campione finale ha permesso di avere un’idea più precisa della diffusione delle funzionalità di un DMS nei siti web di destinazione. Il grafico seguente (*Figura 4*) mostra la percentuale di siti web del campione finale contenenti ciascuna delle funzionalità di un DMS.
Dai dati emersi, è possibile concludere che le funzionalità del DMS all'interno dei siti sono ancora piuttosto rare, almeno per il campione finale considerato. Infatti, solo il motore di ricerca e la possibilità di transazione sono disponibili in più del 50% dei siti web.

Per quanto riguarda le Destination Card, l'analisi empirica ha fornito in primo luogo una panoramica delle diverse caratteristiche delle card incluse nel campione finale (durata, livello di integrazione, tecnologia utilizzata), che sono state poi rappresentate attraverso svariati grafici. Quindi è stato preso in considerazione il modello di business delle card, con una particolare attenzione per gli attori coinvolti, i bisogni soddisfatti e i canali utilizzati. Gli attori coinvolti con la percentuale di Destination card che li includono nella loro offerta possono essere visti nel grafico seguente (Figura 5), con i musei e le attrazioni che figurano tra gli attori più frequentemente coinvolti.

Figura 4. Percentuale di siti di destinazione che forniscono una specifica funzionalità di un DMS. Campione: 20 siti di destinazione

I bisogni soddisfatti per ogni Destination Card analizzata sono "convenienza", "ottimizzazione dei tempi" e "informazioni sulle attrazioni e sulle novità", mentre solo il 44% delle carte è in grado di fornire una risposta anche al bisogno di "personalizzazione". I canali attraverso i quali le Card sono vendute sono la vendita diretta offline (100% delle carte) e la vendita online (il 94% delle carte), con la possibilità di pagare in contanti o con carta di credito. Tuttavia solo il 63% delle Card può essere ricevuto a casa, a mezzo di corriere espresso o via e-mail (per Tourist Card virtuali). Inoltre, le Tourist Card virtuali presenti nel campione finale sono state analizzate più in dettaglio, dal momento che sono l’applicazione più innovativa delle ICTs in questo campo. Da questa ulteriore analisi, è stato possibile fare chiarezza riguardo ai vantaggi e agli svantaggi delle Tourist Card virtuali, riportati in Tabella 8.

<table>
<thead>
<tr>
<th>Vantaggi delle card virtuali</th>
<th>Svantaggi delle card virtuali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminazione dei tempi di attesa per ricevere la card</td>
<td>Malfunzionamenti dello smartphone possono creare problemi per l’utilizzazione della card</td>
</tr>
<tr>
<td>Eliminazione dei costi di spedizione</td>
<td>L’assenza della connessione potrebbe rendere difficile l’uso della card</td>
</tr>
<tr>
<td>Le card possono essere comprate ovunque, è sufficiente uno smartphone e la connessione a internet</td>
<td>L’assenza di un punto di vendita è visto come un disservizio in caso di bisogno di assistenza</td>
</tr>
<tr>
<td>Sono ecosostenibili, non producono scarti</td>
<td>-</td>
</tr>
</tbody>
</table>

Tabella 8. Vantaggi e svantaggi dell’introduzione di Tourist Card virtuali

Infine sono stati presentati alcuni spunti generali emersi durante l’analisi dei campioni iniziale e finale. Il più rilevante è probabilmente il fatto che le Destination Card possono essere utilizzate come un efficace strumento di integrazione, per convogliare i prodotti e i servizi di una destinazione in un’offerta unica e più conveniente.

Progettazione dell’esperienza turistica
Il risultato consiste in una descrizione del ruolo delle ICTs nell'esperienza turistica e del modo attraverso cui ogni tipologia di ICT può interagire con il turista nelle varie fasi del viaggio. Il primo e fondamentale ruolo delle ICTs nell’esperienza turistica di “Longobard Ways across Europe” è quello di agire da elemento di connessione, in modo che l’itinerario longobardo acquisti senso nel suo complesso e sia percepito come una singola entità nella mente sia dei visitatori che degli attori del mercato turistico. Questo ruolo principale viene poi declinato in molti altri ruoli minori, a seconda della tipologia di ICT e della fase dell'esperienza considerata. La figura seguente (Figura 6) mostra lo schema generale dell’esperienza turistica di “Longobard Ways across Europe”, in cui si può vedere il risultato dell’applicazione delle ICTs all'itinerario.


Nella figura è possibile vedere le quattro fasi in cui l'esperienza è stata divisa. Ognuna di esse compare con le tre attività principali che i turisti svolgono e tutte le tipologie di ICTs che dovrebbero essere coinvolte per fornire un'offerta completa e piacevole. Per ogni tipo di ICT, in ogni fase, è stata fornita una descrizione delle interazioni tra la DMO o il turista e la specifica tecnologia. Grazie all'esperienza progettata, il turista può creare il suo account, entrare nel ciclo rappresentato e, se le ICTs sono utilizzate in modo ottimale, può rivivere l’esperienza più volte, visitando una parte sempre nuova del percorso e portando benefici a tutte le città e le regioni che ne sono parte.
1 LITERATURE REVIEW

1.1 Destination

This section contains an analysis of the concepts and characteristics of destination and of smart destination, their components and the reasons for their complexity. It also provides an excursus of the customer they serve: the tourist.

1.1.1 Definition

Tourism destinations (or simply destinations, since the action of travelling is intrinsic in the word destination) have been defined in many ways, under different perspectives. Here various definitions are proposed, followed by a schematic representation of the variables they take into account. Destinations are traditionally defined as territories, geographical areas, such as a country, an island or town (Davidson and Maitland, 2000), with political and legislative framework for tourism marketing and planning (Pavlíčeka and Alžbeta, 2015). From a geographical point of view, destinations are places with some form of actual or perceived borders, such as physical or market-created boundaries (Kotler et al., 2003) where people decide to travel and to stay for a period of time (Leiper, 1995). Destinations are also referred to as geographical regions understood by visitors as a unique entity where facilities and services are designed to meet the needs of the visitors (Cooper, Fletcher, Gilbert, Shepherd and Wanhill, 1998). A widely accepted (Pavlíčeka and Alžbeta, 2015; Buhalis and Amaranggana, 2013; Van der Zee and Vanneste, 2015) and more complete definition states that destinations are amalgams of tourism products and services, which conjointly provide an integrated experience to tourist consumers and form an entity under the umbrella of a destination (Buhalis, 2000). It is also important to remember, that a destination may not be limited to a single place, but could also expand over geographical borders, becoming a conceptual entity which incorporates several destinations and locations. It could be a specific road or an itinerary for example,
what matters is that it is perceived as a totality by the tourist (Jenkins, 2009). In Figure 7 the main variables used to define a destination in the literature are represented.

Many authors (Bieger, 1996, Flagestad and Hope, 2001; Martini, 2010; Tamma, 2011) state that there are mainly two types of destinations:

- **Corporate destinations**: Places where the tourist product is planned, managed and promoted on the market by a management society, with a logic that is typically market oriented. This player owns or controls the majority of touristic infrastructures. Some examples are touristic villages, resorts, ski paradises...

- **Community destinations**: the territory itself is proposed to the tourism market, offering a system of natural and artificial attractions that together allow the practice of a definite typology of vacation or journey. Resources and activities are shared among different and independent stakeholders, mainly local. The public sector has a vital role in the development of tourism, because it controls natural and artistic resources inside the
destination and is able to fund the development of projects for the preservation and growth of the destination.

### 1.1.1.1 Smart Destination

Tourism is an industry at the forefront of internet use and online transactions (Werthner and Ricci, 2004). Globalisation, the introduction of ICTs in tourism operations and changes in visitors’ needs and attitudes toward the destination have increased the volume of information that destinations have to analyse in order to stay competitive in a continuously changing tourism market (Pavličeka and Alžbeta, 2015). This evolution of tourists’ way of travelling caused the origin of a new type of tourism destination: Smart Tourism Destinations (Buhalis and Amaranggana, 2013).

“The term ‘smart’ represents a marketing word for all things that are embedded or enhanced by technology” (Boes et al. 2015). “Smart’ is often applied as a prefix to indicate special capabilities, intelligence and/or connectivity, as in smart phone or smart card (Gretzel et al., 2015). Debnath et al. (2014) describe the capabilities of a smart system as involving the basic functions of sensing, processing, controlling and communicating and the advanced levels of predicting, healing and preventing.

This term is often used in association with the word “city”. The concept of Smart City is used when technology is embedded within the city (Buhalis and Amaranggana, 2013). Piro et al. (2014) define smart city as ‘an urban environment which, supported by pervasive ICT systems, is able to offer advanced and innovative services to citizens in order to improve the overall quality of their life’. These technologies will synergise with city’s social components in order to improve citizens quality of life, while also improving city services efficiency, such as optimising the use of energy and enabling better traffic monitoring (Vicini et al. 2012). Smart Cities are able to give intelligent response to many kinds of needs, including daily livelihood, city services and commercial activities that happen contemporarily (Su et al. 2011). A successful example of Smart City is Barcelona, Spain. In fact, this city is implementing a great number of smart services, starting from the traditional app for bike hiring, to a great number of almost futuristic applications of ICTs to everyday life. An impressive number of mobile application allows for instance paying parking, receiving personalized tourist suggestions, renting a bike, making online payment and even controlling garden irrigation easily through a smartphone. All these services contribute to build a technological environment that is ready to support both tourists and citizens in their interaction with city infrastructures. Recently, the concept of Smart city widened and the new wording of “Smart Tourism Destinations” emerged (Zhu et al., 2014).
Boes et al. (2015) define Smart Tourism Destinations as “places utilising the available technological tools and techniques to enable demand and supply to co-create value, pleasure, and experiences for the tourist and wealth, profit, and benefits for the organisations and the destination”. Instead, Lopez de Avila (2015) give this definition of smart destinations: ‘an innovative tourism destination, built on an infrastructure of state-of-the-art technology guaranteeing the sustainable development of tourist areas, accessible to everyone, which facilitates the visitor’s interaction with and integration into his or her surroundings, increases the quality of the experience at the destination, and improves residents’ quality of life.’’ Buhalis and Amaranggana (2014) describe the smart tourism destination as requiring stakeholders to be dynamically interconnected through technological platforms to collect, create and exchange information that can be used to enrich tourism experiences in real-time. Finally Gretzel et al. (2015) referred to a Smart Destination as “a tourism system that takes advantage of smart technology in creating, managing and delivering intelligent touristic services/experiences and is characterized by intensive information sharing and value co-creation.”

The common element to every definition of smart destination is the presence of ICTs at the service of tourists and citizens. More in detail, according to Gretzel et al. (2015), these technologies include:

- Mobile and wireless technologies: they play an important role in providing high mobility to tourists.
- Social media: means through which tourists are engaged and highly motivated to produce, share and consume social contents;
- Intelligent systems: to support the complex interactions in a Smart Tourism environment, which surpass human processing capabilities. Werthner (2003) describes “intelligent” tourism system as systems supporting autonomous networked “nodes” with dynamic network configurations in heterogeneous and distributed environments. He further characterizes it as supporting flexible communication, enabling information access anywhere anytime, encompassing entire consumer life cycles and all business phases, and spanning across different businesses and users. Products and services are dynamically assembled by businesses and users alike, creating new markets and value-enhanced experiences. Importantly, an intelligent tourism system is built on trust, scalability, and openness with respect to participants and services;
- Location-based and sensor technology: they provide important data to make these systems context-aware.

Consequently, the basis on which Smart Destination can start to develop is the presence of modern Information and Communication Technologies. Using the modern ICTs intelligent systems are able to autonomously anticipate user needs.
and encompass comprehensive and specific knowledge adaptable to consumer input (Gretzel, 2011). ICTs allow reducing costs, increasing the speed of transactions, providing customization, facilitating innovation, collection and utilization of information and make also possible the development of new business models (Buhalis and Jun 2011). The key of the transformation to Smart Destinations is consequently destination-wide access to real-time information. (Buhalis and Amaranggana, 2014). As the two researchers wrote, this information could be of two types, according to its source:

1. “Information coming from the city resulting from sensors, city elements and Open Data;
2. Information coming from the citizens and visitors as digital footprint from their social media activities.”

Nowadays information is crucial because it allows translating destination smartness into personalization. As Buhalis and Amaranggana (2014) affirmed, “personalisation refers to a state where consumers increasingly expect service that moulds to them”. It allows visitors to perceive the positive feel of being looked after and to receive services according to their preferences. The biggest benefit of personalization for travellers is an increased comfort level in both the emotional and physical sphere (InterContinental Hotels Group 2014).

An interesting classification proposed by Gretzel et al. (2015) describes the actors (both physical and technological) taking part in the life of a Smart Destination. It is reported in the following table.

<table>
<thead>
<tr>
<th>Physical and technological actors taking part in the life of a Smart Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touristic and residential consumers;</td>
</tr>
<tr>
<td>Tourism suppliers,</td>
</tr>
<tr>
<td>Tourism intermediaries (travel operators and travel agents);</td>
</tr>
<tr>
<td>Support services (telecommunications, banking/payment services);</td>
</tr>
<tr>
<td>Platforms and media (Facebook, TripAdvisor, AirBnB, etc.);</td>
</tr>
<tr>
<td>Regulatory bodies and NGOs;</td>
</tr>
<tr>
<td>Transportation carriers;</td>
</tr>
<tr>
<td>Travel technology and data companies (Amadeus, Sabre, etc.);</td>
</tr>
<tr>
<td>Consulting services;</td>
</tr>
<tr>
<td>Touristic and residential infrastructure (pools, parks, museums, etc.);</td>
</tr>
<tr>
<td>Companies usually assigned to other industries (medical services, retailing, etc.)</td>
</tr>
</tbody>
</table>

*Table 9. Physical and technological actors taking part in the life of a Smart Destination (Source: Gretzel et al., 2015)*
This list underlines the complexity of a smart destination and allows imagining the great amount of relationships taking place inside it.

However, it is important to notice that Smart Destination’s diffusion could have also some drawbacks, arising from the pervasive presence of technology and information systems. First, the so-called “technology illiterate” could experience a sense of exclusion because of their inability to use new technologies. This imposes a gradual shift for traditional destinations into Smart Tourism destinations. Moreover, as proposed by Komninos et al. (2013), destinations should also educate their citizens and visitors on how to best use new technologies through advices, brochures and educational methods. Secondly, through intelligent system, Smart Tourism Destinations capture information about users and their activities that could be highly personal, including their actual physical location, which could be considered as potential threat to privacy (Michael et al., 2008 as cited in Vanolo, 2013 and Buhalis and Amaranggana, 2015).

1.1.2 Destination components

As declared by Buhalis and Amaranggana (2014) a successful destination can be classified through the 6A’s model developed by Buhalis (2000):

1) Attractions: they can be natural such as mountains and lakes, artificial such as amusement parks or cultural such as music festivals;
2) Accessibility: it refers to the entire transportation system within the destination;
3) Amenities: all those services facilitating a convenient stay, namely accommodation, gastronomy and leisure activities;
4) Available Packages: service bundles by intermediaries to direct tourists’ attention to certain unique features of a destination;
5) Activities: every activity available inside the destination which could trigger tourists to visit the destination;
6) Ancillary Services are those daily use services, which are not primarily aimed at satisfying tourism needs, such as information centres, banks, postal service and hospitals.

According to Morrison (2013), every destination has four destination product components, that with the right politics can contribute to an improvement of destination attractiveness:
1) Physical products: These include physical items such as attractions, facilities, hotels, transportation and infrastructure.

2) People: locals providing the hospitality resources as the hosts and providers of personal services. Local cultures and lifestyles are also often very appealing to tourists. Community residents should be made aware of the benefits of tourism.

3) Packages: set of packages and programs that can be purchased and used by tourists. They are organized either by themes or route itineraries, and often are based upon industry partnerships. Packages can be purchased through traditional retail channels including at travel agencies, or be bought online.

4) Programs: Events, festivals, and activities arranged or programmed for tourists. Well designed and well-promoted festivals and events draw tourists to destinations, so they share this role with attractions.

Jenkins (2009), starting form the 6 A’s model presented by Buhalis (2000), tried instead to represent the components of a destination by means of a graph, reported in Figure 8.

![Figure 8. Destination components. (Adapted from Jenkins, 2009)](image)

**1.1.3 Destinations complexity**

Destinations in their complexity can be perceived as single, socio-cultural entities, even if composed by a multiplicity of sub products (Jenkins, 2009). Consequently, the tourist system managing the destination can be compared to a company trying to sell its product (the experience at destination) to a certain customer segment (the visitors).
A first factor of complexity in destinations is the great number of actors having part in their life, that, according to Petti (2009), can be divided in three main groups:

- **Public, private or public-private entities (DMOs, Consortia, Associations,..)** having as an objective:
  - The promotion, valorisation, management and integrated development of the tourism product;
  - The assistance and consulting toward the actors operating in tourism market;
  - The support for tourist information and staying.

- **Local tourism and complementary service providers.** They are for instance hotels, restaurants, transportation system providers and all the other actors offering and/or producing a product, a service or an experience that could constitute the interest of a visitor, together with their supply chain. The links connecting these actors are of the utmost importance because they determine the success of the destination as a whole and the level of benefit tourism is able to bring on local economy;

- **Intermediaries (travel agencies and tour operators) both local and international.** They have a great power since they distribute a great part of tourism products. The role they play is in fact the production, organization and sale of single or coordinated and integrated trips directly to tourists or to other enterprises.

Moreover, there are other important factors linked to the nature of tourism environment that make the management of a destination much harder than that of other products and services traditionally provided on the market. These factors are mainly (Petti, 2009):

- The destination is the place where production and consumption happen simultaneously. This requires a delicate balancing between the generation of a demand great enough to cover the production fixed costs and the minimization of the negative impacts generated by the demand fulfilment on the destination, that is the basis for the tourist experience. In fact, every destination has a limit over which the increase in the number of visitors is counterproductive. This is due to the physical and infrastructural capacity of the destination, since destination sustainability depends on the balance between the benefits provided to tourists and the resources required to provide them. The complexity resides in calibrating marketing efforts to stay below this limit, while trying to increase destination capacity;

- The tourism experience in the destination is a composed product and its components are produced by a multitude of different actors. However, tourists are not able to evaluate the single parts of the experience. They
perceive and evaluate it in its totality. This fact generates the need for an high quality level in every single component of tourist experiences;

- The complexity of the tourist experience requires a strong intermediation activity, comprehending also the participation of the tourist itself, to be organized, distributed and consumed. In fact, tourists express their preferences and needs when buying services, establishing a relationship with service providers. However, the choice of the tourist to visit a specific destination and his experience in it are not determined by single destination stakeholders intervention but by a great number of factors that can be influenced by intermediaries (DMOs, Tour Operators, Travel Agencies). Moreover, these intermediaries have to coordinate with both destination stakeholders and tourists, trying to understand their needs and to co-create the experience with them.

In addition, even Buhalis (2003) agrees on the necessity of an interests’ alignment of destinations stakeholders for providing a pleasant tourism experience.

1.1.4 Evolution of tourist needs over time

When analysing destinations, it is important to explore the motivations underlying the needs in tourism market, because knowing what tourists look for while visiting a destination is the key to meet their expectations. Moreover, meeting their expectations accurately will guarantee destination success.

In the last decades factors like the lower transportation costs, globalization, the increase in the prosperity of the middle class and the creation of “all inclusive” holidays generated an explosion in tourism flows all over the world (Petti, 2009). However, nowadays a further change is taking place, caused also by the transition from a manufactory and industrial economy to a post-industrial one, based more on services: the transformation of mass tourism in experience tourism. Nowadays tourists want to get a closer look to the real world, through a search for authenticity, the reconciliation with the past and the remarking of their own identity, through personal paths (Petti, 2009). The main characteristics of the new type of tourist are the following:

- Expertize: he travels frequently and is consequently attentive to the quality of tourism experiences, always ready to compare and judge them critically;
- Searching for a complex offer: he looks for an experience allowing him to taste all the environmental and cultural aspects of a destination, being immersed in its economic and social context;
- Ready for a real contact: he is more independent, opened and curious, longing for a contact with the “real life” at destination.
Ejarque (2013) proposed instead a classification of the evolution of tourists’ needs over time. Even if it cannot describe any destination evolution, it provides an interesting approximation of the general evolution of tourism demand in the last 50 years.

In the years ranging from 1970 to 2000 the main reason why tourists decided to embark on a trip was to see something. The resource was the key element to generate visitors’ request. As time went on, during the first decade of the 21st century, a shift happened inside tourism request, so that seeing was no more enough, while doing earned importance: tourism became active. Nowadays, from about 2010 on, a drastic change in tourists’ expectations has occurred. In fact, feelings and relationships have become the core of tourists’ request to destinations. The products, services and resources a destination has at its disposal must be translated into personalized and frictionless experiences, allowing tourists to establish a relationship with the destination and with friends and relatives back at home.

Ejarque (2013) proposed instead an interesting idea according to which nowadays the phases of the trip are no more three (Pre-trip, During the trip, Post-trip) but five. This transformation was caused by the increasingly pervasive roles of ICTs (web2.0, social media, etc.) in tourism market. The five phases proposed by the author are based on the analysis of the activities of the so called “social tourist”, term identifying the tourist of today:

1. Dreaming: before the trip, the tourist surfs the web looking for inspiration. He looks for information, compares offers and asks for advice. 65% of tourists starts their online search before having decided the destination. (Google and Ipsos MediaCT, 2014). 74% of tourists uses internet in this phase (Osservatorio Innovazione Digitale nel Turismo, 2015);

2. Planning: Tourists are influenced by their community in their choice, but also by the perceived quality-price ratio (Google and Ipsos MediaCT, 2014). 88% of them uses internet for gathering information (Osservatorio Innovazione Digitale nel Turismo, 2015);

3. Booking: tourists trust more other tourists’ reviews than advertising. 81% of tourists thinks that travel reviews are important and 49% do not buy services without reviews (TEXT100 digital index, 2014). Generally tourists plan the tour themselves if it lasts less than 5 days, while for longer trips they ask to tour operators or travel agencies. Before leaving 78% of tourists booked at least one main service online, dedicating to this phase the impressive time of 7 hours on average (Osservatorio Innovazione Digitale nel Turismo, 2015);

4. Living: Tourists share their holiday in real time. They heavily use their smartphones, downloading tourist apps and sharing contents. 72% of tourists taking picture at destination immediately share them on social
media. 70% update their Facebook profile constantly during the trip (TEXT100 digital index, 2014). A new trend that recently developed is in destination booking: 44% of tourists buy at least an additional service online during their holiday (Osservatorio Innovazione Digitale nel Turismo, 2015);

5. Sharing: Once back home or sometimes also during their holiday, tourists share their travel experience online through reviews, feedbacks, comments, pictures and videos. 45% of them share contents on social media and 38% writes a review online (Osservatorio Innovazione Digitale nel Turismo, 2015).

It is interesting to notice that in this classification the Pre-trip phase that was further divided into three different phases (dreaming, planning, booking), in which tourists are the undisputed protagonists of the scene. Moreover, ICTs are central in every phase, since they are at the core of all the main activities tourists perform, while at destination they even become their bond with friends and relatives at home. Consequently, modern technologies are strictly linked with the offer of a successful tourism experience.

The facts described above, along with the lower average age of travellers, the higher instruction degree and the generally higher amount of money invested in the travelling activities, strongly influence the buying behaviour in tourism system. The new tendency generated by the rapid diffusion of ICTs in this market, is the more frequent booking of short trips, in which tourists make an intensive use of the internet to inform themselves, book services and search for a personalization of the experience (Petti, 2009). The final consideration of the tourism and travel study 2014 is that today in tourism market consumers are making travel decisions by simultaneously assessing information from an unprecedented variety of channels both digital and non-digital (TEXT100 digital index, 2014).

Moreover, the modern tourist is characterized by a low degree of predictability and the prediction of its behaviour gets harder and harder. Consequently, it is increasingly difficult to apply the traditional segmentation techniques and to forecast what tourists’ needs during a specific trip will be like.

This differentiation in tourism was possible thanks to the rapid diffusion of ICTs in this market. Tourists expectations toward the services provided by a destination have evolved rapidly as well. Therefore, the professional utilization of ICTs is becoming increasingly vital in the tourism market. The importance is so high that ICTs insufficiencies can provide potential barriers, limiting the creation and enhancement of tourist experiences (Neuhofer et al., 2015). This issue will be better analysed in section 1.3.
1.2 DMO – Destination Management Organization

This section aims at clarifying the concept of Destination Management Organization, exploring its structure, its objectives, the activities performed to reach them and its roles in the different phases of the trip.

1.2.1 Definition, aim and classification

The destination management (or marketing) organizations (referred to as DMOs) are the organizations responsible for the planning, management and marketing of the overall tourism industry in a destination (UNWTO, 2004). This is the most diffused and widely accepted (Presenza et al., 2005; Marchioro, 2013; Bertero, 2014) definition of DMOs.

Their objective consists in developing a quality image, providing information to visitors, and coordinating stakeholders’ interest (Buhalis, 2003), with the final aim of generating tourist visits to the destination (Gretzel et al., 2006). Pike (2008) summarizes the objective of a DMO in trying to promote the destination to better connect the supply and demand aspects of tourism, to maximise the use of destination resources. Hotelmule (2009) affirms that key DMO goals can be summarised in the following four points:

1. Enhancing destination image;
2. Increasing tourism industry profitability;
3. Reducing seasonality;
4. Ensuring long term funding.

Since, as exposed in the previous paragraph about destinations, there are different destination typologies, it is clear that there are also different types of DMOs, depending on various factors. Therefore, in the literature some criteria for creating a DMO classification are proposed. Following a geographical criterion, we could divide DMOs mainly in three categories (Marchioro, 2013; Presenza et al. 2005):

1. DMO at national level, whose main aim is generally to market the image of the country as an attractive tourism destination all over the world and to provide all the support needed by the tourist to plan its trip online.
2. DMO at regional level, with the aim of promoting a specific region and thus being able to better focus on the main stakeholders and organize their collaboration.
3. DMO of cities or specific areas (lakes, little islands), that not only manage the image of the destination but also all the processes involving a tourist and all the product and service providers taking part in them.

Under a jurisdictional perspective instead, we can divide DMOs into three main types (Marchioro 2011):

1. Public DMOs: societies entirely owned and controlled by a City, a region or a country, responding to a ministry or generally an institution.
2. Private DMOs: private companies or non profit organizations, responding to the public authority but managing destination infrastructures and stakeholders’ network.
3. Public-private DMOs: a mix of the previous two types by means of a public-private partnership.

1.2.2 Organizational Model and Funding

DMOs nowadays are generally undertaken by either public sector or by a partnership between public and private sectors (Buhalis, 2003). The typology of DMO and even the possibility to fund it are influenced by the political, social, economic and overall regulatory environment (Marchioro, 2011). In fact, there is a plethora of DMO structures, with no universal model. Historically, DMOs emerged either as government departments or as industry association collectives. Later on there has been a shift towards the establishment of public-private partnerships (PPPs), as a way of ensuring that destination management programmes are driven at the meantime by tourism industry but also controlled by public funders (Hotelmule, 2009). PPPs, at both a national and local level, are generally governed by a private sector board that is appointed by, and reports to, a government representative.

Consequently, the board plays the predominant and decisive role in DMOs’ organigram. In fact, this board takes the strategic choices influencing the long-term success of the destination and its performances affects organizational and financial performances (Beritelli and Laesser, 2013). “Obtaining competent and capable board members is vital because they can bring key resources, such as knowledge, skills, relationships, and money, that strengthen the organization” (Brown, 2007).
Another vital component of DMOs are its members. It is very important that every category of stakeholder takes part in the DMOs activity, so that the management can really coordinate effectively the destination and promote the maximum collaboration to reach common goals. In Figure 9 we can see the average percentage for each typology of DMO members.

![Figure 9. Average percentage of DMO members divided per categories on a sample of 79 DMOs worldwide (Source: DMAI)](image)

The first thing that can be noticed is that there is no particular sector dominating the scene. The most diffused members worldwide are hotels, with the 22% of the presence inside DMOs. This fact is positive because it is fundamental to have a certain power balance among stakeholders. Then, from the graph, the reflection comes easily upon the great variety of the actor present in a destination. Retail and hotels are very different sectors, but they both gain economic advantage if the destination in which they are operating is successful. However, it is easy to imagine the complexity of DMOs board role to coordinate, align and equilibrate the interests of the different stakeholders.

Another important aspect for DMOs is the funding. Financial management of DMOs is a central issue for DMO prosperity and effectiveness (Bornhorst et al., 2010), since many DMOs have also very limited budgets. The final customer of DMOs, i.e. tourists, do not pay directly for the services received. The funds a DMO needs to operate could come from different sources, that go beyond the traditional governmental subsidies (Sheehan and Ritchie, 1997) depending also on the organizational structure and to the regulatory environment. A great part of
DMOs, at all levels, and regardless of how they are structured, rely to a large extent on government support.

The main money sources at DMO disposal, according to Scacchioli et al. (2011) and Beritelli and Laesser (2013) are represented in Table 10:

<table>
<thead>
<tr>
<th>Funding Methods for DMOs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public funds</strong> (State/Province/City)</td>
</tr>
<tr>
<td><strong>Tax revenues</strong> (Hotel occupancy, Restaurants, Car Rental, etc…)</td>
</tr>
<tr>
<td><strong>Private funds</strong> (membership fees);</td>
</tr>
<tr>
<td><strong>Financial policies</strong> (Investments and reserves policies)</td>
</tr>
<tr>
<td><strong>Landing taxes</strong> (taxation for the entrance in the destination)</td>
</tr>
<tr>
<td><strong>Overnight taxes</strong> (taxation on every night in the destination)</td>
</tr>
<tr>
<td><strong>Partnership marketing</strong> (advertising campaigns, product development or distribution and sales platforms, etc…)</td>
</tr>
</tbody>
</table>

*Table 10 Funding methods for DMOs (Source: Scacchioli et al., 2011)*

1.2.3 Roles and activities of a DMO

In a general destination, the Destination Management Organization assumes a key role as a focal institution (Ritchie and Crouch, 2003). Most DMOs are not direct producers of tourism services but they simply market and coordinate the destination as a whole. (Estevao et al., 2014). Generally, DMOs activities aim at attracting customers for the destination and link demand with supply. These activities provide benefits to both tourists and stakeholders. In fact, tourists have the advantage to dispose of an integrated, single and complete access to the whole range of resources of a destination. On the other hand, all the providers deciding to be member of the DMO will benefit of the facilitated and already integrated access to the market.

Ndou and Petti (2007) proposed a classification of four different stages of destination configuration and coordination (autonomous; cooperation;
leadership; and distributed leadership) in which DMOs must assume different roles:

1. Autonomous: The first destination configuration is characterised by poor tourism planning, no decisional centres, fragmented supply and low levels of ISs use, DMO is the only possible actor managing the destination, informing suppliers by a fax or email message when tourists asks for a service.

2. Cooperation: Within the cooperation stage, where the supply is relatively structured, there is a limited number of ad hoc decisional centres and most suppliers have legacy ISs. The DMO is still the only stakeholder managing the destination and is able to register service requests, availability and process transactions directly on the suppliers’ IS (Petti and Solazzo, 2007).

3. Leadership: In the third stage the supply is structured, the DMO is the single decisional centre that coordinates the supply and a DMS plays a major role in the coordination, promotion and distribution of the destination (Petti and Solazzo, 2007).

4. Distributed leadership: The fourth and last destination configuration proposed is characterised by a strong maturity of the tourism destination suppliers in terms of the accumulation of high managerial and technological human ware. At this stage, suppliers have a reduced need for a DMO, tending to self-organise.

About the more specific roles of the DMO, a pioneer study in the field of destination marketing and management conducted by Gartrell (1994) has identified the following areas of action for a Destination Management Organization:

- The coordination of the many constituent elements of the tourism sector (including local, political, civic, business, and visitor industry representatives), so as to achieve a single voice for tourism;
- The fulfilment of both a leadership and advocacy role for tourism within the local community that it services. The DMO should be a visible entity that draws attention to tourism so that residents of the destination understand the significance of the visitor industry;
- Helping to ensure the development of an attractive set of tourism facilities, events and programs and an image that will help position and promote the destination as one that is competitive in the experiences it offers;
- Assisting visitors through the provision of visitor services such as pre-visit information, and additional information upon arrival;
- Finally, the DMO also has another important role, serving as a key liaison to assist external organizations, such as meeting planners, tour wholesalers, and travel agents who are working to bring visitors to the destination.
Destination management, according to Petti (2009) is about:

- The creation of a quality tourism product, combining different attractions, products and services;
- Optimization of the tourism benefits on the destination and the composition of the needs of the stakeholders;
- Maximization of tourism expenditure and its distribution on the territory;
- Support to touristic enterprises (especially the small ones) to empower their offering and increase their profitability;
- Balancing economic benefits and negative effects on the territory.

Morrison (2013), after a review of the academic literature about destination management and marketing over the last thirty-five years, developed a list of the main roles of a DMO:

- “Leadership and coordination: The DMO has a leadership role in tourism within the destination; it sets the overall direction for tourism in the future. There are many others involved in tourism in the destination, so the DMO also acts as a coordinator of the efforts of everyone on the destination team.

- Planning and research: The DMO has a key role in preparing tourism policies, plans and strategies for the destination. It conducts research on existing and potential target markets to guide future marketing and product development decisions. The DMO tracks the programs of its main competitors and continually seeks out best practice case studies to improve product development and marketing.

- Product development: The DMO has the overall responsibility for the sustainable development of the tourism product including physical products, people, packages, and programs. It takes inventory of the current destination offerings and assists with continuous product quality improvements. Additionally, the DMO identifies new tourism product development opportunities and provides assistance in realizing these projects and programs.

- Marketing and promotion: The DMO develops the overall marketing strategy and prepares long-term and short-term marketing plans for tourism. It identifies the priority target markets and selects the most effective image or identity for the destination, culminating in the implementation of an effective branding approach. The DMO uses the integrated marketing communications method combining online and traditional promotions to inform and persuade tourists to come to the destination.

- Partnership and team building: The DMO puts together an effective destination team and builds alliances to achieve the destination’s product development and marketing goals. Some of the partnerships are established within the destination, while others are with external parties including
travel agencies, tour operators, transportation providers, MICE planners, and others.

- **Community relations**: The DMO acts as the main champion and advocate for tourism within the destination by raising the awareness and profile of tourism locally to support the achievement of its product development and marketing goals. Additionally, the DMO may consult with community residents when making important decisions that will affect their lifestyles and living standards.”

All the different classifications exposed above are not in contrast, but complete themselves with one another, allowing to have an exhaustive image of what DMO roles are. Moreover, they let understand how complex and multi sided is the management of a destination, how many roles are there to be played and how important is the integration and the coordination of all the stakeholders participating in the life of a destination.

Each of these roles must be converted in a number of activities a DMO has to perform and that are part of its destination management vocation. Here a classification is proposed of the main activities of a DMO in a destination, divided in four phases:

<table>
<thead>
<tr>
<th>Planning and management</th>
<th>Pre trip</th>
<th>During the trip</th>
<th>Post trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentivising technological evolution of destination stakeholders</td>
<td>Providing information to potential tourists</td>
<td>Tourist welcome</td>
<td>Loyalty creation</td>
</tr>
<tr>
<td>Brand creation and image management</td>
<td>Assistance during trip planning</td>
<td>Providing easily accessible information</td>
<td>Feedback collection</td>
</tr>
<tr>
<td>Quality controls, service Rating and performance evaluation</td>
<td>Conversion of interests in booking</td>
<td>Onsite promotion of products and services</td>
<td>Relation and complaints management</td>
</tr>
<tr>
<td>Research and intelligence (data collection, analysis and distribution)</td>
<td>Collaboration with local and foreign Travel Agencies and Tour Operators</td>
<td>Facilitation of tourist experience</td>
<td>Incentivising and facilitating experience sharing</td>
</tr>
<tr>
<td>Training for operators and enterprises</td>
<td>Packages, products and services promotion</td>
<td>Product and services promotion</td>
<td></td>
</tr>
<tr>
<td>Service provision coordination</td>
<td>Destination Promotion</td>
<td>Experiences promotion</td>
<td></td>
</tr>
<tr>
<td>Product and services creation and personalization</td>
<td>Online sale of packages, product and services</td>
<td>Online and onsite sale of packages, products and services</td>
<td></td>
</tr>
<tr>
<td>Contents and information management</td>
<td></td>
<td>Relation establishment facilitation</td>
<td></td>
</tr>
<tr>
<td>Management of the relation with and between customers and suppliers</td>
<td></td>
<td>Feedback collection</td>
<td></td>
</tr>
<tr>
<td>Customer behavior analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 11. Main activities of a DMO in a destination (source: author’s elaboration on the literature)*
1.2.3.1 From Marketing to Management

The meaning of the “M” in the acronym DMO has gradually shifted over time from Marketing to Management, because of the evolution in the role of the DMO determined by the changes in the use of new technologies and in tourism market. (Presenza et al., 2005).

However, there are also some authors (Pike and Page, 2014) thinking that this latter nomenclature is inappropriate and potentially misleading, since the term management implies control, and the authors here argue that very few DMOs have either the mandate or resources to effectively manage their stakeholders. Clearly, this will depend upon the precise legislative or political framework established to guide each DMO, even though most are in a constant state of evolution as political decision-makers rethink their role. In this work, the term management will be preferred, because of the prevalence of this meaning in the majority of recent academic articles.

Exploring the roles and tasks of DMOs Presenza et al. (2005) and Volgger et al. (2010), based on Ritchie and Crouch (2003), identify two core roles for a destination management organization: the first, marketing, mainly related to external performance, and the second, coordinating destination stakeholders, linked with to the internal performance of DMOs. The two roles are well synthetized in the word “Management”, suggesting that this is the most appropriate meaning of the “M” in the acronym “DMO”.

The roles and tasks DMOs should fulfil toward tourists differ also according to the different phase of the tourist trip. As stated by Buhalis and Wagner (2012), the trip can be divided into three different phases: pre, during and post. In each of these phases, DMOs have to strive to perform specific activities in order to meet customers’ expectations.

1.2.3.2 Pre-trip

The key objective of the DMO toward the tourist in the pre trip phase is entering in the choice set that tourists consider when looking for a destination to visit. Thus, the destination has first to be among the possible alternatives and then to win against the other. Since the tourists’ choice is both rational and emotional the DMO must inspire, inform, and engage (Buhalis and Wagner, 2012). All of these activities take place through a virtual relationship with the tourist, and this is the reason why the good utilization of the most recent technologies is a vital factor for DMOs nowadays.
1.2.3.3 During the trip

When the tourist is visiting the destination, DMO’s have the unique occasion to reach him both physically and virtually (Bertero, 2014), establishing a stronger relation in comparison with the other phases. In this phase, the task DMO’s have to perform is well described by Buhalís and Wagner (2015): facilitate tourists at destination. They have to provide them a wide amount of precise and specific information in real time, together with the possibility to stay in contact with family and friends back at home. Moreover, DMOs should create occasions for visitors to get in touch with local culture and to establish physical and virtual relationships with destination’s inhabitants.

1.2.3.4 Post-trip

The post trip phase is the moment when tourists develop attitudinal or behavioural loyalty (Meleddu et al., 2015). Behavioural loyalty is the intention to come back to the destination, while attitudinal loyalty is the intention to recommend the destination to other visitors. Recently, this two kinds of loyalty have enormous impact on destination image, because of the tendency to share these intentions through the new technologies (social networks, reviews site, blogs,…). For these reasons, the role of DMOs in the post trip phase is assisting visitors to remember, share and engage (Buhalís and Wagner, 2015). If correctly encouraged, tourists could greatly contribute to the diffusion of the destination image all over the world. Through user-generated content they can awaken pleasant memories of their trip, decide to revisit the destination and to share their experience and feelings on the internet, thus becoming source of promotion for the destination. Obviously, this is an advantage only if the DMO has succeeded in providing visitors with a pleasant tourism experience. Otherwise, the negative word of mouth will worsen the destination image.

1.2.4 Situation in Italy

Italy deserves a special attention regarding the organization and the diffusion of DMOs. The tourism strategy in this country is very fragmented, due first to the political choice that left to every single region the responsibility to organize its tourism regulations (Legge 135/2001). This legislation brought to the development of many different tourism systems that nowadays are very difficult to manage conjunctly. Despite some recent efforts to standardize the tourism market, every region has its own notations, tourism regulations and organizations, ways to access funding, different procedures to promote its resources, product and services, and even its own training for tourist guides and operators. As
Antonioli and Baggio (2002) sustain, decentralization, lack of a strong decision-making power at a central level, and fragmentation of the tourism industry constitute big barriers for the modernization of tourism market in Italy.

Even inside regions, the situation is not so easy to manage, because often we find the coexistence of recent and old organizations with competences overlapping, interest conflicts or unclear objectives. The environment is further complicated by the presence of some fields that are managed at national level (Legge 135/2001), like cultural and artistic heritage, natural environment, transportation, etc. This fact causes a lack of efficacy in the general regional and provincial strategies, because often the Italian pseudo DMO cannot even control and manage the resources at disposal of the destination, since a national authority manages them.

Looking at other countries (like Spain, Austria, England or Ireland), it could be noticed that DMOs are organized in a different and more effective way. An influential difference seems to be the leading role of DMOs, that in these examples coordinate and manage the stakeholders and the resources the destination has at its disposal.

In general, it could be supposed that the problem in Italy derives from the inconsistency between the aim of the general Italian tourism organization (called, according to the region: STL or APT) and the aim a real DMO should have: Marketing and Management. As we can elaborate from Ejarque (2009), there is a substantial difference between the roles an APT or STL plays and the roles, discussed also in the previous paragraph, a DMO should play.

<table>
<thead>
<tr>
<th>Functions of an APT/STL</th>
<th>Functions of a DMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Destination development</td>
<td>• Destination governance and management</td>
</tr>
<tr>
<td>• Funding</td>
<td>• Touristic resources and infrastructures management</td>
</tr>
<tr>
<td>• Destination marketing and promotion</td>
<td>• Destination development</td>
</tr>
<tr>
<td>• Information to visitors</td>
<td>• Strategic planning</td>
</tr>
<tr>
<td>• Brand management</td>
<td>• Destination marketing and promotion</td>
</tr>
<tr>
<td>• Amministrative support</td>
<td>• Brand management</td>
</tr>
<tr>
<td>• Event organization</td>
<td>• Information to visitors</td>
</tr>
<tr>
<td></td>
<td>• Consultancy to operators</td>
</tr>
<tr>
<td></td>
<td>• Operators training</td>
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</tbody>
</table>

*Table 12. Functions of APT/STL and DMOs (in italic the additional function of a DMO). Elaborated from Ejarque (2009)*
The most critical gap lies for sure in the leadership and coordination functions. In the Italian tourism market, characterized by a great number of different stakeholders having often-contrasting interests, it is impossible to obtain a durable success without these vital functions. As far as tourism is concerned, destinations like Italy need to maintain and develop their attractiveness by interconnecting all tourism suppliers (Buhalis and Molinaroli, 2003). The problem is complex and has no easy solution; nonetheless, it is of the utmost importance and it should be faced, so that Italian destinations will be able to access tourism market with an even more appealing and integrated value proposition.
1.3 ICTs in tourism market

This section explores how ICTs influence the tourism market, the advantages disadvantages and challenges deriving from their implementation and the ICTs typologies on which DMOs should intervene for a successful destination management.

1.3.3 ICTs impact on tourism market

Buhalis (2003) defined ICTs as “the entire range of electronic tools which facilitate the operational and strategic management of organisations by enabling them to manage their information, functions and processes as well as to communicate interactively with their stakeholders for achieving their mission and objectives”. Consequently, ICTs can be seen as an integrated system of networked digital instruments and software, which enables effective data processing and communication for organisational benefit (Buhalis and Jun, 2011).

One of the most far-reaching transformations in the 21st century has been fostered by the proliferation of ICTs in everyday life and travel (Wang et al. 2014 as cited in Neuhofer et al., 2015). The role of ICTs in the tourism industry is getting more and more pervasive. In fact, it is widely agreed (Buhalis, 2003; Buhalis and Law, 2008 as cited in Neuhofer et al., 2012) that technology plays a key role in the operation, structure and strategies of tourism organisations. It is also a central element in the innovation of products, processes and management, and an enabler of opportunities for tourism organisations to attract and retain visitors (Hjalager, 2010 and Werthner and Klein, 1999, as cited in Neuhofer et al., 2012). ICTs have become key elements in all operative, structural, strategic and marketing levels to enable interactions among suppliers, intermediaries and customer all over the world (Buhalis and Law, 2008). Moreover, ICTs empower tourists and allows the co-creation of richer and more personalized tourism experiences (Niininen et al., 2007; Sandström et al., 2008 as cited in Neuhofer et al., 2014). Consequently, technologies are not only altering current experiences but also lead to new types of tourism experiences (Darmer and Sundbo, 2008; Gretzel and Jamal, 2009 as cited in Neuhofer et al., 2014).

Petti (2009) listed the greatest changes that ICTs caused in tourism market, mainly linked to the fact that nowadays the majority of tourists uses the internet:

- The majority of bookings are submitted online, either through online travel agencies or directly, through service providers websites;
Disintermediation: the majority of visitors book services (hotel, restaurants, flights,...) directly to their providers, without recurring to intermediaries;

The influence of opinion of other tourists on the purchase decision is enormous, simple customer opinions posted on rating websites are able to determine the success of service providers;

The search for tourism products gets more and more sophisticated, but also more convenient, because the tourist looks for modular packages, able to reflect its interests.

Petti (2009) concludes underlining that the major impact brought by ICTs resides in the activities at direct contact with the customer (online sales, marketing, information provision, transportation and services), that he calls also the “raw materials” of tourism market.

Another radical change fostered by ICTs in tourism sector is the increase in competition, much higher than in many other sectors (Petti, 2009). The rivalry between service providers together with the increase in the bargaining power of tourists caused a decrease in prices and an increase in the attention customers pay to “order winner” services.

Since the ICTs were first introduced, the possibility rose for the development of a new form of tourism: e-Tourism. This term refers to the application of ICTs to tourism industry. Buhalis (2003) suggests that e-tourism reflects the digitisation of all processes and value chains in the tourism, travel, hospitality and catering industries. At the tactical level, it includes e-commerce and applies ICTs for maximising the efficiency and effectiveness of tourism organisations. At the strategic level, e-tourism revolutionises all business processes, the entire value chain as well as the strategic relationships of tourism organisations with all their stakeholders (Buhalis and Jun, 2011). In this way, ICTs opened the possibility for the creation of new models of e-business. Among the various classifications of these models for tourism, the most noteworthy is that proposed by Jarvela et al. (1999), identifying five different categories:

- Information provider: platform filtering, searching and providing information at different levels of detail, without any other significant functionality;
- e-Booking service: Webpages from which a direct or indirect booking is possible
- Online Travel Agency (OLTA): in this case the customer is able to the whole transaction on line, including the payment for the desired service;
- e-Marketplace: offering of multiple services with an high possibility of personalization and a high relational intensity provided by an online post sale management;
Comparison System: search engine able to compare many service offers, able to help the customer in its choice filtering the results according to its preferences.

It is interesting to see how this classification reflects in a predictive way the evolution of the form of e-Business in tourism over the years, until today.

Turban et al. (2008) provide a complete list of benefits of e-commerce to organizations and individual customers, reported in Table 13.

<table>
<thead>
<tr>
<th>Benefits to Organizations</th>
<th>Benefits to Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locating customers and/or suppliers worldwide, at</td>
<td>Can shop any time from any place because of ubiquity</td>
</tr>
<tr>
<td>reasonable cost and fast</td>
<td></td>
</tr>
<tr>
<td>Reduce cost of information processing, storage, distribution</td>
<td>Large selection to choose from a variety of channels (e.g., vendor, products, styles)</td>
</tr>
<tr>
<td>No over time or other cost</td>
<td>Can customize many products and/or services</td>
</tr>
<tr>
<td>Business always open (24/7/365)</td>
<td>Can compare and shop for lowest prices</td>
</tr>
<tr>
<td>Reduce delays, inventories, and cost through supply chain</td>
<td>Digitized products can be downloaded immediately upon payment</td>
</tr>
<tr>
<td>improvements</td>
<td></td>
</tr>
<tr>
<td>Customization/personalization at a reasonable cost</td>
<td>Easy finding what you need, with details, demos, etc.</td>
</tr>
<tr>
<td>Seller can specialize in a narrow field, yet make money</td>
<td>Do auctions any time and from any place</td>
</tr>
<tr>
<td>Facilitate innovation and enable unique business models</td>
<td>Sometimes no sales tax</td>
</tr>
<tr>
<td>Rapid time-to-market and increased speed</td>
<td>Can work or study at home</td>
</tr>
<tr>
<td>Lower communication cost</td>
<td>Can socialize online in communities yet be at home</td>
</tr>
<tr>
<td>Save time and reduces cost by enabling e-procurement</td>
<td>Can find unique products/items</td>
</tr>
<tr>
<td>Improve customer service and relationship through direct</td>
<td></td>
</tr>
<tr>
<td>interactions with customers</td>
<td></td>
</tr>
<tr>
<td>May need fewer permissions in business environments and be</td>
<td></td>
</tr>
<tr>
<td>able to avoid sales tax</td>
<td></td>
</tr>
<tr>
<td>All distributed material is up-to-date</td>
<td></td>
</tr>
<tr>
<td>E-commerce may help small companies to compete against large</td>
<td></td>
</tr>
<tr>
<td>ones by using special business models</td>
<td></td>
</tr>
<tr>
<td>Using customization inventories can be minimized</td>
<td></td>
</tr>
<tr>
<td>Reduce distributing cost by deliver online</td>
<td></td>
</tr>
</tbody>
</table>

Table 13. Benefis of ICTs to consumers and organizations (Source: Turban et al., 2008)

However, there are also limitations and barriers in utilizing the Internet and ICTs. Turban et al. (2008) classified also barriers to e-commerce as either technological or non-technological. The result of their classification is reported in Table 14.
<table>
<thead>
<tr>
<th>Technological Limitations</th>
<th>Non Technological Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of universal standards for quality, security, and reliability</td>
<td>Security and privacy concerns deter customers from buying</td>
</tr>
<tr>
<td>The telecommunications bandwidth is insufficient, especially for m-commerce</td>
<td>Lack of trust in e-commerce and in unknown sellers hinders buying</td>
</tr>
<tr>
<td>Software development tools are still evolving</td>
<td>People do not yet sufficiently trust paperless, faceless transactions</td>
</tr>
<tr>
<td>It is difficult to integrate Internet and e-commerce software with some existing (especially legacy) applications and databases</td>
<td>Many legal and public policy issues, including taxation, have not yet been resolved or are not clear</td>
</tr>
<tr>
<td>Special web servers are needed in addition to the network servers, which add to the cost of e-commerce</td>
<td>It is difficult to measure some of the benefits of e-commerce, such as online advertising. Mature measurement methodologies are not yet available</td>
</tr>
<tr>
<td>Internet accessibility is still expensive and/or inconvenient</td>
<td>National and international government regulations sometimes get in the way</td>
</tr>
<tr>
<td>Order fulfilment of large-scale B2C requires special automated warehouses</td>
<td>Some customers like to feel and touch products. Also, customers are resistant to the change from shopping at a brick-and-mortar store to a virtual store</td>
</tr>
<tr>
<td>In many cases, the number of sellers and buyers that are needed for profitable e-commerce operations is insufficient</td>
<td>Online fraud is increasing</td>
</tr>
<tr>
<td>It is difficult to obtain venture capital due to the failure of many dot-coms</td>
<td></td>
</tr>
</tbody>
</table>

Table 14. Technological and non-technological limitations imposed by ICTs (Source: Turban et al., 2008)

1.3.3.1 Benefits for DMO activities

The introduction of ICTs in the activities of DMOs can greatly contribute to the effectiveness with which they perform their activities. According to Petti (2009), this is mainly due to the fact that:

- ICTs reduce costs (for instance, no need to always print paper leaflets);
- ICTs accelerate the time needed to collect and analyse data, allowing for a shorter analysis period and thus an higher accuracy;
- ICTs improve the quality and accuracy, lowering the rate of human mistakes;
- ICTs increase the efficacy of DMOs activities.
Moreover, Petti (2009) proposes an explanation of how the ICTs transform some of the main activities of a DMO.

- Research and intelligence: ICTs provide DMOs with many and often relatively cheap alternatives to analyse data internally, without always recurring to external analysts and thus allowing them to significantly reduce the related costs. Analysis software can also help in benchmarking and strategic decision, allowing to base the strategic choices on a greater and more precise number of data;
- Promotion and marketing: ICTs are able to complement or even substitute the traditional promotional means. The possibility to realize websites and portals able to provide information filtered on the basis of tourists preferences allows a greater effectiveness. Moreover, with the new technologies it is possible to organize and manage marketing campaigns using more communication tools contemporarily;
- Services and sales: ICTs make destinations autonomous in their sales and empower them to reach a broader market. Platforms for online booking establish a direct contact with the potential visitor, without any need of intermediation. In addition, instruments like CRM software allow an easier and more efficient management of the relationship with travellers;
- Support to enterprises: ICTs implementation across destination stakeholders provides any enterprise with a number of new potential tools to improve their activities performance. DMOs can thus foster the ICT adaptation among their members and consequently give them an instrument to assist them in their business creating two advantages: strengthen the existing relationship and generate an economic return for themselves and their members, because of the increased efficiency and effectiveness in their management activities.

1.3.3.2 Benefits for local tourism

The impact of ICTs on tourism market reached also local tourism, bringing local tourism enterprises a number of new opportunities for growth and consolidation. Petti (2009) explored the reasons why ICTs implementation could benefit local tourism in a particular way:

- ICTs ensure the direct participation of local enterprises to the global market, fostering the creation and the autonomy of autochthonous tourism activities;
- ICTs can help creating and promoting specific tourism offers leveraging on local products and peculiarities, thus helping local economy;
• ICTs enable direct promotion and marketing for small destination, eliminating the need to make use of great international actors of tourism intermediation;
• ICTs improve the degree of online (international network) and offline (public-private actors collaboration) connectivity, simplifying the obtainment of the coordination, needed to compete on international market,
• With ICTs the local tourism enterprises have the possibility of disintermediation, they can autonomously reach customers from all over the world;
• ICTs increase the profitability of small local enterprises, allowing them to get in contact with market niches they would never otherwise have reached.

1.3.4 Challenges imposed by ICTs to DMOs

The always-growing presence of ICTs in tourism market described until now poses a challenge to Destination Management Organizations. ICTs and more specifically Social media like Facebook, Twitter and TripAdvisor have changed the way people and tourism enterprises interact (Leung et al., 2013). New technologies allow people to stay connected all day long and the presence of an internet connection is being more and more given for granted, so that a lack of it is immediately seen as a big disservice. Tourist expect destinations to be constantly up to date with the last technological developments. Since visitors nowadays have plenty of possibilities to compare the service level, an eventual slowdown in ICTs updating could be easily noticed and result in a decrease of destination appeal.

In this fast evolving environment, DMOs will have to adapt to the change, otherwise they will no more be able to meet customer needs and will consequently die. As stated by Scacchioli et al. (2011) “DMO’s will have to evolve becoming virtual spaces”. There will be no need of physical offices in the future, because the contact and the information requests will happen online, through social media. Services inside the destination will be provided in an interactive way by means of dedicated apps for smartphones. Gonzalo (2013) identified four factors that will impose a challenge to the DMO in the future:

1. The collaborative economy: Known also as peer-to-peer economy and based on internet platforms, it allows the provision of services (for example accommodation, car rental, restoration and even city guides) without the intervention of an intermediator. As stated by Berne et al. (2012) this phenomenon is called disintermediation, and is possible because ICT reduces communication costs and creates opportunities for an efficient and
effective collaboration. Some interesting examples are web platforms like AirBnB, HoweAway, Wimdu or Couchsurfing, enabling people to rent out a room, a sofa or the whole apartment or house, either through home swapping schemes or via transactional sites (Gonzalo, 2013).

2. The rising importance of UGC and social platforms: social media and the rapid diffusion of smartphones and tablets made the information seeking process much faster and complex. Conversations and opinion are exchanged simultaneously on an incredible number of platforms, thus reducing the possibility for the DMO to control its image and even to monitor it.

3. The dominance of OTAs in the distribution system: it is very hard for DMOs websites to compete with the big online travel agencies allowing tourists to book a complete dynamic package (this issue is analysed more in depth in section 2.3.5.1). It is interesting to notice that while ICTs introduction in tourism provided tourists with disintermediation possibilities, the number of intermediaries did not decrease (Bonatti, 2014). On the contrary it increased, because despite the loss of importance of travel agencies and tour operators, internet contributed to a proliferation of intermediaries mainly in the form of OTAs

4. Diffusion of mobile technologies: this factor generates a great challenge for DMOs. Websites must be readable and ready to adapt to all the new screen formats. Moreover, it’s increasingly difficult to manage all the needs tourists have while visiting the destination, and to do it in real time. Since the needs at destination strongly differ from those experienced at home, a solution could be the diversification of websites.

Gonzalo (2012), based on a study of the French consulting agency Touristic proposed also six key factors for a destination to become a digital destination, term referring to a destination which makes effective and efficient use of the available ICTs:

1. Wi-Fi: Free Wi-Fi must be available on a large scale, from transportation to attractions, to accommodations and restaurants, to ensure accessibility across the destination.

2. Mobile solutions (site, application…): A mobile optimized site and/or a mobile app are the tools allowing travellers to stay connected and to continue their search while onsite.

3. Digital desk: Technologies can address needs and wants of the travellers and help to keep operational costs in control. Destinations can use new technologies to enhance travellers’ experience. The smart use of QR codes leading to an offer, or touchscreens in key areas of the destination to extend regular visiting hours at the local information desk, are just some examples.

4. Modified website: having a modified website for when you are onsite at a destination could fit better to the needs of the visitor. This variation of the
full-on site could show highlights and most commonly asked Q&A, or offer a modified site focused on different types of personas, with shared interests with the visitor.

5. Printed documents: When a new mobile application is developed, it is important to make sure people can rent or borrow a smartphone or iPad to enjoy it too and make sure there is a paper flyer that explains how it works.

6. Key performance indicators (KPIs): The above five points need to be measured against success metrics that should be defined from the outset. Without KPIs in place, it will be difficult, if not impossible, to tweak and adjust as time goes by, technologies and customer behaviours changing along the way.

1.3.4.1 Online Travel Agencies threat

One of the most challenging issues brought on by ICTs introduction for DMOs is the competition with Online Travel Agencies, a form of e-Business that proliferated in the last few years, thanks to the diffusion of ICTs. They are online platforms through which specialized companies provide tourists with the opportunity to buy a series of services, often together with the possibility to build dynamic packages (Ayazlar, 2014). Dynamic packaging is one of the most important innovations of online travel agencies. Dynamic packaging provides consumers with the opportunity to reach multiple services with a single search. Thus, consumers can get lower prices than when they purchase each independent component individually. At the same time, dynamic packaging allows suppliers to hide their discount rates (Rose, 2004). Providing competitive dynamic packaging functionalities on destination websites is a big challenge for DMOs, for reason such as the limited resources and the disadvantageous economies of scale in comparison with OTAs.

The consequence is that the average consumer now usually books the services he needs through one of the two major OTAs: Expedia Inc., with its subsidiaries Hotels.com, Hotwire, Trivago and Venere (not to mention its recent agreement with Travelocity) or Priceline Inc., with its subsidiaries such as Booking.com, Kayak and Agoda (Tnooz, 2013). Particularly, the great success of these big players allows them to have an enormous amount of economic resources at their disposal and to provide tourists with a highly visible and convenient opportunity to book a complete dynamic package. The destination websites run by DMOs are instead under increasing pressure as consumer switch to using OTAs to book hotels, attractions and activities (Goodwin, 2014). Moreover, this change took place very fast, leaving DMOs low chances to get prepared to face the new situation. To realize the quickness of the change, we can look at hotel sector, which makes heavy use of online booking. In some cases, hotels who once had 70% of their online bookings come through their own website, with 30% coming
from OTAs, saw this ratio reversed in less than 12 months (Tnooz, 2013). In Figure 10 we can see the perceived effect of OTAs in accommodation sector.

Figure 10. Sentiment toward OTAs in Italian accommodation sector (Source: Osservatori Digital Innovation, Politecnico di Milano)

A further difficulty for DMOs resides in the ranking of the results on search engines. Search engine ranking is of utmost importance in generating business revenues and the rankings on search engine result pages (SERPs) have become a battleground for destinations and competing tourism and hospitality businesses (Pan 2014). However, this competition is clearly dominated by big OTAs, able to invest huge amounts of money to rank first in SERPs, to have attractive websites and to use a stronger bargaining power with hotels (Bonatti, 2014). Accommodation searches are always the first ones in the users’ search sequence when planning a trip (Pan, 2014) and this gives further advantage to OTAs, whose ranking is often related with keywords like “Hotel”. DMOs websites will inevitably rank lower, with a negative impact on their eventual transactional functionality. In addition, the complexity of the situation increases also because social media content is always embedded in search engine results (Xiang and Gretzel, 2010). However, it is still useful for DMOs to invest in a good website, with transaction possibilities. In fact, even if sponsored websites rank first and their click-through rate is the highest, they do not necessarily obtain higher conversion rates (Agarwal et al., 2011).

A potential solution to these problems, proposed by Gonzalo (2013) could be a partnership with a big player for online booking. For example, the region of Eastern Townships, in the province of Quebec, Canada (website link: http://www.easterntownships.org/?lang=en), signed a deal with Booking.com to become its de facto booking option on its destination website. Similar agreements were signed by New York City with Booking by and Chicago with Expedia. The objective is to bring in more marketing power and visibility to the destination and
increase the number of transactions. Not having to invest in an in-house solution, nor maintain yearly costs, is a clear advantage. There is also a revenue-sharing scheme involved in these agreements, where the DMO will earn a percentage of the booking and of the commission earned on every transaction (Tnooz, 2013).

Other solutions proposed by Bonatti (2014) for increasing the percentage of direct booking specifically in the accommodation sector but that could be used for inspiration also by destinations are:

- ICTs utilization for customer relationship management: he demonstrated, through a study conducted on Italian accommodation sector, how the personalized communication with customers increases the percentage of bookings received through the private booking channel. Through the utilization of ICT like social media and big data analytics, destination could thus improve customer loyalty. Granting to the visitor an unique and personalized experience helps to improve the performances (Sigala, 2005). However, this personalization must take place after an attentive information collection and a scrupulous data elaboration.

- Publication of web contents related to the territory on blogs and social media: this could be a valid inspiration for destinations, which have at their disposal the advantage of the focalization on their particular territory. In fact, by publishing evocative images and detailed information, they could be able to attract more effectively the attention of a tourist that has already decided its destination, in comparison with a general OTA. This is due to the fact that OTAs, because of the great span of customers they serve, won’t be able to go as in depth with the informative content as destinations.

In conclusion, the environment in which tourism enterprises operate is evolving rapidly and inevitably. The consequence is that the fiercer competition nowadays takes place online and all the players in tourism market have to adapt. In this situation the understanding and the efficient and effective utilization of ICTs is fundamental.

1.3.5 Most influential ICTs in tourism market

In the following paragraphs, an analysis of the main types of ICTs present tourism market is proposed. The scheme through which these analyses are presented is regular. First, where necessary, a definition or classification of the technology is
reported. Then the reasons and objectives behind the utilization of the analysed instrument in tourism are proposed. Later, the role of the analysed tool inside a general trip is explored and finally its characteristics are described.

In *Table 15* it is possible to observe the main ICTs utilized in tourism market, accompanied by their more salient advantage or disadvantage, a qualitative comparison of their costs deduced from the literature, their main aim in tourism experience and the phase of the trip in which they are mainly utilized.

<table>
<thead>
<tr>
<th>ICT</th>
<th>Pros</th>
<th>Cons</th>
<th>Costs</th>
<th>Main Aim</th>
<th>Main Utilization Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>Reference point for destination customers</td>
<td>Requires constant adjournments</td>
<td>Medium/High</td>
<td>Information / Purchase</td>
<td>Pre/during/after</td>
</tr>
<tr>
<td>Social Media</td>
<td>Enormous potential pool - Direct contact with customers</td>
<td>Needs constant activity - Absence of control on customer reactions</td>
<td>Low/medium</td>
<td>Information / Promotion</td>
<td>Pre/during/after</td>
</tr>
<tr>
<td>Destination Management System</td>
<td>Automation of processes - Increased efficiency</td>
<td>Great investments required - Difficult implementation</td>
<td>Very High</td>
<td>Supporting destination management</td>
<td>Pre/during/after</td>
</tr>
<tr>
<td>Big Data Analysis systems</td>
<td>Uncover hidden potential of big datasets</td>
<td>Wrong data collection could have bad consequences</td>
<td>Medium/High</td>
<td>Data collection and interpretation</td>
<td>Pre/During</td>
</tr>
<tr>
<td>Mobile Application</td>
<td>Available everywhere, also offline</td>
<td>It is difficult to fully understand tourist needs</td>
<td>Low/Medium</td>
<td>Assistance to tourists</td>
<td>(Pre)/during</td>
</tr>
<tr>
<td>Destination Card</td>
<td>Assists, integrates and adds value to tourist experience</td>
<td>Requires attentive and specific design to be successful</td>
<td>Medium</td>
<td>Easier accessibility to destination resources</td>
<td>During</td>
</tr>
</tbody>
</table>

*Table 15. Most influential ICTs in tourism market.*
1.3.5.1 Website

The Internet has become the primary source on which tourists search for information. (Lehto et al., 2006). Nowadays, tourists from all over the world use the web to plan their holidays, make their bookings and service purchases, and share their experiences (Fernández-Cavia et al., 2014).

In a similar scenario, official destination websites are an essential tool for many reasons (Díaz-Luque, 2009; Fernández-Cavia and Huertas-Roig, 2009, Fernández-Cavia et al., 2014; Lee and Gretzel, 2012, Ljubljana Tourism):

a) for providing ideas and all the practical information about the destination to potential or current tourists who are looking for places of interest;
b) for destination branding;
c) as an instrument for persuading potential tourists;
d) as a channel for marketing related services and products;
e) as a platform for sharing information and experiences among destination managers and tourists, or simply between tourists themselves.
f) as broker for smaller agencies and operators struggling to gain sufficient exposure and visibility, especially with international audiences;
g) As a channel for the sale of products and services.

All these reasons contribute to make the official websites the most important communication tool for destinations (Lee and Gretzel, 2012).

Moreover, the role of the websites changes in the different phases of the trip, since nowadays, thanks to the diffused use of smartphones, websites can be accessed everywhere at any moment:

- **Pre-trip**: the role of the website in this phase is mainly to inspire, inform and engage the visitor (Buhalis and Wagner, 2012). Another function in the pre-trip phase could be that of persuading potential visitors to become actual buyers of destination services (Lee and Gretzel 2012). This purchase could then take place on the official website or also on other websites.

- **During the trip**: the aim of the website during the visit could be simply resumed by this short sentence: facilitating the tourist at destination (Buhalis and Wagner, 2012). Visitors need precise information to solve practical problems they are facing but also ideas and suggestions about what to do at destination. They could also be willing to buy services online and to receive alternative proposals when they want to change their plans. For facing the enormous amount of operations that are requested in these phases, an optimal organization of the contents is of the utmost importance (Yeung and Law, 2004).

- **Post-trip**: in this phase the primary purposes of the website is to help visitors to remember, share and engage their experience at destination (Buhalis and Wagner, 2012). Various functions like personalized messages
and photo contests could help to reach this aim. The sharing and engagement part is often strictly intertwined with the use of social networks, of which destination website can show the links (Buhalis and Wagner, 2012).

As already mentioned in the previous chapter, it could be interesting for destinations to have a different website for the pre and during phase (Gonzalo, 2012). This would allow destinations to focus on the different visitors’ needs in these two phases and to create personalized paths along the website according to their interests or to the aim of the visit. Essentially, DMOs need to perfect their official websites for two reasons: first, in users' eyes they represent the destinations and second, they enable potential visitors to assess the products, services and experiences the destinations offer (Luna-Nevarez and Hyman, 2012).

Every function mentioned above can be performed by destination websites through a number of characteristics. The most important aspects for a website could be summarized in the following 4 points (Fernández-Cavia et al., 2014):

1. Technical aspects: Usability and web positioning are fundamental for DMOs and destination brands (Morrison et al. 2004). The visitor must be able to find what he needs with a low effort. Another technical aspect that is "information architecture, that is, the way information is organized, structured and labelled in order to facilitate its retrieving” (Yeung and Law, 2004).

2. Communicative aspects: the amount and quality of content or language selection, the use of cultural adaptations, are essential in the tourism sector.

3. Relational aspects: interactivity or use of 2.0 tools. Interactivity helps users to process information, makes navigation last longer and improves the attitudes toward the brand (Sicilia et al. 2005). Moreover, the new interactive platforms known as social media play a major role in the selection of a tourist destination (Sigala, 2009; Xiang and Gretzel, 2010). The definition of web 2.0 was introduced by O’Reilly Media at the Web 2.0 Conference held in San Francisco in 2004, refers to “the second-generation of Internet-based services that let people collaborate and share information online in perceived new ways-such as social networking sites, blogs, wikis and communication tools” (Turban et al., 2008 as cited in Buhalis and Jun, 2011).

4. Persuasive aspects: brand image and options for marketing the products and services provided by the website.

In conclusion, from the analysis of the literature about destination websites it is clear that a clever utilization of this instrument is crucial for becoming a competitive destination in tourism market.
1.3.5.2 Social Media

Social media are defined as “the online platform and tools that people use to share opinions and experiences, including photos, videos, music, insights, and perceptions with each other” (Turban et al., 2008 as cited in Buhalís and Jun, 2011). Social media enable common people to easily control and use various media at little or no cost; consequently, they enable communication and collaboration on a massive scale (Turban et al., 2008). Social media include social networking sites, consumer review sites, content community sites, wikis, Internet forums and location based social media (Zeng and Gerritsen, 2014). Although the definition given above, selected because of its clearness, in the literature it is possible to find many different and continuously evolving definitions. Cohen (2011) summarized 30 different definitions of social media, from different perspectives. The most significant characteristics of social media in these definitions have been identified and summarized. They include:

1) Social media depend on information technology;

2) Social media are peer-to-peer communication channels, enabling the interactive web's content creation, collaboration and exchange by participants and the public, facets which introduce substantial and pervasive changes to communication between organizations, communities and individuals;

3) Social media link users and allow them to build a virtual community by using cross-platforms, and therefore affects people's behaviours and real life.

Social media have emerged as the new way in which people connect socially, by integrating information and communication technology, social interaction, and the construction of words, pictures, videos and audio. ‘‘It is much more than a new way to communicate; it is an entire online environment built on participants' contributions and interactions” (Zeng and Gerritsen, 2014). Social media growth has been exponential over recent years and it is still growing at a fast pace.

Tourism market is strongly affected by the existence and increasing use of social media as they “are taking an important role in travellers’ information search and decision-making behaviours” (Yoo et al., 2011). Many countries regard social media as an important tool to promote their tourism industries (Zeng and Gerritsen, 2014). Social media allow destinations to contact visitors at relatively low cost and higher levels of efficiency than that which can be achieved with more traditional communication tools (Kaplan and Haenlein, 2010 as cited in Kiráľová and Pavlíčeka, 2015). The destination will be successfully attractive with a well-developed communications strategy focusing on social media (Kiráľová and Pavlíčeka, 2015). On the other side, they enable visitors to communicate not only with the destinations and with its DMO, but also with visitors who have recently experienced the destination they are considering to visit (Kiráľová and Pavlíčeka, 2015). Using social media visitors can gather first-
hand information from other visitors and be more prepared to make decisions about the destination or the experience.

The benefit of social media and their effectiveness for destinations can be seen mainly in an increase in (Pergolino et al., 2012; Kiráľová, 2014):

a) brand awareness;
   b) brand engagement;
   c) word of mouth;
   d) friends/liking;
   e) trust and social validation.

An interesting study conducted by Fotis et al. (2011) highlighted the purposes with which tourists use social media in the different phases of their trip:

6. **Pre-trip:** in this phase the most common use of social media among tourists were searching for ideas on where to go for holiday, and seeking ideas and information on excursions and other leisure activities. Another diffused use happens after the final choice of destination, when social media are visited to confirm that a good destination choice was made. The independency of the review in the destination evaluation phase is very important for tourist (TEXT100 digital index, 2014) and social media are the most important source of independent evaluations.

- **During the trip:** when they are at destination, tourist primarily use social media to stay connected with friends, but to a lesser extent to find out information about specific attractions and leisure activities. Providing comments and reviews about the holiday experience, during the trip, is also becoming a new way to use socials, especially with the diffusion of the mobile devices.

- **Post-trip:** in this phase, the use of social media is linked primarily with two reasons. The first is to share their experiences and photos with their friends and/or other travellers. The second is to provide evaluation and reviews about their accommodation and/or their holiday destination.

Since the social media are overcrowded and oversaturated with information, it is very difficult to attract attention however some schemes seems to work better than others: novelty, chance to win, celebrity involvement, uniqueness, unexpectedness, competition, consonance or interesting graphical design. In the last years, social media functionality is increasingly incorporated into mobile applications. It is not the unique function of web anymore; Smartphones are becoming the most important social media devices (Kiráľová and Pavličeka, 2015). “The increased use and changes in technology hand in hand with the decrease of marketing budgets are forcing destinations to innovate their communications strategies as well. More and more destinations shift their
traditional communications strategy based on radio, television, printed media and others towards internet and social media” (Kiráľová and Pavlíček, 2015).

1.3.5.2.1 Social Networks

Social networks are a subset of social media. Fotis et al. (2011) describe them as “online systems enabling users to become members, create a profile, build a personal network connecting them to other users with whom they exchange on a frequent basis skills, talents, knowledge, preferences and other information”. Another definition given by Turban et al. (2008) describes social networks as “a place where people create their own space, or home page, on which they write blogs (Web logs); post pictures, videos or music; share ideas; and link to other Web locations they find interesting.” According to the social network theory, a social network is a social structure made of nodes and ties (Barnes, 1954). Nodes are the individual actors within the networks, and ties are the relationships between the actors.

Social networks have a particular importance since through them DMOs can reach an enormous pool of potential visitors at a very low cost. Moreover, as it can be understood from the definition of social network given above, DMOs can reach them personally, because every tourist has very probably its own profile. In 2014, there were 1.133 billion international tourist arrivals worldwide (source: UNTWO World Tourism Barometer). In the following graph, we can see the number of active users (in millions) per social network worldwide.

![Leading social networks worldwide as of August 2015, ranked by number of active users (in millions).](Source: Statista.com)
After a glance at the numbers, it is reasonable to assume that the almost total pool of potential tourists can be reached through their social network profile. This demonstrates that social networks can play a fundamental role in many aspects of tourism, especially in information search and decision-making behaviours (Fotis, 2011), tourism promotion (SoMeTourism, 2011), and in interacting with consumers via social media channels (Zeng and Gerritsen, 2014). This fact imposes a challenge to DMOs, because competition on social networks is getting higher and higher. The success will not be equally distributed among DMOs, but only creative and innovative DMOs, which will exploit these instruments more effectively, will be able to achieve sustainable and competitive advantages in the future (Buhalis and Jun, 2011).

An interesting case of how the good use of social media can benefit a destination is provided by the state of Michigan (USA) whose Facebook campaign was studied by Bradbury (2011). In fact, Michigan Facebook Page includes frequent wall posts by Pure Michigan; the purpose of these posts are generally to update fans on Michigan news, share fun facts, and promote current deals or contests. The Page also sees daily fan interaction, as fans post photos, comments, questions, and other Michigan-related content. Moreover, in the “Videos” section, visitors can view promotional videos created for the Pure Michigan campaign. The Pure Michigan Facebook Page also includes a section that allows users to read the @Pure Michigan Twitter stream, with a “Follow” button incorporated into the page. In addition to adding the Twitter app to their Facebook Page, Pure Michigan developed two special apps to enhance their Facebook presence: “Welcome,” and “Merchandising.” Pure Michigan’s Welcome app encourages Page visitors to “Like” the Pure Michigan, post content such as travel trips, sign up for the Michigan.org e-Newsletter, watch current Pure Michigan commercials, take part in featured deals, and visit other social media sites run by the Pure Michigan team. Additionally, the “Welcome” section highlights upcoming events taking place around the state of Michigan. The Merchandising app features Pure-Michigan-themed products for sale, including glasses, apparel, and other items. Thanks to all these social media activities the Pure Michigan Facebook Page has been extremely successful as a source of information and a motivating factor that increased the number of travel plans to visit the state. According to the ForeSee Results findings, “nearly three quarters of the Pure Michigan Facebook fans learned about places and activities in Michigan they did not know about [previously]...a third of those fans were inspired to travel to or within Michigan after reading the posts.” This high rate of audience response is indicative of the power of social media as a promotional and relational tool within the tourism industry.
1.3.5.3 Destination Management System

The concept of ‘Destination Management System’ (DMS) emerged during the 1990s. Among the many definitions available this one will be taken into account: “Destination Management Systems (DMSs) are systems that consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organization (DMO) within that region. DMSs attempt to utilise a customer centric approach in order to manage and market the destination as a holistic entity, typically providing strong destination related information, real time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers” (Horan and Frew, 2007). As it can be deduced in this definition DMSs are powerful, complex and complete instruments. They are usually commissioned and utilized by DMOs and they operate on three sides: Tourist, enterprise and institution (Petti, 2009). Under a B2C (Business to Consumer) perspective, DMS allow visitors to search, plan and dynamically purchase tourism products without leaving the official destination information system (IS) (Egger and Buhalis, 2008 as cited in Estevao et al., 2014), by providing coherent and integrated information (Petti, 2009). Under a B2B (Business to Business) perspective, they assist DMOs to jointly and coherently promote and sell their offering to visitors, keeping flows and data under control. Moreover, they allow more systematic communication flows between suppliers, aiming at fostering collaboration efforts within the destination (Dwyer et al., 2009 as cited in Estevao et al., 2014). Under a B2G (Business to Government) perspective instead, they allow data collection and analysis, facilitating the implementation of tourism activities planning or marketing campaign (Petti, 2009). In essence, the main aim of DMS is to work as a tool for developing the tourism business in a destination. DMOs employ DMS in order to support their functions towards the destination (Horan and Frew 2007 as cited in Abdal-Fadeel, 2011).

Although the website is the most visible part of a DMS (Petti, 2009), it is important to underline that there are some differences between a DMS and a traditional DMO website. This difference can be found in the functionalities made available to the DMOs staff, for internally assisting and coordinating their operations, and those aimed at destination-based tourism businesses. Petti (2009) sustains that creating a complete and exhaustive website does not complete the creation of a DMS, but creating a DMS is more about using the web to create a network of suppliers, activities and functions able to promote, market, coordinate and manage a destination and its stakeholders. The most evident difference between DMS and DMO website is found in the transactional dimension,
particularly on transaction functionalities related to complementary general requirements (not associated to specific components of tourism destinations), that are more likely to be found in DMSs (Estevao et al., 2014). Moreover, DMSs contain functionalities aimed at facilitating the management of DMOs, as well as the coordination of the local suppliers at the destination level (Buhalis and Jun, 2011). Despite the utilization of these functionalities, usually uses a website as an interface, DMSs are much more than a traditional webpage. Specifically, Petti (2009) divided the functionalities that could be provided by a DMS in three categories, according to the type of actor to whom the functionality is addressed:

- Services to tourists: personal account management, itinerary planning, e-commerce and e-booking, feedback and sociality areas;
- Services to enterprises: webstore, management of product and services catalogues, bookings, private profile and feedbacks;
- Services to institutions: data analysis, supplier and customer relationship management, survey creation, business intelligence, stakeholders cataloguing and benchmark.

According to Petti (2009) there are two different ways in which a DMO could decide to manage a DMS.

- Self-managed DMS: the management and technical activities are outsourced to specialized companies, while the operators of the DMO have simple operative tasks. There’s an authority coordinating the creation and first stages of the project. The system is created and tested by a specialized service provider but later on it becomes autonomous, working without any further intervention by the DMO.
- Managed DMS: A Destination Managed Company is created on purpose to manage, organize and take care of the DMS through dedicated human resources and technologies.

A DMS is able to give to both destinations and their visitors many strategic advantages (Egger and Buhalis, 2008). Here the major advantages of a DMS found in the literature are listed:

a) Enhances the visibility of small and medium-sized tourism enterprises (SMTEs), diminishing their dependency on external intermediaries and, as a consequence, allowing them to reach higher revenues (Cooper, 2006; Ndou and Petti, 2007);

b) Fosters coordinated promotion and distribution of the whole destination, creating a higher cohesion among various stakeholders that share the same marketing and eCommerce platform (Estevao et al., 2014). They not only provide information about various elements of the destination but they also allow reservations (Buhalis, 2003);
c) Gives DMOs and their members (usually destination-based companies) access to privileged information and tools usually available for DMS affiliate members (image bank, destination’s facts and figures, legal documentation, data) (Estevao et al., 2014);
d) Contributes to a higher cohesion inside the destination and, consequently, to a more coordinated promotion of the destination. DMSs usually act as hubs connecting internal resources of the destinations with external ones (Inversini and Cantoni, 2009);
e) Increases tourism revenues through providing online booking facilities (Abdal-Fadeel, 2011).
f) Enhances DMOs ability to assist the visitors’ experience before, during and after the visit (Gretzel et al., 2006)
g) Can assist big destinations (entire countries for instance) in diversifying their supply and their territorial distribution, and communicating with a more autonomous and mature demand that does not usually search for pre-assembled package tours from traditional intermediaries (Estevao et al., 2014).
h) Supports policy and strategy formulation by providing collaborative areas where staff can work together in developing and getting approval (UNTACD 2005).
i) On the consumer side, can optimize the position of DMOs as holders of significant content and brand equity, differentiating themselves from direct competitors. They can add value to consumers, positioning the destination brand as the reference point for travel research and booking. In practice, this means providing unbiased, comprehensive, high quality information to increase consumer confidence, a safe and secure transaction environment, exclusivity based on price, local knowledge, customized packages and offers (Ciccalè, 2013).
j) On the supply side, gives DMOs an opportunity to add value in the form of incremental support, services and third party affiliations from one source that the supplier would otherwise not easily get access to (Ciccalè, 2013). For instance, some of these are developing a central resource on the complete range of products within the destination, providing the ability to conduct secure, automated transactions and the provision of a suite of business services and distribution choices.

Abdal-Fadeel (2011) and Petti (2009) identified the main success factors for a DMS:

- **Quality and comprehensive content and information**: the collection of timely, relevant, updated and comprehensive information about destination products and services, is very important for DMS effectiveness (Abdal-Fadeel, 2011). All the potential information that could be of interest for a
customer and services must be always present, well organized and updated (Petti, 2009);

- **Online booking facilities**: The management of information as well as the reservation/booking functions are considered the most significant features of DMS (Collins and Buhalis 2003);

- **Strong customer oriented approach**: it is important to take into account the needs of all the customer segments visiting the destination. After the segmentation, customer needs have to be identified and fulfilled by means of specific products (Petti, 2009);

- **Public and private sector efficient partnership and cooperation**: it is critical to determine the degree of the public and private sectors involvement in Destination Management Systems development (Abdal-Fadeel, 2011). This is due to the fact that the public sector is concerned with the overall destination development, whereas the private sector is more concerned with immediate financial returns (UNCTAD 2005). The effectiveness of the DMS can be reached only finding the right balance.

- **Integration and interoperability**: It is necessary to grant the access and the aggregation for data, information and services coming from dispersed and different sources (Petti, 2009);

- **Adequate funding**: Financial problems in DMS implementation could rise on DMO’s level or at the level of system users participating in the project. With regard to the first level, DMOs face financial challenges in finding the suitable funding for developing DMS and for training programs for staff and users of tourism businesses. Brown (2004) stated that public money generally provides the funding in the beginning of DMS development, and then this funding is decreased when the system is operational. Adequate funding needs to be sustained in different stages of DMS development (Collins and Buhalis 2003). Moreover, destination management organizations need to give the private sector the motivation to participate, which consists of immediate financial gains through booking facilities (Brown 2004; Belbaly et al. 2004; UNCTAD 2005).

  In fact, the second level of financial barriers influences SMTE participation. Some researchers indicated that poor financial resources is one of the reasons that impedes SMTEs from participation in DMS, since adopting new IT applications is costly.

- **Appropriate stakeholders’ IT infrastructure, knowledge and skills**: “Many researchers agreed on the influence of SMTE and DMO characteristics on the effectiveness of DMS adoption and implementation. It has been indicated reluctance to use ICT, lack of IT knowledge and appropriate training, poor strategic management and marketing skills, short-term operational focus of managers and lack of resources are among factors that influence the effectiveness of DMS” (Abdal-Fadeel, 2011).
An interesting example of DMS is that developed by the Spanish government (www.spain.info). The website is the most visible element and here the potential visitor is offered the opportunity of planning, booking and receiving information about his tourist experience in the destination. In addition, there is a dedicated access for tourism or DMO operators, to access and manage the contents related to products and services they offer. The offer can be personalized according to the type of customer and a lot of information is provided about a great number of tourism attractions, organized following a thematic criterion (culture, sports,…). The presence of search engines allows searching for the specific information, product or service that can then be immediately acquired online. Among the many other functionalities of this DMS, the Spanish website offers the possibility to download brochures, participate in virtual tours and access numerous more specific links for website of service providers or more specific DMOs. This example lets us understand that a DMS is directed not only to tourist, but also to all the operators and intermediaries present in the destination market. It is fundamental to involve and support them in this project, since their participation allows to reach the potential visitor with an integrated and updated offer, and consequently adds value to the whole supply system.

Although DMS are considered the most advanced web platforms available to DMOs, evidence clearly shows that, since their inception in the mid-‘90s, only a few destinations were able to successfully develop and implement such systems (Alford and Clarke, 2009). This can be due to tourism destination configurations and stakeholders attitudes rather than to mere technological issues (Ndou and Petti, 2007). Moreover, not all DMS have the same system architecture, as DMOs’ levels of technological or strategical development tend to differ from a destination to another (Estevao et al., 2014). Buhalis and Jun (2011) and Abdal-Fadeel, (2011) identified some reasons that could explain why several planned DMSs have failed in their development phase:

- Inadequate financial support: the financial support for a DMS project must be provided first in the planning and development phase and then, continuously, in the running phase, when the system works, in order to support its expansion and adjournments (Abdal-Fadeel, 2011). Often just the initial investment is considered and the DMS survival is then put at risk;
- Lack of long term vision of the developers: a clear final objective, a strategic long term plan, top management commitment and a regular evaluation strategy that considers different views of stakeholders, are crucial for the effectiveness of DMSs (Abdal-Fadeel, 2011);
- Lack of understanding of industry mechanisms and the interest groups: the coordination of all the activities and services performed by destination
stakeholders is of paramount importance for the performance of the destination as a whole and for customer satisfaction (Buhalis and Molinaroli, 2003). Thus if these mechanisms are not fully understood when developing a DMS this will make it difficult for it to be successful;

- Expensive and inappropriate technological solutions: the key for DMS success is stakeholder’s accessibility to the system (Estevao et al., 2014). If the DMS is built with too advanced and expensive technologies, this will constitute a barrier for stakeholders participation and an obstacle on the way to DMS success;

- IT leading rather following tourism marketing: in implementing the ICTs such as DMSs, destinations must remember that understanding satisfying tourist needs is the priority (Buhalis and Jun, 2011). Consequently, DMSs must assist the tourist in his travel experience and not try to force him to behave in a specific way for destination interests. This will make him switch to another platform best suited to its needs, having a negative impact on DMS success;

- Lack of IT expertise among tourism professionals: since a DMS provides all the actors in the destination with innovative Information and Communication Technologies, many of the players could lack the skills and the knowledge to master the system functionalities (Abdal-Fadeel, 2011), reducing the DMS potential benefits and increasing the risk of its failure;

This fact has discouraged DMO managers to further invest in the development of suitable systems (Buhalis, 1997). On the other hand, most destinations around the world have recognised the value of the DMS concept and have some type of system offering information about their region (Buhalis and Jun, 2011).

1.3.5.4 Big Data Analysis Systems

The digitalization of economy, transports, personal relationships, communication and media occurred in the last years opened the road to a great number of additional data sources (TDlab, 2014). This phenomenon was called “big data”, since these technological advancements had as a result the availability of an enormous amount of data about the behaviour in systems like tourism. The concept of “big data” refers in fact to the massive accumulation of information and to the systems that manipulate these large datasets (Marine-Roig and Clavé, 2015). All the additional data sources in tourism market provide new opportunities to measure, segment, comprehend and forecast, but also to design and verify commercial and promotional campaigns. Although tourism is not the first field to develop this opportunity, it is for sure one of the sectors where the potential benefits coming from big data analysis is higher (TDlab, 2014). In the
span of few years hundreds of big data analysis applications emerged in tourism market in fields like:

- Airlines, hospitality;
- Transportation companies;
- Online Travel Agencies;
- Review and booking websites;
- Aggregators of advertisement and marketing;
- Cities and regions.

These systems manipulating big data are a type of ICT that is becoming strategic in tourism. The big data analysis process is called “big data analytics”. Hu et al. (2014) define it on the basis of the software, hardware, and aim of analysis: “Big data analytics is the process of using analysis algorithms running on powerful supporting platforms to uncover potentials concealed in big data, such as hidden patterns or unknown correlations”. They also divided the analysis process into two different phases: streaming and batch (Hu et al., 2014 as cited in Marine-Roig and Clavé, 2015):

1. Streaming processing is characterized by data being analysed as it arrives because near-real-time results are needed, as for instance in the case of online applications, and only a small part of the stream is temporarily stored in the memory.
2. Batch processing is characterized by data first being stored, and then divided into chunks that are processed in parallel in a distributed system;

Finally, the two types of results are aggregated.

Gandomi and Haider (2015) highlighted the difference between traditional amounts of data and big data developing the criterion of the three Vs:

- Volume;
- Variety;
- Velocity.

A group of data must have these three characteristics to be considered big data. The two authors also claim that traditional data-management systems are insufficient to manage big data. This fact gave rise to big data technologies, applications capable of creating real-time intelligence from high volumes of various data.

Oliver et al. (2014) describe the objectives with which a company should decide to analyse big data instead of using the traditional methodologies. In fact, big data provide the advantages reported in Table 16.
Advantages deriving from Big Data Analysis

<table>
<thead>
<tr>
<th>Reliability</th>
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</thead>
<tbody>
<tr>
<td>Representativeness</td>
</tr>
<tr>
<td>Information detail and segmentation capacity</td>
</tr>
<tr>
<td>Possibility to interpret and mix data with other current or future sources</td>
</tr>
<tr>
<td>New information flows</td>
</tr>
<tr>
<td>Possibility of new business opportunities</td>
</tr>
</tbody>
</table>

Table 16. Advantages deriving from Big Data Analysis (Source: Oliver et al., 2014)

According to Wang et al. (2013), the role of using big data in tourism destinations is to support business decision-making and optimal resource allocation, and they can assist in the discovery of new insights, in ways that affect markets and organizations. Consequently big data provides an enormous opportunity for DMOs and destination stakeholders for better understanding tourist needs and improving the way in which they satisfy them with personalized offers. An interesting example of how big data analytics can benefit destinations is offered by the service provided by Sojern (www.sojern.com) a data driven travel-advertising platform. This company analyses past bookings data to anticipate the future traveller preferences and targets specific segments of new potential customers in real time, with a high probability to be interested in the offer and thus providing a very high conversion probability. Then they show a destination ad to the customer selected through data analysis, which will be involved by the personalized offer and generate a conversion. The system continuously learns and is therefore able to increase the forecasting precision. Sojern is then a perfect exemplification of the role of big data in the pre-trip phase and provides also an example of a company using both streaming processing (for the identification of the customer type) and batch processing (for the creation of customer segments).

Moreover, there are certain cases in which the analysis of the data collected could be useful to influence positively tourists’ experience at destination, in real time. For instance, the detection of a problem on a certain line of the destination underground could be detected by the data analysis system and immediately let the visitor know (through the destination app, for instance) about the accident and propose an alternative solution to reach the places of interest.

TDlab (2014) proposed an interesting classification about the role big data could have in tourism market. It is reported in Table 17. They proposed five main categories under which these roles could be divided.
<table>
<thead>
<tr>
<th>Category</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>Making tourism phenomena like arrivals and flow clearer, at local and national levels simultaneously</td>
</tr>
<tr>
<td></td>
<td>Allowing the study of the tourist not only by the physical point of view but also from the emotional</td>
</tr>
<tr>
<td></td>
<td>Making results available in real time</td>
</tr>
<tr>
<td></td>
<td>Allowing the measurability at acceptable costs of cause-effect relationships</td>
</tr>
<tr>
<td>Personalization</td>
<td>Introducing the possibility to segment tourists according to their behaviour</td>
</tr>
<tr>
<td></td>
<td>Personalizing and modifying continuously offers and costs on the basis of the single customer</td>
</tr>
<tr>
<td></td>
<td>Allowing to target and measure persuasion strategies on the basis of specific customer segments</td>
</tr>
<tr>
<td>Automation</td>
<td>Some services can be automatically provided in a personalized way</td>
</tr>
<tr>
<td>Prevision</td>
<td>Making possible the prevision of tourism flows with a good precision on short-medium term</td>
</tr>
<tr>
<td></td>
<td>Linking digital activities with physical activities on the territory</td>
</tr>
<tr>
<td>Innovation</td>
<td>Providing new opportunities to create itineraries and services</td>
</tr>
<tr>
<td></td>
<td>Helping the personalization of the enterprises</td>
</tr>
<tr>
<td></td>
<td>Allowing to introduce new activities, test the results and correct the actions</td>
</tr>
<tr>
<td></td>
<td>Creating opportunities for new start-ups and consequently new workplaces</td>
</tr>
</tbody>
</table>

*Table 17. Role of big data in a destination. Elaborated from TDlab (2014)*

Fuchs et al. (2014), in their study about the use of big data analytics in a Swedish destination, developed a knowledge destination framework architecture that has two separated levels:

1. A knowledge creation layer (data sources, data extraction, data warehousing, and knowledge generation through data mining).
2. A knowledge application layer, where there is a destination management information system providing stakeholders with instant access to Business Intelligence-based analysis results.

### 1.3.5.5 Mobile Application (app)

Over the last years, a type of ICT that gained a lot of attention and success is the mobile application (app). An app is defined as a “*software optimized to perform a specific function for a particular type of smartphone*” (Polliotto, 2014). Some
apps are already installed on the smartphone while others, and this is the case of tourism apps, can be downloaded from an online store, for free or after an electronic payment.

Inside the travel sector, apps are very diffused, up to the point that tourism is the seventh most downloaded category in term of apps (Barteaux, 2015). These apps are generally of two types:

- Apps related to a range of services offered in a specific destinations;
- Apps offering a particular service needed by tourists during their travel across the world (Polliotto, 2014).

Kennedy-Eden and Gretzel (2012) proposed two different classifications for mobile tourism. The first uses a customer-centric perspective to classify apps according to the services provided. They identified seven types of service:

1. Navigation: These apps help visitors find their way around the destination. They are supported by technologies like Global Positioning System (GPS), augmented reality, and way finding;
2. Social: apps with a sharing, collaboration, communication or social component. The most diffused are social media applications where people share their photos, thoughts, and recommendations. The social category also includes methods of communication, like texting and skype;
3. Mobile Marketing: used to receive marketing messages, such as text messages for coupons, contests, etc.;
4. Security/Emergency: apps including emergency locator services, health monitoring, weather alerts, etc.;
5. Transactional: apps involving a transaction of some sort, although there does not have to be a money exchange (auctions, financial/banking, tickets/reservations, and shopping);
6. Entertainment: app with options like games, movies, e-readers, etc. that could be used while on vacation and participating in tourism events;
7. Information: apps that give guests a variety of information related to tourism.

The second classification uses interactivity level as the classification criterion and therefore adopts an interactional perspective. This classification involves seven main areas:

1. Personal preferences: apps containing a broad range of personal preferences that can be set, as for instance medical, personal taste, purchase, and activity subcategories defined by visitor preferences;
2. Location: the apps in the location sensitive category give the user the opportunity to interact with the app by changing location information. These apps sometimes have a GPS component to them. The areas within this classification are augmented reality, marketing alerts, radio frequency identification (RFID) tagging, and mapping;
3. Security: these apps offer control of who can see user’s information. The common areas of security are control of the data retrieval and access to personal information;

4. Through the web: apps that offer interaction but are limited or not changeable through the actual mobile device app, but require the user to interact through a webpage;

5. Content addition: apps changing as new content is added to them. These types of apps include travel logs, blogs, social media, and photo sharing,

6. Applications remaining the same for everyone: apps that offer no interaction with users.

The objective of the development of a tourism app is to provide tourists with a dedicated instrument facilitating them in the obtainment of services and information (Polliotto, 2014).

The role of tourism apps in a trip depends greatly upon the type of mobile application that is being considered. Generally however, the role played by apps concentrates in the ‘during’ phase.

- **Pre-trip:** when planning its trip the tourist usually uses other types of ICTs. However some Apps providing information, booking platforms or reviews are welcomed to start exploring and having an idea about what to do once in the destination. Over 50% of people are likely to download travel apps related to their vacation before they go (TEXT100, 2014). In some cases, the presence of good and useful applications could be a qualifier during the choice of the destination.

- **During the trip:** this is the key phase for an app. When visitors are at destination, they continuously need assistance when facing problems. Providing timely and correct information to solve them is the main role of mobile applications.

<table>
<thead>
<tr>
<th>Apps used by tourists during vacation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maps/GPS</td>
</tr>
<tr>
<td>City guide</td>
</tr>
<tr>
<td>Local weather</td>
</tr>
<tr>
<td>Restaurant finder</td>
</tr>
<tr>
<td>Public transport</td>
</tr>
<tr>
<td>Currency app</td>
</tr>
<tr>
<td>Airline app</td>
</tr>
<tr>
<td>Translation app</td>
</tr>
<tr>
<td>World clock</td>
</tr>
</tbody>
</table>

*Figure 12. Apps used by tourists while at destination ranked by the percentage of tourists downloading the specific app category (Source: TEXT100 digital index, 2014).*
The great advantage of mobile applications is that they could also have some functionalities available offline, thus providing ubiquitous assistance. On the other hand, this role makes also easy to understand that it is difficult to develop an app suiting to every type of tourist in any kind of situation. Figure 12 shows the percentage of tourists using a certain type of app while at destination. It could be very interesting for DMOs because it gives an idea of which are the main needs of tourists at destination.

- **Post-trip**: in this phase mainly reviews and opinion apps are used.

As it can be understood, the central success factor for an app is the real utility for visitors. Apps must solve visitors’ problems, be user friendly and add value to tourists’ experience, instead of having as a primary objective that of bringing money to app developers and destination actors. Thygesen (2014) selected a list of functionalities a destination app must have in order to be able to help a tourist everywhere and at every hour of the day:

- Offline map and main services;
- Travel info;
- Currency converter;
- Weather forecast;
- Wi-Fi spots map;
- Transport detailed description and real time timetable;
- City card functions.

Mobile applications utilization is growing fast in travel and tourism sector, and currently is a huge industry that generates great revenues. Moreover, with the support of the increasing number of smartphones, this business is surely going to prosper in the future (Barteaux, 2015). In fact, when booking on smartphones, travellers still rely heavily on both apps and websites. More leisure travellers book via mobile websites, while business travellers mostly book via apps. In conclusion it can be said that for a DMOs both are still key instruments (Google and Ipsos MediaCT, 2014).

<table>
<thead>
<tr>
<th>Method of booking on smartphones</th>
<th>Leisure travellers</th>
<th>Business travellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>71%</td>
<td>86%</td>
</tr>
<tr>
<td>Via website</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Via Mobile Application</td>
<td>40%</td>
<td>63%</td>
</tr>
<tr>
<td>Phone call</td>
<td>44%</td>
<td>44%</td>
</tr>
</tbody>
</table>

*Table 18. Comparison between methods of booking on smartphones, for business and leisure travellers (Source: Google and Ipsos MediaCT, 2014)*
A frequent obstacle to App development for local DMOs is the relatively high investment required to build and market a competitive Mobile Application. The destination Trentino (an Italian region) found a smart solution to this problem. They developed a Mother App for promotion, tourism assistance and marketing of the whole region and then provided the same mobile application structure of the regional app to local DMOs. In this way now in Trentino there are fourteen local Mobile Application, managed by local DMOs. This is very clever because it allows small DMOs to concentrate only on the content management, while the investment for the app development, design and implementation is faced by the region. The final effect is a capillary coverage of the territory, with specific and standard mobile applications, being the perfect instrument to support the tourist exhaustively during his stay in a local destination and at the same time allowing him to travel easily in the other different regional areas, because of the standard app design.

1.3.5.6 Destination Card

Destination cards (sometime also called the ‘tourist card’, ‘city card’, ‘city pass’, ‘tourist pass’, ‘guest card’, ‘visitor card’, or ‘welcome card’) are instruments of destination management, created to provide tourists with an integrated and convenient set of services in the destination (Sedláková et al., 2014). In fact, they allow tourists to pay reduced prices for the integrated fruition of services, by means of ad hoc convention with public and private entities (Garavaglia, 2015). They are also used as a marketing tool worldwide, by destinations of any size, with the aim of facilitating tourists in the production and consumption of their experience and therefore for increasing the usage of tourist services at a destination (Zoltan and Masiero, 2012). Steinbach (2003) defines destination cards as “territorial offers that, by binding different services and by guaranteeing certain discounts, contribute to the better promotion of regional and local tourism products”. They often provide excellent value for money because they may offer not only the entry (without queuing) to main attractions, but also the use of public transport (sometimes including transfers to and from the airport), plus a range of discounts in shops, restaurants, and entertainment venues at the destination. Generally, each card has its own website outlining how the card works, what the benefits are to visitors, a list of the attractions included, and the option to book online (Angeloni, 2015). For a better understanding of the related benefits, the destination card is generally accompanied by a free comprehensive guidebook with details of each operator participating in the scheme. Although tourist cards are distributed through different channels (including travel agents, tour operators, and local tourist offices), the most popular distribution medium is direct sale (Angeloni, 2015).
Zoltan and Masiero (2012), distinguish between destination cards and regional destination cards. In most cases, destination cards are dedicated to cities and include public transport and major attractions, while regional destination cards have more complex structures, especially when the region accommodates heterogeneous types of tourists, consuming different services. Destination cards can be also classified according to the technology behind their utilization:

- **Physical cards:** simple cards on which details are manually written, without any technological support;
- **Smart cards:** products integrated with RFID or NFC technologies, QR codes, electronic chips or magnetic strip, allowing the traceability of the tourist during his card utilization (Angeloni, 2015). These cards, together with the information system that supports them, offer a range of potentialities, like customer behaviour analysis, information memorization, payment, data collection and service personalization;
- **Virtual cards:** products functioning as a complete system through a mobile app, allowing tourists to search information, find attractions and buy services online concurrently simply through their smartphones (Garavaglia, 2015).

Destination cards are commonly issued by DMOs in collaboration with tourism stakeholders at the destination (Zoltan and Masiero, 2012). They are in fact an optimal destination management instrument, since they benefit guests, partners and the destination as a whole (Gessl, 2010).

A great number of examples of destination cards are present worldwide, differing in the mode of usage, the type of offer, the period of validity and the price. A classification of the types of tourist card available in Italy has been proposed by Garavaglia (2015):

1) **Discount Card:** it allows to obtain advantages in a fixed group of associated facilities (from restaurants to car-hire), where tourists can get a discount on goods or services purchased.
2) **Thematic card:** Product allowing tourists to access a certain number of attractions (museums, monuments, theme parks, etc.) at an economically advantageous condition.
3) **Thematic + discount card:** Tool combining the features of the two previous products and allowing the access to those services in an integrated mode.
4) **Thematic + Transport Card:** Product that, as well as allowing access to certain attractions (museums, monuments, theme parks, etc.) Under economically more advantageous to reach them using the public transportation by paying a discounted ticket.
5) **All-inclusive card** (Thematic+ Transport + Discounts card): It provides the highest level of integration, combining all the functionality of the previous points in a single card.

Sedláková et al. (2014) listed instead a number of drivers according to which a general destination card can be classified. In addition to its territorial application, tourist cards differ in:

- Period of validity (year-round, seasonal, summer, winter, one-day, multi-day);
- Area of validity (City, region, etc.);
- Entity of discounts (a percentage of the price or free entrance);
- Possibility of repeated entries into specific attractions;
- Transferability to other people;
- Price range;
- Number of products variants offered (baby card, card for adults, family card);
- Number of attractions and services included;
- Promotion method;
- Distribution method;
- Way of payment (cash, bank transfer, etc.).

A significant difference exists between city and regional tourist cards. In fact, the former consists generally of discounts on the admission fee to cultural, natural and historical attractions located in the city or in its vicinity, complemented by a range of services like food, events and public transport (Sedláková et al., 2014). These advantages are usually limited to a short period of time (1-5 days). Instead, regional tourist cards offer mainly special discount for sports, attractions and transportation and their duration is longer (some months to a year).

For what concerns the objectives behind destination cards development, different authors proposed various objectives that can be pursued when developing a destination card. They are listed in the table below.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>To add value to the experience of visitors;</td>
<td>Pechlaner and Zehrer (2005)</td>
</tr>
<tr>
<td>To increase the usage of tourism products and services in the region;</td>
<td></td>
</tr>
<tr>
<td>To valorise minor, less visited attractions;</td>
<td></td>
</tr>
<tr>
<td>To redistribute tourist flows from high to low season;</td>
<td></td>
</tr>
<tr>
<td>To improve the organization of the tourism experience;</td>
<td></td>
</tr>
<tr>
<td>To strengthen the perception of the destination brand;</td>
<td></td>
</tr>
</tbody>
</table>
To promote the region: as a destination card is an integrated marketing product, it increases tourists’ awareness of the attractions and activities in the region;

To monitor the tourist experience: the microchip used in smart cards can collect different tourist data, such as the way of moving around in the region, the services used and the expenditure.

To increase the length of stay of tourists, through the higher awareness of activities comprised in the cards, as well as through cheaper card fees for longer stay that can lead to extension of stay;

To increase tourist expenditure in the region; Zoltan and Masiero (2012)

To increase the use of public transport and therefore reduce the pollution from private transport use, as in most cases unlimited usage of public transport is included during the validity of destination cards;

To reach new segments of visitors through more targeted marketing; Gessl (2010)

To respond to a decline in tourist arrivals. Zoltan and McKercher (2015)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>To promote the region: as a destination card is an integrated marketing</td>
<td>Zoltan and Masiero (2012)</td>
</tr>
<tr>
<td>product, it increases tourists’ awareness of the attractions and</td>
<td></td>
</tr>
<tr>
<td>activities in the region;</td>
<td></td>
</tr>
<tr>
<td>To monitor the tourist experience: the microchip used in smart cards</td>
<td></td>
</tr>
<tr>
<td>can collect different tourist data, such as the way of moving around</td>
<td></td>
</tr>
<tr>
<td>in the region, the services used and the expenditure.</td>
<td></td>
</tr>
<tr>
<td>To increase the length of stay of tourists, through the higher</td>
<td></td>
</tr>
<tr>
<td>awareness of activities comprised in the cards, as well as through</td>
<td></td>
</tr>
<tr>
<td>cheaper card fees for longer stay that can lead to extension of stay;</td>
<td></td>
</tr>
<tr>
<td>To increase tourist expenditure in the region;</td>
<td></td>
</tr>
<tr>
<td>To increase the use of public transport and therefore reduce the</td>
<td></td>
</tr>
<tr>
<td>pollution from private transport use, as in most cases unlimited usage</td>
<td></td>
</tr>
<tr>
<td>of public transport is included during the validity of destination</td>
<td></td>
</tr>
<tr>
<td>cards;</td>
<td></td>
</tr>
<tr>
<td>To reach new segments of visitors through more targeted marketing;</td>
<td>Gessl (2010)</td>
</tr>
<tr>
<td>To respond to a decline in tourist arrivals.</td>
<td>Zoltan and McKercher (2015)</td>
</tr>
</tbody>
</table>

Table 19. Multiplicity of objectives achievable through destination cards.

Thinking about the role of destination cards in the different phases of the trip, it is evident that the most important phase for this type of ICT is during the trip. However, the card could have roles also before the trip phase, especially if the information about it is well organized and promoted, for instance through the destination website. The roles of destination cards could be:

- **Pre-trip**: when planning its trip the tourist welcomes solutions like those proposed by tourist cards, especially if he is not expert about the destination (Zoltan and Masiero, 2012). Destination cards packages or vouchers can be delivered in advance and usually contain a guidebook to support trip planning. Through the destination card section of the website tourists can extract precious information, start to have an idea of the most interesting sites, discover and decide to visit additional attractions and even decide to extend their stay to better exploit destinations’ potential.

- **During the trip**: During the tourist visit at destination, the card plays its central role. It enables visitors to enjoy an integrated and organised access to a great number of attractions and services, freeing them of the concern of buying tickets and often to skip the lines, giving them the possibility to concentrate on the experience and live it. It also helps DMOs to monitor tourist experience and consequently to improve their service level (Pechlaner and Zehrer, 2005).
• **Post-trip:** In case of a virtual tourist card, it could be possible to prologue the experience of the tourist, also through a clever utilization of social media. So the “experiential path” of tourists continues also after the end of their trip, because they will be able to remember the emotion they felt at destination and share them with a broad community (Garavaglia, 2015).

The study conducted by Zoltan and Masiero (2012) allowed them to understand which are the most important characteristics to take into account when designing a destination card by analysing when tourist buy a destination card and what they need to find included in it to be satisfied. The study involved 586 tourists visiting Ticino, Switzerland, in 2010 and provided insights very useful for DMOs. Specifically, it showed that the type of tourist coming to the destination the first time, wishing to have a ‘Safe getaway’ from home, to enjoy nature, attractions and relaxation, is interested in novelties, consumes cultural and natural activities and has a lower-middle range holiday budget, can be an ideal target of a destination card campaign. Among the rest, this implies, most importantly, that cards need to be based on natural and cultural attractions, whereas entertainment, sport and social activities can be only additional benefits in a card, not to be used to market the card. Another interesting aspect they underlined is that the inclusion of social activities could eventually lead to building up destination loyalty, obviously only in case of positive satisfaction of tourists. Moreover, as the most valued card requirement is information on opening times, organization and novelties at the destination, this aspect of cards needs to be emphasised in their promotion. With this purpose, when a destination card is sold, it has to be accompanied with brochures or freely downloadable mobile applications, containing descriptions of the attractions included in the card. They concluded that tourists would most probably appreciate a destination card if it meets four crucial requirements:

a) concerns only activities in which the tourist is interested (customisation);

b) allows the tourist to obtain generous discounts (monetary aspect);

c) helps the tourist to save time (timesaving);

d) provides the tourist with new ideas on what to visit (information on novelty).

Finally, Gessl (2010) underlines that the most important success factor for a destination card is an organisational model adapted to the destination’s needs and main objectives. Copying another region’s model without modifications, buying software and hardware before establishing an organisational model and low orientation towards the clients’ needs are all elements that will bring to failure the implementation of the card. He proposes also a list of ten steps to be observed for introducing a destination card successfully in a destination.
1) Analysis of the actual situation and definition of the objectives of a future destination card;
2) Analysis of possible attractions to be included;
3) Coordination with the most important partners;
4) Design of an organisational model for the card;
5) Calculation of the model;
6) Development of a workflow/Definition of the card type (RFID, virtual, barcode…);
7) Definition of the technical framework;
8) Installation of Hardware and Software;
9) Trial period;
10) Introduction to the market/public.

In conclusion, destination cards demonstrated to be a very powerful application of ICTs in a destination, able to bring a great amount of benefits. However, there is a lot of improvement potential in the utilization of this product in tourism market.
1.4 Destination success

Since the objective of this work is to provide some insights about how ICTs influence destination success, it is fundamental to clarify the meaning of the word “success” when related to the field of destination management. The following paragraphs show the results of a literature review about the concept of destination success in tourism literature, the different ways in which it was defined and measured, the existence of a relationship with ICTs implementation and the its link with DMO success.

1.4.1 Perspectives and definition

Success is a widely used concept inside economic field of study. Even in tourism literature, destination success is not always considered under the same perspective. First, Ritchie and Crouch (2000) argue that a good evaluation of destination success has to be addressed through input and output variables, comparative and competitive advantages, and measured from the viewpoints of all stakeholders involved in the tourism system.

Moreover, Volgger and Pechlaner (2014) identified three broad groups in which it is possible to classify the most important perspectives under which success in tourism was studied:

- The first group is characterized by concept of success evaluated exclusively on financial perspective;
- The second group adopts a slightly broader notion of success and considers also non-financial operational perspective such as the quality of tourism products;
- The third group shows the broadest approach, which analyses organizational effectiveness, including conflicting goals and diverging stakeholder views (Kaplan and Norton, 1992).

To better understand the various possible perspectives under which destination success can be considered, it could be useful to analyse some of the most common indicators used to measure it.

On the quantitative side, for instance, Archer and Fletcher (1996) and Kozak and Rimmington (1999) proposed the utilization of visitor numbers and expenditure. Quantitative performance of a destination can be measured by looking at such
data as tourist arrivals and tourism incomes (hard data). Another possibility is to calculate tourism expenditure growth and employment growth (Deskins and Seevers, 2011). These data are relatively easy to measure and have a very low degree of subjectivity, facts that make them suitable for an objective comparison between destinations. However, there is also a need to take into account the relative qualitative aspects of destination competitiveness (soft data), as these ultimately drive quantitative performance (Kozak and Rimmington, 1999). Moreover, the increase in the number of arrivals and expenditure is sometimes not directly followed by a positive impact on local economies (Petti, 2009).

Following the line of reasoning that a destination main concern is fulfilling customer expectations, Ritchie and Crouch (2003) suggest the suitability of guest satisfaction as a criterion. However, the success of a destination in terms of visitor satisfaction presents a challenging parameter to measure objectively. Moreover it is dependent on several self-related components and it is often difficult to comprehend the relationship among them (Kiráľová and Pavlíčeka, 2015).

Instead, on the supply side, it has been suggested that destination success can be observed using the efficient and sustainable use of resources as indicator (Mihalic, 2000). In fact, for many tourists, environmental quality is an integral part of the quality of the destination. Accordingly, maintaining a high level of overall environmental quality is important for the success of most types of tourism destinations (Mihalic, 2000). It is important to underline that here the term environment refers to the is used in a broader sense, so the scope of the quality is analysis not only the natural landscape but social and cultural environments are also considered.

Some researchers tried to approach destination success more indirectly, via the concept of destination competitiveness. According to Hassan (2000), destination competitiveness is the ability of a destination to create value-added tourism products, sustain the resource base and to ensure it has and thus maintains a superior market position relative to competitors. An analysis of Tourism Destination Competitiveness (TDC) can be found in Crouch and Ritchie (1999) and Ritchie and Crouch (2011). These authors are convinced that TDC is influenced by five main components.

1. Destination policy: planning and development composing a strategic or policy-driven framework. These activities establish the nature, scope and direction of tourism development and the expected outcomes of such a development;
2. Destination management: activities that can enhance the appeal of the core resources and attractors and strengthen the quality and effectiveness of the supporting resources;
3. Core resources and attractors: the primary elements of destination appeal and hence the key motivators for visiting a particular destination;
4. Supporting factors and resources: secondary influence factors, providing a firm foundation upon which a successful tourism industry can be established, (e.g. tourism infrastructure, political will and accessibility).

5. Situational conditions: conditions whose effect on a destination define its limit or potential (e.g. its geographical location, interdependencies on other destinations, safety and security, awareness and image).

It is interesting to notice that some aspects of the TDC framework are within the control of DMOs and some beyond their control (Ayikoru, 2015). This is important because it reminds us that some destinations have innate advantages that help them in obtaining success, independently from how they are managed. Endowed resources inherited by a destination, such as climate and scenery, are categorised as sources of comparative advantage. However, resources created by the destination, which may be the way in which endowed resources are deployed in the market, represent sources of competitive advantage (Ritchie and Crouch, 2000).

In the end, the most exhaustive definition of success in the opinion of the author was selected: A destination is considered successful when its tourism activity produces a positive impact on the performance of local economies (Petti, 2009). Here performance means, according to the UNWTO (2003):

- Improvement in prosperity (increase in wages and GDP);
- Reduction of disparity, meaning the reduction of poverty rate and of the differences between rich and poor social classes, between rural and urban areas;
- Increase in sustainability: improvement in air and water quality, reduction of wastes while occupational rate increases;
- Improvement in life quality: development of social and sanitary services, rising in the number of recreational and entertainment infrastructures, reduction of diseases and criminality.

1.4.2 Do ICTs automatically imply destination success?

ICTs have been recognised to be determinants of cost advantages and product-service differentiation (Porter, 2001; Buhalis and O'Connor, 2005), and their application in a destination improves coordination and control of activities and more effective decision-making (Porter, 2001). Moreover, ICTs are key contributors to the globalization of the tourism sector, allowing for expanded interconnection and interactivity with interest groups (Buhalis and Law, 2008). These factors, combined with the availability of databases, are key determinants of the success of tourist destinations. Consequently, it can be argued that the lack
of innovation and investments in new technologies increases the probability of failure for a good destination development.

However, it must be clear that it is not enough to introduce ICTs and invest in their constant updating to automatically obtain success in a destination. As stated by Berne et al. (2015) “ICTs alone do not improve business performance”. Thus, the introduction of ICTs is a necessary but not sufficient condition for destination success (Petti, 2009). Great investments in ICTs, as for instance implementing a Destination Management System, is useless without a strong organization and an expert management team, both factors allowing the exploitation of the numerous functions and benefits of ICTs, that would otherwise result critical. ICTs are not the goal but a means through which success can be obtained. The innovativeness of the technologies at destination disposal is not enough. A great contribution to success is determined also by the people managing them and by how they do it. Without optimal management, professional and organizational capabilities ICTs will fail to produce competitive benefits. Another determinant factor for success with ICTs is the creation of a local environment in which the collaboration between public and private sectors happens easily (Petti 2009). This author proposes also a chronological order for the implementation of these revolutions in a destination:

1. Competences creation;
2. Implementation and diffusion of ICTs;
3. Coordination and integration of the tourism system, especially at a local level.

In his opinion the competitiveness (and thus the success) of a tourism destination is strongly linked with the level of integration reached inside the destination.

In conclusion, it can be demonstrated that technology itself does not guarantee any success. Success requires also suitable organizational structures, new competences, coordination and networking capabilities together with a redefinition of public and private sector roles (Petti, 2009; Volgger and Pechlaner, 2014).

1.4.3 DMO success and destination success

In the literature, evidence can be found that not only destination success was explored, but also the success of Destination Management Organizations and the factors influencing it. For instance, Manente and Minghetti (2006) argue that the success of any DMO is highly dependent on ensuring that the different stakeholders’ interests and perceptions of a destination are harmonised in order to be able to achieve a joint goal. Instead, Presenza et al. (2005) identify two core
factors to recognise successful DMOs: the first, marketing capability, having to do with the external performance, and the second, coordinating destination stakeholders, related to the internal performance of DMOs. As an indicator of DMO success, they propose “the quality of visitor experience”. Moreover, also leadership capabilities are an important boundary condition to act in the network context of destinations (Gretzel et al., 2006).

Two interesting studies brought on by Bornhorst et al. (2010) and Volgger and Pechlaner (2014) explored the relationship existing between destination success and DMO success.

Bornhost et al. (2010), after a qualitative analysis, were able to conclude that “community relations, marketing, and economic indicators were deemed to be related to both the success of the DMO and the destination”. Consequently, the DMO must be effective in communications and in leveraging positive communications from other stakeholders in the press and in the local tourism industry. Further, Marketing activities are another very visible sign of the efforts of the DMO and are readily translated by all stakeholders (both internal and external to the destination) into perceptions about the destination and therefore success. Finally, the highly visible and often quoted economic indicators (arrivals in the destination, average expenditure, etc.) are seen as evidence of success for both the DMO and the destination (Bornhost et al., 2010).

Later on, Volgger and Pechlaner (2014) demonstrate the existence of a positive correlation between DMO success and destination success, by means of a statistical study conducted in South Tirol, Austria and Switzerland. Moreover, analysing the data collected, they were able to claim that “networking capability of a DMO is influential on DMO success via increasing its acceptance and power within a destination”. The consequence is that a higher networking capability significantly enhances both power and acceptance of a DMO among its stakeholders. Thus, higher DMO acceptance leads to significantly higher perceived DMO success (Volgger and Pechlaner, 2014).
2 METHODOLOGY

This section exposes the methodology for the analysis and the final application of this work. The analysis was conducted on two particular types of ICTs: Destination Cards and DMO websites including DMS functionalities. The aim of this analysis was to understand the level of innovativeness reached by destinations in respect to the utilization of these types of ICTs. The application was brought on to show how an ad hoc ICTs implementation could benefit a destination in a real case.

With this purpose, a first sample of about a hundred destinations of all types was selected (city, regions, countries and itineraries) and analysed through two “light” analysis schemes, one for destination cards and one for their websites. The objectives of this first step were to gain awareness and insights about the state of the art of ICTs usage in destinations and to select two smaller sample of about twenty best practices to be analysed more in depth (a sample for destination cards and the other for destination websites).

After that, the two samples were identified and analysed through two “detailed” analysis schemes, with the aim of gaining a deeper knowledge about the innovative way in which destinations use the specific ICT. The objective samples for studying these two particular types of ICTs consisted of a number of about twenty destinations using the ICTs in question, partially Italian and partially international, equally distributed according to the different types of destinations (cities, regions, countries, and itineraries).

Consequently, the analysis resulted in a number of case studies that provided examples of innovative ways in which destinations can leverage on ICTs to become more competitive and to improve their destination management effectiveness. Moreover, it was possible to extract some data, organized in figures, which allowed having an enlightening overview about the state of the art of the two types ICTs, together with the business model and the functionalities behind them.

The following paragraphs report the details about the choice of the ICTs types, the selection of the final sample of the two types of ICTs and the choice of the real case for the application.
2.1 ICTs selection

There is a great number of ICTs that can be implemented by destinations and that can be useful for destinations to positively influence their success. Among them, for this work two particular types of ICTs were selected and are reported here, with the reasons that make them particularly important and worth to be studied:

- **Official destination websites and DMS**: since the majority of tourists now use the web all along their tourist experience, to choose their destination, plan their holidays, make their bookings and service purchases, and share their experiences (Fernández-Cavia et al., 2014), it is fundamental for DMOs to be present on the internet. This is the reason why official destination websites were studied. They are the visit card of a destination, strongly able to influence visitors’ attitude toward a destination and therefore its success. Moreover, for those destinations having a DMS at their disposal, the websites are also the interface between tourists, enterprises and DMOs. Consequently, a particular attention was devoted to DMS functionalities available on the website.

- **Destination cards**: they are an important tool, able to strongly support and influence tourist experience in destination, while providing the possibility for DMOs to study visitors’ behaviour. Moreover, they can act as a leverage able to increase the number of arrivals and the duration of stay. The latest evolution of tourist cards (Virtual tourist cards) are strongly intertwined with ICTs and the potential influence on destination success is very high.
2.2 Official destination websites and DMS analysis

2.2.1 Destination websites selection

The starting sample for destination website analysis was selected by means of a web analysis, including DMO websites of destinations of any type (cities, regions, countries and itineraries) both Italian and international. In the sample, some of the most important Italian cities were included, together with the totality of Italian regions and some of the most innovative international destination websites. The table below reports the list of the eighty destinations included in the initial sample, divided by destination type.

<table>
<thead>
<tr>
<th>Cities</th>
<th>Regions</th>
<th>Countries</th>
<th>Itineraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian</td>
<td>Italian</td>
<td>Italy (<a href="http://www.italia.it/en/home.html">http://www.italia.it/en/home.html</a>)</td>
<td>Via Francigena (<a href="http://www.viefrancigena.org">http://www.viefrancigena.org</a>)</td>
</tr>
<tr>
<td>destinations</td>
<td>destinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venezia</td>
<td>Abruzzo</td>
<td>Australia (<a href="http://www.australia.com/it-it">http://www.australia.com/it-it</a>)</td>
<td></td>
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<tr>
<td>(<a href="http://www.turismovenezia.it/">http://www.turismovenezia.it/</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milano</td>
<td>Alto Adige</td>
<td>France (<a href="http://www.france.com/">http://www.france.com/</a>)</td>
<td>Cammino di Agostino (<a href="http://www.camminodiagnostoino.it/">http://www.camminodiagnostoino.it/</a>)</td>
</tr>
<tr>
<td>(<a href="http://www.turismo.milano.it/wps/portal/tur/it">http://www.turismo.milano.it/wps/portal/tur/it</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(<a href="http://www.firenzeturismo.it/it/">http://www.firenzeturismo.it/it/</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Napoli</td>
<td>Calabria</td>
<td>Ireland (<a href="http://www.ireland.com/it-it">http://www.ireland.com/it-it</a>)</td>
<td>Italia coast to coast (<a href="http://www.italiacoast2coast.it/">http://www.italiacoast2coast.it/</a>)</td>
</tr>
<tr>
<td>(<a href="http://www.turismoroma.it/">http://www.turismoroma.it/</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roma</td>
<td>Campania</td>
<td>Spain (<a href="http://www.spain.info/">http://www.spain.info/</a>)</td>
<td>La via degli Dei (<a href="http://www.viaedeglidei.it/index.php?lang=it">http://www.viaedeglidei.it/index.php?lang=it</a>)</td>
</tr>
<tr>
<td>(<a href="http://www.discovertrento.it/">http://www.discovertrento.it/</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(<a href="http://www.turismo.marche.it">http://www.turismo.marche.it</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palermo</td>
<td>Friuli Venezia Giulia (<a href="http://www.turismofvg.it/">http://www.turismofvg.it/</a>)</td>
<td>Slovenia (<a href="http://www.slovenia.info/">http://www.slovenia.info/</a>)</td>
<td>La via di Francesco (<a href="http://www.camminodifrancesco.scio.it/">http://www.camminodifrancesco.scio.it/</a>)</td>
</tr>
<tr>
<td>Genova</td>
<td>Lazio</td>
<td>Austria (<a href="http://www.austria.info/it#">http://www.austria.info/it#</a>)</td>
<td>Il cammino di Assisi (<a href="http://www.camminodiassisi.it/">http://www.camminodiassisi.it/</a>)</td>
</tr>
<tr>
<td>(<a href="http://www.visitgenoa.it/">http://www.visitgenoa.it/</a>)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torino e provincia (<a href="http://www.turismotorino.org/">http://www.turismotorino.org/</a>)</td>
<td>Lazio</td>
<td>Great Britain (<a href="http://www.visitbritain.com/it/IT/">http://www.visitbritain.com/it/IT/</a>)</td>
<td>La via degli abati (<a href="http://www.viaedegliabati.com/">http://www.viaedegliabati.com/</a>)</td>
</tr>
<tr>
<td>-</td>
<td>Lombardia</td>
<td>Sweden (<a href="http://www.visitsweden.com/svezia/">http://www.visitsweden.com/svezia/</a>)</td>
<td>Ciclovia del Po (<a href="http://www.lecicloviedelpomovimentolento.it/it/">http://www.lecicloviedelpomovimentolento.it/it/</a>)</td>
</tr>
<tr>
<td>-</td>
<td>Marche</td>
<td>Netherlands (<a href="http://www.holland.com/us/tourism.htm">http://www.holland.com/us/tourism.htm</a>)</td>
<td></td>
</tr>
<tr>
<td>International destinations</td>
<td>Molise (<a href="http://www.moliseturismo.eu/web/turismo/turismo.nsf/A353C71432784254C1256F46003CDF2A">http://www.moliseturismo.eu/web/turismo/turismo.nsf/A353C71432784254C1256F46003CDF2A</a>)</td>
<td>Poland (<a href="http://www.polonia.travel/it/">http://www.polonia.travel/it/</a>)</td>
<td>International destinations</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Ljubljana (<a href="http://www.visitljubljana.com/it/">http://www.visitljubljana.com/it/</a>)</td>
<td>Puglia (<a href="http://www.viaggiareinpuglia.it/">http://www.viaggiareinpuglia.it/</a>)</td>
<td>-</td>
<td>Cammino di Santiago (<a href="http://www.spain.info/it/que-quieres/rutas/grandes-rutas/camino-santiago/">http://www.spain.info/it/que-quieres/rutas/grandes-rutas/camino-santiago/</a>)</td>
</tr>
<tr>
<td>Dublin (<a href="http://www.visitdublin.com/home/">http://www.visitdublin.com/home/</a>)</td>
<td>Toscana (<a href="http://www.turismo.intoscan.i.it/site/it/">http://www.turismo.intoscan.i.it/site/it/</a>)</td>
<td>-</td>
<td>Loira by bike (<a href="http://www.cycling-loire.com/">http://www.cycling-loire.com/</a>)</td>
</tr>
<tr>
<td>London (<a href="http://www.visitlondon.com/it">http://www.visitlondon.com/it</a>)</td>
<td>Trentino (<a href="http://www.visittrentino.it/">http://www.visittrentino.it/</a>)</td>
<td>-</td>
<td>Jesus trail-Israel (<a href="http://it.jesustrail.com/">http://it.jesustrail.com/</a>)</td>
</tr>
<tr>
<td>Amsterdam (<a href="https://www.iamsterdam.com/it/visitare">https://www.iamsterdam.com/it/visitare</a>)</td>
<td>Valle d’Aosta (<a href="http://www.lovevda.it/it">http://www.lovevda.it/it</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stockholm (<a href="https://www.visitstockholm.com/">https://www.visitstockholm.com/</a>)</td>
<td>Veneto (<a href="http://www.veneto.eu/">http://www.veneto.eu/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Los Angeles (<a href="http://www.discoverlosangeles.com/">http://www.discoverlosangeles.com/</a>)</td>
<td>Andalucia (<a href="http://www.andalucia.org/en/">http://www.andalucia.org/en/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Provence (<a href="http://www.visitprovence.com/it">http://www.visitprovence.com/it</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Tirol (<a href="http://www.tirolo.com/">http://www.tirolo.com/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Bavaria (<a href="http://www.bavaria.by/">http://www.bavaria.by/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Algarve (<a href="http://www.visitalgarve.pt/">http://www.visitalgarve.pt/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Norfolk (<a href="http://www.visitnorfolk.co.uk/">http://www.visitnorfolk.co.uk/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>California (<a href="http://www.visitcalifornia.com/it">http://www.visitcalifornia.com/it</a>)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>Queensland (<a href="http://www.queensland.com/">http://www.queensland.com/</a>)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 20. Initial sample for destination website analysis.
The following step was to select the best practices, creating the final sample of the most innovative case studies to be analysed more in depth. With this purpose, a “light” analysis scheme for destination websites was created. This scheme allowed analysing the websites also under the perspective of DMS functionalities, according to what emerged from DMS literature as exposed in section 2.3.6.3. The criteria utilized in this scheme are reported in the following table, together with a brief explanation of the way in which they were assessed.

<table>
<thead>
<tr>
<th>Name</th>
<th>Name of the destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web positioning</td>
<td>Position of the DMO website in google search results rankings for the name of the destination</td>
</tr>
<tr>
<td>Website attractiveness</td>
<td>This parameter indicates to what extent the home page is attractive, together with the user friendliness of the website.</td>
</tr>
<tr>
<td>Social Media Utilization</td>
<td>Link and participation to most diffused social networks, content hosted on photograph or video platforms and links to external tourist recommendation social media</td>
</tr>
<tr>
<td>Website languages</td>
<td>-</td>
</tr>
<tr>
<td>Personal Account</td>
<td>Presence of a personal account for the website user, allowing to access a personal area and receive personalized services</td>
</tr>
<tr>
<td>Transactional dimension</td>
<td>Possibility to buy products or services on the website</td>
</tr>
<tr>
<td>Dynamic Packaging</td>
<td>Presence of a shopping basket in which tourists can buy integrated services</td>
</tr>
<tr>
<td>Interactivity</td>
<td>Presence of a two-way communicative relationship between the user and the website content, between the user and the destination managers and between the user and other users, together with the presence of other interactive contents such as interactive maps or gamification</td>
</tr>
<tr>
<td>Mobile version</td>
<td>Version of destination website optimized for smartphone or tablet use</td>
</tr>
<tr>
<td>Itinerary planner</td>
<td>Possibility to build online a personalized itinerary within the destination</td>
</tr>
</tbody>
</table>

*Table 21. Fields and brief explanation of the “light” analysis scheme for destination websites and DMS.*

The totality of the websites present in the initial sample were analysed through this “light” analysis scheme and a benchmark table was created, in order to compare the results with less effort.
Consequently, the final sample was selected, taking the most developed and successful DMO websites for what concerns ICTs optimal and complete utilization for marketing purposes and DMS functionalities implementation. *Table 22* reports the list of the twenty destination websites case studies selected for the empirical analysis, together with the main reason for the choice.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Main reason for the choice of Website + DMS</th>
<th>Website link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florence</td>
<td>Good website, well connected with social networks but without any DMS function</td>
<td><a href="http://www.firenzeturismo.it/en/">http://www.firenzeturismo.it/en/</a></td>
</tr>
<tr>
<td>Milan</td>
<td>Attractive website, inspiring and user friendly, it is also well connected with social networks.</td>
<td><a href="http://www.turismo.milano.it/wps/portal/tur/it">http://www.turismo.milano.it/wps/portal/tur/it</a></td>
</tr>
<tr>
<td>Innsbruck</td>
<td>Inspiring website with internal complete booking system and a small dynamic packaging possibility</td>
<td><a href="http://www.innsbruck.info/it/">http://www.innsbruck.info/it/</a></td>
</tr>
<tr>
<td>Brussels</td>
<td>Attractive, inspiring and user friendly website, it allows easy content personalization (You are/you want), has an internal booking system and makes good leverage on social media. It contains a personal area an itinerary planning functionality</td>
<td><a href="http://visitbrussels.be/bitc/front/home/display/lg/en/section/visiteur.do">http://visitbrussels.be/bitc/front/home/display/lg/en/section/visiteur.do</a></td>
</tr>
<tr>
<td>Valencia</td>
<td>Very complete website, with a wonderful interactive map and very useful as a tourist support. Transactional dimension for some services and partnership with Booking.com for accommodation and dynamic packaging</td>
<td><a href="http://www.visitvalencia.com/it/home?_ga=1.162339768.505346537.1437637243">http://www.visitvalencia.com/it/home?_ga=1.162339768.505346537.1437637243</a></td>
</tr>
<tr>
<td>Torino and province</td>
<td>Attractive and well structured website with personal account and transactional functionalities</td>
<td><a href="http://www.turismotorino.org/">http://www.turismotorino.org/</a></td>
</tr>
<tr>
<td>Los Angeles</td>
<td>Very attractive website with personal account, internal transactional dimension and advanced itinerary builder (with possibility to add experiences, accommodation, services and events)</td>
<td><a href="http://www.discoverlosangeles.com/">http://www.discoverlosangeles.com/</a></td>
</tr>
<tr>
<td>Valle d’Aosta</td>
<td>Complete and inspiring website with booking functionality</td>
<td><a href="http://www.lovevda.it/it">http://www.lovevda.it/it</a></td>
</tr>
<tr>
<td>Trentino</td>
<td>Very fascinating and functional website, with transactional dimension for accommodation</td>
<td><a href="http://www.visittrentino.it/">http://www.visittrentino.it/</a></td>
</tr>
<tr>
<td>Apulia</td>
<td>Highly inspiring website (videos), with an itinerary planner and a DMS in development phase</td>
<td><a href="http://www.viaggiareinpuglia.it/">http://www.viaggiareinpuglia.it/</a></td>
</tr>
<tr>
<td>Country</td>
<td>Description</td>
<td>URL</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Queensland</td>
<td>Promotional website that despite the lack of any DMS functionality is very effective in inspiring the visitor, creating in him the desire to visit the destination. It also contains a good accommodation search engine that redirects to the structure's page for booking</td>
<td><a href="http://www.queensland.com/it-IT">http://www.queensland.com/it-IT</a></td>
</tr>
<tr>
<td>Tirol</td>
<td>Well structured website, with good interactive map, effective branding and a partnership with tiscover for the accommodation booking</td>
<td><a href="http://www.tirolo.com/">http://www.tirolo.com/</a></td>
</tr>
<tr>
<td>Italy</td>
<td>Poor website, without any DMS functionality, but worth analysing to identify the gap with other best practices</td>
<td><a href="http://www.italia.it/en/home.html">http://www.italia.it/en/home.html</a></td>
</tr>
<tr>
<td>Spain</td>
<td>Attractive and interactive website with DMS functionalities (accommodation and services booking, even flights by a partnership with skyscanner)</td>
<td><a href="http://www.spain.info/it/">http://www.spain.info/it/</a></td>
</tr>
<tr>
<td>Slovenia</td>
<td>Impressively inspiring website, well connected with social networks and internal transactional dimension</td>
<td><a href="http://www.slovenia.info/?home=0">http://www.slovenia.info/?home=0</a> &amp;lng=4</td>
</tr>
<tr>
<td>Austria</td>
<td>Highly inspiring website (videos), offering search engine with tripadvisor ratings and a booking function through a partnership with different OTAs, high content personalization is possible</td>
<td><a href="http://www.austria.info/it">http://www.austria.info/it</a></td>
</tr>
<tr>
<td>Poland</td>
<td>Good website with many functions, among which: transactional (partnership with Booking.com), itinerary planner, personal account</td>
<td><a href="http://www.polonia.travel/it/">http://www.polonia.travel/it/</a></td>
</tr>
<tr>
<td>Via Francigena</td>
<td>Interesting website with many useful downloads and a transactional functionality</td>
<td><a href="http://www.viefrancigene.org/it/">http://www.viefrancigene.org/it/</a></td>
</tr>
<tr>
<td>Walk of Peace</td>
<td>Regular itinerary website with a good interactive map, without any DMS functionality</td>
<td><a href="http://www.potmiru.si/ita/">http://www.potmiru.si/ita/</a></td>
</tr>
<tr>
<td>Inn cycling way</td>
<td>Well structured website, with good interactive map, perfectly supporting tourists in their needs, even if with low digital usage. Good example of collaboration between countries.</td>
<td><a href="http://www.innregionen.com/">http://www.innregionen.com/</a></td>
</tr>
</tbody>
</table>
2.2.2 Destination websites analysis

The final sample was analysed in depth by means of an analysis scheme prepared on purpose, that allowed focusing on the most relevant aspects for the present research and conducting the analysis in a standardized way for the different destinations.

More in detail, the aspects taken into account are reported in the table below:

<table>
<thead>
<tr>
<th>General information about the destination website</th>
<th>Name of the destination, typology, link, web positioning, mobile version of the website, languages available, reference to destination app or to destination card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home page</td>
<td>Analysis of the element of the home page and overall attractiveness, weight of the inspirational and of the organizational part of the website</td>
</tr>
<tr>
<td>DMS functionalities</td>
<td>Identification and analysis of the DMS functionalities available on the destination website. The functionalities explored were: search engine, CRM, itinerary planner, dynamic packaging, transactional dimension, suppliers area and personal account.</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Link and participation to most diffused social networks, content hosted on photograph or video platforms and links to external tourist recommendation social media</td>
</tr>
</tbody>
</table>

*Table 23 Main sections of DMO websites and DMS empirical analysis scheme, with the related characteristics analysed.*

For every destination a case study was composed, underlining the most important elements emerged from the website analysis. Subsequently, a benchmark table was created, in order to more easily compare the results, and finally figures were created, starting from the data collected, for giving more evidence to the results obtained.

For what concerns the home page analysis it is important to clarify the meaning of the term element. The term element is used to indicate all the logical sections, functionalities or communicational contents (pictures, videos, etc.) that could be found observing a home page. For this analysis, all the elements were considered apart the footing, since it was not deemed differential for the purpose of this study.
2.3 Destination card analysis

2.3.1 Destination card selection

The initial sample for destination cards best practice research was selected through a web analysis. The first step was to exclude from this sample countries and itineraries, since these destination types were generally found without a destination card. Moreover, the international regions were left out of the initial sample, because few of them had at their disposal cards thought on purpose for tourist. Instead, for the totality of Italian regions the presence of a tourist card was verified. In essence, the initial sample was mainly constituted by all the Italian city cards and by a number of international city cards of destinations with a strong tourism activity.

<table>
<thead>
<tr>
<th>Italian Cities</th>
<th>City Card</th>
<th>International Cities</th>
<th>City Card</th>
<th>Italian Regions</th>
<th>Regional Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisi</td>
<td>Assiscard</td>
<td>Amsterdam</td>
<td>I Amsterdam City Card</td>
<td>Abruzzo</td>
<td>No tourist card</td>
</tr>
<tr>
<td>Bergamo</td>
<td>Bergamo Card</td>
<td>Barcelona</td>
<td>Barcelona Card</td>
<td>Alto Adige</td>
<td>Museumobilcard (Alto Adige)</td>
</tr>
<tr>
<td>Bologna</td>
<td>Bologna Welcome Card</td>
<td>Berlin</td>
<td>Berlin Pass</td>
<td>Basilicata</td>
<td>No tourist card</td>
</tr>
<tr>
<td>Firenze</td>
<td>Firenze Card</td>
<td>Berlin</td>
<td>Berlin Welcome Card</td>
<td>Calabria</td>
<td>Discover Calabria Card</td>
</tr>
<tr>
<td>Genova</td>
<td>Genova Card Musei</td>
<td>Brussels</td>
<td>Brussels Card</td>
<td>Campania</td>
<td>Campania ArteCard</td>
</tr>
<tr>
<td>Mantova</td>
<td>Mantova Musei Card</td>
<td>Copenhagen</td>
<td>Copenhagen Card</td>
<td>Emilia Romagna</td>
<td>Romagna Visit Card</td>
</tr>
<tr>
<td>Milano</td>
<td>Milano Card</td>
<td>Dublin</td>
<td>Dublinpass</td>
<td>riuli Venezia Giulia</td>
<td>FVG Card</td>
</tr>
<tr>
<td>Napoli</td>
<td>ArteCard Napoli</td>
<td>Innsbruck</td>
<td>Innsbruck Card</td>
<td>Lazio</td>
<td>No tourist card</td>
</tr>
<tr>
<td>Padova</td>
<td>Padova Card</td>
<td>Lisboa</td>
<td>Lisboacard</td>
<td>Lombardia</td>
<td>No tourist card</td>
</tr>
<tr>
<td>Palermo</td>
<td>PMO Card (Palermo)</td>
<td>Ljubljana</td>
<td>Ljubljana Card</td>
<td>Marche</td>
<td>Cartamuseimarche</td>
</tr>
<tr>
<td>Perugia</td>
<td>Perugia Città Museo Card</td>
<td>London</td>
<td>London Pass</td>
<td>Molise</td>
<td>No tourist card</td>
</tr>
<tr>
<td>Roma</td>
<td>Roma Pass</td>
<td>Los Angeles</td>
<td>Go Card Los Angeles</td>
<td>Piemonte</td>
<td>Torino+Piemonte Card</td>
</tr>
<tr>
<td>Venezia</td>
<td>Venezia Unica Citypass</td>
<td>Luxembourg</td>
<td>Luxembourg Card</td>
<td>Puglia</td>
<td>Puglia Tourist Card</td>
</tr>
<tr>
<td>Verona</td>
<td>Verona Card</td>
<td>Lyon</td>
<td>Lyon City Card</td>
<td>Sardegna</td>
<td>No tourist card</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Madrid</td>
<td>Madrid Card</td>
<td>Sicilia</td>
<td>Coming soon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New York</td>
<td>New York Pass</td>
<td>Toscana</td>
<td>No tourist card</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New York</td>
<td>New York City Pass</td>
<td>Trentino</td>
<td>Trentino Guest Card</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oslo</td>
<td>Oslo Pass</td>
<td>Umbria</td>
<td>No tourist card</td>
</tr>
</tbody>
</table>
The list of the sixty-two destinations included in the initial sample for destination cards analysis is reported in Table 24.

The selection of the best practices among these destinations was brought on by a “light” analysis scheme that was compiled for every destination card and allowed to identify the ones that are using ICTs related to destination cards in the most innovative way. The following table reports the fields of this “light” analysis scheme together with a brief explanation of their meaning.

<table>
<thead>
<tr>
<th>Name</th>
<th>Name of the destination card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration (h)</td>
<td>-</td>
</tr>
<tr>
<td>Cost (€)</td>
<td>-</td>
</tr>
<tr>
<td>Integration level</td>
<td>Level of integration of the card among those proposed by Garavaglia (2015) - see section 2.3.6.6</td>
</tr>
<tr>
<td>Virtual Version</td>
<td>Presence of a virtual version of the card, of any type</td>
</tr>
<tr>
<td>Associated App</td>
<td>Presence of a mobile application supporting the card user</td>
</tr>
<tr>
<td>Online sale</td>
<td>-</td>
</tr>
<tr>
<td>Home Delivery</td>
<td>-</td>
</tr>
<tr>
<td>Website languages</td>
<td>-</td>
</tr>
<tr>
<td>Technology</td>
<td>Type of technology inserted in the cards</td>
</tr>
<tr>
<td>Student Reduction</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 24. Initial sample for destination cards analysis.

Table 25. Fields of the “light” analysis scheme for destination cards together with a brief explanation.
In particular, since this work concentrates on the importance of ICTs for destinations, the technological aspects (such as the virtual version or the type of technology installed on the cards) was retained very important and only smart or virtual destination cards were selected.

The final sample for destination card “detailed” analysis is the following:

<table>
<thead>
<tr>
<th>Destination Card</th>
<th>Card typology (smart or Virtual)</th>
<th>Main reason for the choice of the card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firenze Card</td>
<td>Smart (Barcode)</td>
<td>Successful card allowing to visit all the most interesting attractions in the city and solving the problem of public transport. An associated app adds value to the card</td>
</tr>
<tr>
<td>Venezia Unica City Pass</td>
<td>Smart (PNR code, QR code)</td>
<td>Dynamic packaging card, allowing tourists to build online a card on purpose for their needs (perfect personalisation).</td>
</tr>
<tr>
<td>Milano Card</td>
<td>Smart</td>
<td>Good presentation website, all inclusive and with online sale, not common in Italy</td>
</tr>
<tr>
<td>Innsbruck card</td>
<td>Smart (NFC)</td>
<td>Card sold online and possibility of discounted integration with hotels, very complete service provision.</td>
</tr>
<tr>
<td>Brussels card</td>
<td>Virtual</td>
<td>It allows buying and using immediately the services desired, scanning the QR code directly from the smartphone</td>
</tr>
<tr>
<td>Ljubljana card</td>
<td>Smart (Barcode)</td>
<td>Complete card, all inclusive, with guided tour and internet</td>
</tr>
<tr>
<td>Valencia tourist card</td>
<td>Smart</td>
<td>Broad offer of tourist cards with a wide economic advantage, different types of card</td>
</tr>
<tr>
<td>Barcelona Card</td>
<td>Smart (NFC)</td>
<td>Popular destination card developed in the smart city of Barcelona</td>
</tr>
<tr>
<td>New York Pass</td>
<td>Smart (NFC)</td>
<td>Successful card with a popular and value adding associated App</td>
</tr>
<tr>
<td>Go Card Washigton</td>
<td>Virtual</td>
<td>Virtual tourist card (QR codes), it allows buying and using immediately the services desired, scanning the QR code directly from the smartphone. Moreover it can be used as a dynamic packaging tool, buying services for a certain number of people and having access to it just showing or printing the QR code</td>
</tr>
<tr>
<td>Singapore Pass</td>
<td>Smart (NFC)</td>
<td>Pass allowing the entrance to all the top attractions in Singapore, with a good economic advantage</td>
</tr>
<tr>
<td>Oslo Pass</td>
<td>Virtual</td>
<td>Virtual version of the tourist card, with an app allowing to buy it online and to show it directly from the smartphone</td>
</tr>
</tbody>
</table>
Go Card Los Angeles  |  Virtual  |  Virtual tourist card (QR codes), it allows buying and using immediately the services desired, scanning the QR code directly from the smartphone. Moreover it can be used as a dynamic packaging tool, buying services for a certain number of people and having access to it just showing or printing the QR code

| Piemonte Card  |  Smart (NFC)  |  Hybrid regional and city card, sold online
| Cartamuseimarche  |  Smart (Barcode)  |  Thematic regional card
| Trentino welcome card  |  Smart (QR code)  |  Innovative example of all inclusive regional card developed for tourists and well promoted online, with personal account for online booking, accessible through the card QR code. The card is integrated with some hotels too

Table 26 Final sample for destination card “detailed” analysis.

As it can be noticed in the graph below, the number of smart card is higher than that of virtual cards, even if the virtual cards are more interesting under an ICTs innovative utilization perspective. This is due to the fact that virtual destination cards are still rare and just four of them were found during the initial sample analysis.

![Typology of the cards considered in the final sample](image)

Figure 13. Typology of the cards considered in the final sample. Sample: 16 destination cards.

### 2.3.2 Destination cards analysis

The final sample was analysed in depth using an analysis scheme prepared on purpose, that allowed focusing on the most relevant aspects for the present research and conducting the analysis in a standardized way for the different destination cards.
Particularly, the aspects taken into account inside the empirical analysis scheme are reported in the table below:

<table>
<thead>
<tr>
<th>General information about the Destination Card</th>
<th>Name of the destination, typology, name of the card, duration, cost, typology, technology, integration level (Garavaglia, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual version</td>
<td>Detailed description, advantages and disadvantages, of the eventual virtual version of the destination card</td>
</tr>
<tr>
<td>Mobile application</td>
<td>Analysis of the services offered by the eventual destination App linked to the card</td>
</tr>
<tr>
<td>Need satisfaction</td>
<td>Identification of the tourist needs satisfied by the destination card among the four main needs of a tourist card buyer described by Zoltan and Masiero (2012): Personalization, convenience, time optimization, information about attractions and novelties</td>
</tr>
<tr>
<td>Channels</td>
<td>Analysis of the channels through which the card is sold and distributed</td>
</tr>
<tr>
<td>Actors involved</td>
<td>List of the categories of actors involved in the destination card project. List of the actors promoting and developing the card. Destination card manager entity identification</td>
</tr>
</tbody>
</table>

Table 27. Main sections of destination cards empirical analysis scheme, with the related characteristics analysed in every section.

For every destination card a case study was composed, underlining the most important elements emerged from the analysis. A special attention was dedicated to those destinations that introduced a virtual version of the card, the most innovative ICTs implementation in this field. Subsequently, a benchmark table was created, in order to more easily compare the results, and finally figures were drawn, starting from the data collected, providing more visibility to the results obtained from the analysis
2.4 Application

The final part of this work consisted in the application to a real case of the knowledge acquired during the literature review and through the empirical analysis.

The application is in fact the natural consequence of the results provided by the empirical analysis. For a destination, the DMO website with its functionalities is vital, up to the point that it determines and influences the visibility of the destination as a whole and of all destination stakeholders. Moreover, the destination card is a powerful tool for stakeholders integration able to coordinate and add attractiveness to tourism offer. It is also at the forefront of a transaction to a completely digitalized version, the virtual tourist card. Consequently, it is interesting to see how the most recent advancements in the utilization of these tools that were the object of the empirical analysis, together with the other ICTs analysed in the literature, can be implemented in a real case.

The case selected is the itinerary “Longobard Ways across Europe”. Longobard ways across Europe is a cultural European itinerary, which follows the traces of the Longobard migration over the centuries, from South Sweden (Scania) to southern Italy (Basilicata and Calabria). The areas involved in this Itinerary can be seen in the image below.

![Figure 14 Areas touched by the Longobards during their migration. Source: Longobard Ways across Europe official website.](image-url)
This itinerary is particularly suitable for the application of the concepts of smart destination and of all digital destination. In fact, ICTs are the perfect connection element required in this situation, since they are able to provide tourists with a strongly integrated experience. The itinerary destination typology is per se fragmented, due to the great geographical extension it can reach and because of the fact that it generally involves many smaller destinations. Longobard Ways across Europe itinerary is divided into 4 macro areas and 30 clusters. In fact, each of the areas and of the clusters could be considered a destination by itself, with its own features and challenges. Some zones are rich of art masterpieces, while others have only historical tales testifying their link with the Longobards. This causes a certain discontinuity in the attractiveness of the various parts of the itinerary and increments the need of an element on which destination identity can be built. For this reason a proposal for the implementation of ICTs was developed, for the creation of a seamless tourist experience and of a smart destination.

The methodology chosen for the application is the design of the role of ICTs inside the Longobard Ways across Europe tourist experience. In fact, the tourist experience is the core product a DMO should offer and a successful, seamless tourist experience will have as a consequence destination competitiveness and success. Specifically, during the experience design a particular attention was put on ICTs implementation, underlining the aspects in which digital technologies can positively influence the contacts tourist have with the destination, both physical and virtual.

First, the phases of the experience were identified, basing on the different needs tourist have during their experience. Then, for each phase, the main activities tourist perform were listed. The following step was to select the types of ICTs application that should be utilized in each phase. These ICTs were identified basing on best practices or examples found in the literature or in the empirical analysis. For the most innovative applications, a further and specific explanation was provided. Finally, an explanation of the DMO relation or tourist interaction with each type of ICTs in each phase was elaborated, with the aim of clarifying the benefits ICTs could bring to management and success of the Longobard Ways across Europe itinerary.
3 RESULTS

3.1 Results and insights about destination websites

The analysis of destination websites has provided insights about the usage of this type of ICT on behalf of DMOs together with a good perception about the diffusion of DMS functionalities.

3.1.1 Home Page and website structure

For every destination website in the final sample, the structure with which the contents are organized was analysed, with a particular attention to the home page. The contents inserted in the home page are in fact an important signal of the objectives DMOs pursue when they welcome a visitor on their website. The following histogram reports the number of elements present on each home page.

![Number of elements present in the destination website home page. Sample 20 destination websites.](image)

*Figure 15. Number of elements present in the destination website home page. Sample 20 destination websites.*
It is important to take into account that, as already explained in the methodology section, the term element refers to all the logical sections, functionalities or communicational contents (pictures, videos, etc.) that could be found observing an home page. For this analysis, all the elements were considered apart the footing.

It is interesting to notice that destinations considered successful in the literature as Los Angeles and Tirol have some of the simplest home pages, suggesting that the number of elements is not linked with destination success. On the other hand, under a design and aesthetical aspect their home page is very modern, in comparison to others.

Another result emerged by the analysis is the frequency of the presence of some elements in the home pages (Figure 16). Link to social media, DMO or tourism organization logo and navigation bar are present in all the websites of the sample. In addition, the presence of inspiring images, news and events and the space of product and services have a very high diffusion (95%, 95% and 90% of the destinations). Elements like: travel ideas, photo gallery, itinerary planner box, search engine, money exchange rates, link to DMS, or 360° images are instead very rare.

![Figure 16. Number of presences of home page elements in the home pages of the final sample of destination websites. Sample: 20 destination websites.](image-url)
3.1.2 DMS functionalities

The analysis of the final sample underlined the diffusion of DMS functionalities in destination websites. The functionalities explored, deduced from Petti (2009) were search engine, CRM, itinerary planner, dynamic packaging, transactional dimension, suppliers area and personal account.

The following graph shows the number of websites of the final sample containing each of the DMS functionalities.

![Percentage of websites providing a specific DMS functionality](image)

*Figure 17. Percentage of websites providing a specific DMS functionality. Sample: 20 destination websites.*

The search engine is the most diffused functionality, with the 80% of the website analysed having it at tourists’ disposal. This functionality is particularly useful for giving visibility to small tourism enterprises, especially if an interactive map accompanies it. It is important to underline that the search engine considered is only the typology allowing searching destination stakeholders or activities. Thus, the “classic” search engine offering the possibility to research words among the website contents was not considered in this part of the analysis.

The transactional dimension is rather frequent, but the range of services available varies a lot from destination to destination. The Via Francigena allows for example only informative books and maps purchase, while on Spanish website the availability for purchase of tourism products and services is complete, going from accommodation to car renting. Moreover, among of the destinations offering transactions for transports or accommodation the partnership with an OTA is quite diffused, with Booking.com being clearly the most pervasive partner.
Personal account and suppliers area functionalities are not so frequent and their potential is often undervalued. In fact, in the websites allowing creating a personal account, the visibility of the function is low and the advantages obtained with its creation are not explained. Moreover, the creation of the account does not create determinant additional value. For instance, it does not allow saving travel preferences, receiving personalized offers nor saving payment details. Only in the cases of Brussels, Los Angeles and Apulia it is possible to save the favourite sites and attractions on the account. Consequently, the advantages deriving from the account creation have still great potential to be exploited.

The itinerary planner functionality is still rare, with just 20% of the destination websites analysed containing it. However, it is a strategic function, because it allows a strong integration for destination stakeholders. According to Inversini and Cantoni (2009) a DMS with similar functionalities contributes to a higher cohesion inside the destination and, consequently, to a more coordinated promotion of the destination. (Inversini and Cantoni, 2009). In fact, thanks to this functionality every destination tourism player is given the opportunity to become part of an integrated tourism offer composed directly by the tourist, according to his needs. The best itinerary planners analysed were those of Poland and Los Angeles.

Dynamic packaging and CRM functionalities were not found in any of the websites analysed. However, some destinations like Innsbruck and Trentino sell online-preconstituted packages, which combine accommodation with participation to events, destination cards or tourism services. These packages are an optimal integration opportunity among different categories of stakeholders in the destination. For what concerns CRM, a possible explanation of the absence of a proper information system supporting this activity it could be the complexity and the fragility of the DMOs relationship with tourists. Some forms of primitive Customer Relationship Management found in the cases analysed are newsletters (in some cases also personalized) and customer assistance performed through social networks.

From the data collected, it is possible to conclude that DMS functionalities are still quite rare, at least for the websites inside the final sample. In fact, just the search engine and the transactional dimension are available for more than 50% of the websites. Particularly the transactional dimension, defined by Estevao et al. (2014) as the criteria for recognising a DMS, is present only on the 60% of destination websites.

The next graph (Figure 18) shows the number of DMS functionalities per destination website analysed. Brussels, Apulia and Los Angeles are the most innovative under this aspect, having introduced four of the functionalities taken into account. The itineraries were found to be a destination typology with low DMS functionalities availability, as the walk of Peace and the Inn Cycling Way.
testify. Finally, it was found that the Italian tourism website provides no DMS functionality. This fact underlines the gap in the introduction of ICTs in the Italian tourism market in respect with the other countries in the sample.

**Figure 18. Number of DMS functionalities per destination website. Sample: 20 destination websites.**

### 3.1.3 General insights about destination websites

In essence, after the empirical analysis and the literature, it is possible to advance a proposal for the classification of destination home pages in two main categories:

1. **Inspirational home pages**: The main aim of this type of home pages is clearly to inspire the visitor and to create in him the desire to visit the destination. The contents (pictures, videos) are focused on the experience, facilitating the identification with the characters. These websites have generally reduced DMS functionalities. Some examples of highly inspirational home pages are Austria, Slovenia, Valle d’Aosta and Queensland.

2. **Planning home pages**: These websites have the main aim to help tourists organizing their trip to the destination. Even if they don’t neglect the aesthetical aspect, it is clear that their objectives are acting as brokers between tourists and destination stakeholders and trying to assist tourist in every aspect of their trip organization. These activities are mainly brought on through personalized sections of the website, DMS functionalities and informational contents. Some examples of planning home pages are Valencia, Poland and Brussels.
In some cases a good compromise between the two categories was reached, as in the case of Apulia. Apulia has in fact a very evocative and inspiring home page, with attractive features, videos and pictures. However, from the navigation bar it is also possible to access many DMS functionalities, which perfectly assist the tourist in the organization of his trip. This example opens the road for an innovative type of website, with a pre decision version mainly aimed at inspiring the visitor and a post decisional version for an optimal trip organization.

Moreover, through the analysis, it was possible to notice that the itinerary websites are considerably below the average level for what concerns the functionalities provided, as it can be observed in Figure 18 for the three itineraries analysed (Via Francigena, Walk of Peace and Inn cycling way). Two possible suppositions could be done for explaining this gap. The first is linked to the fact that itineraries are usually not managed by proper DMOs but by associations or other entities, although they can be seen as single destinations beyond any doubt. In this case, the funds and the professionality at disposal for the website are very limited, with a consequent gap in comparison with websites of more structured organizations. A solution could be to institute dedicated DMOs to promote and manage the itineraries, even international DMOs in case of itineraries crossing more countries. The second supposition has to do with the difficulty for an eventual DMO to manage and coordinate the great number of actors involved in the itinerary destination typology. Cultural, geographical, political and organizational differences between the different sections of an itinerary could cause an inefficacy in the utilization of the resource at DMO disposal.

Finally, it can be said that start-ups and travel agencies find no evidence inside the analysed websites, apart a little section on Polish official tourism website dedicated to the incoming agencies. An example of destination website involving travel agencies and tour operators, even if not included in the final sample, is Israeli website. A section of this website reports in fact travel packages for trips to Israel proposed by different national and international TOs, with a direct link to their websites for more detailed information and booking.
3.2 Results and insight about destination cards

The analysis of destination cards provided a significant overview about the usage of this type of ICT on behalf of DMOs together with useful insights about the most innovative way of digitalization of this destination management tool.

3.2.1 Card typologies and characteristics

The initial sample of cards analysed provided a glimpse over the diffusion of each of the tourist card integration level described by Garavaglia (2015). In the following graph, we can see the number and the percentages of the 51 destination card found in the initial sample. The majority of the cards are All inclusive (including all the main functionalities, see Section 1.3.5.6), but also the thematic + discount type is quite frequent.

![Number of cards considered in the initial sample divided by integration level](image)

![Percentage of cards considered in the initial sample divided by integration level](image)

*Figure 19 Number and percentage of cards considered in the initial sample divided by integration level. Sample: 51 destination cards.*
Also in the final sample, the All Inclusive cards are the most frequent, followed here by Thematic cards, as it is possible to notice in the histogram below.

**Figure 20. Number of cards considered in the final sample divided by integration level. Sample: 16 destination cards.**

The study of the cards in the final sample allowed comparing the durations of these technological cards, and noticing that they are thought to give important advantages but to last only for one visit of a few days to the destination. As it is possible to notice in the graph below, the most diffused time span for the duration of the cards is 72 hours, followed by 48 and 24 h. This evidence supports the observation that the most technological cards are thought for an intensive usage on behalf of visitors.

**Figure 21 Number of destination cards out of the final sample having a version lasting for the specific amount of hours. Sample: 16 destination cards.**
Another characteristic studied in the final sample was the proximity technology supporting the destination cards. QR codes, NFC and barcode are almost equally diffused, as it is evident in Figure 22. However, it is important to underline that all the virtual destination cards analysed using a proximity technology are supported by QR code technology.

![Figure 22](image)

*Figure 22 Number and percentage of cards considered in the final sample supported by the specific technology. Sample: 16 destination cards.*

### 3.2.2 Business Model

The analysis conducted on the final sample allowed having a general idea of the business model behind destination cards, particularly about the actors involved in the project, the needs satisfied and the channels used by Card Managers for distribution and payment.

#### 3.2.2.1 Actors involved

The actors involved in the destination card projects vary consistently from a destination to the other also depending on the integration level desired for the specific cards. As shown in Figure 23, the destinations offering the most complete range of services through their destination cards are Venice, Valencia, Barcelona, Torino and Trentino. They are obviously selling All Inclusive cards. At the opposite extreme, there are two Italian destinations, Florence (recently passed from an All Inclusive to a Thematic destination card) and Marche, both offering access only to museums with their cards.
Analysing the final sample it was possible to notice that the totality of destination cards involved museums and the majority of them also attractions. Figure 24 reports the percentages of cards involving each category of actors. It is interesting to notice that the accommodation sector is quite always excluded from destination card projects. The cause of this exclusion could be the strength of this category of actors, together with the presence of associations of category that already provide sufficient benefits to the sector. However, since these actors are fundamental for a complete tourist experience, they should be involved in destination cards projects, to reach a higher integration among destination stakeholders. An example could be the sale of packages including the destination cards in the price of the hotels (as in the case of Innsbruck Card or Trentino Guest card). Finally, it was noticed that no destination card project among those analysed involves nor gives evidence to start ups, travel agencies and local producers.
3.2.2.2 Need satisfied

For the analysis of the needs satisfied the four main needs of a tourist buying a destination card described by Zoltan and Masiero (2012) was utilized. All the cards were found to satisfy, at different levels the needs for “convenience”, “time optimization” and “information about attractions and novelties”. However, as it can be seen in Figure 25, the need for “Personalization” is satisfied by only 44% of the destination cards in the final sample.

The destination that is absolutely the best in meeting this need is Venice. In fact, the “Venezia è Unica City Pass” allows a high-level personalization, with an innovative business model and information system, at disposal of both tourists and citizens. The tourist is able to select from the website the desired services and to build his personalized destination card. Then he can purchase his product online and pick it up in the city. What makes this card particularly innovative is the impressive amount of combination and service at disposal and the possibility to combine them freely, providing a true dynamic packaging service. Tourists can insert in the card and buy in a single purchase all-inclusive city passes, single tickets for transports, churches, services and museums, offers in restaurants, and minor services like toilette and car parking. The only negative aspect is that the card lacks a virtual version, but since the technology supporting it is QR code, the introduction of a virtual version should be easy.

3.2.2.3 Channels

The channels through which destination cards are sold are direct offline sale (100% of the cards) and online sale (94% of the cards), with the possibility to pay in cash or by credit card. However, as it can be noticed in Figure 25, only 44% of the cards can be received at home, by express courier (for virtual tourist cards). This is a disservice typical of Italian destination cards, since no Italian destination offers home nor virtual delivery. This gap should be filled, because having the card at disposal at the beginning of the trip is considered a qualifier abroad, since it allows tourists to enjoy the benefits from the first moment of their visit and to save time at destination.

<table>
<thead>
<tr>
<th>Percentage of cards offering a specific service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Sale</td>
</tr>
<tr>
<td>Card Personalization</td>
</tr>
<tr>
<td>Home delivery</td>
</tr>
<tr>
<td>Virtual delivery (App or Email)</td>
</tr>
</tbody>
</table>

Figure 25. Percentage of destination cards offering a specific service. Sample: 16 destination cards.
3.2.3 Virtual tourist cards

The most innovative application of ICTs to destination cards is the virtual tourist card. They are still rare, but they probably represent the future of destination cards. Among the eighty destinations inserted in the initial sample, only four have developed a virtual version of their card: Oslo, Los Angeles, Washington DC and Brussels. These cases were analysed with a particular attention because of their innovativeness. A brief summary of the main feature of each cards can be found in Table 28.

<table>
<thead>
<tr>
<th>Virtual tourist card</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oslo Pass</td>
<td>All inclusive virtual card, with QR code technology, supported by a dedicated app allowing buying and showing the code.</td>
</tr>
<tr>
<td>Brussels Card</td>
<td>Thematic + discount virtual card, with QR code received by email after the purchase, with the possibility to print it or to show it from the smartphone.</td>
</tr>
<tr>
<td>Go Card Washington</td>
<td>Thematic virtual card, with QR code sent by email that can be printed or showed, but with just a few attractions available.</td>
</tr>
<tr>
<td>Go Card Los Angeles</td>
<td>Thematic virtual card, with QR code, delivered via email and that can be printed or showed. There is also the personalization option.</td>
</tr>
</tbody>
</table>

Table 28. Brief description of the virtual tourist cards.

From the analysis, it was possible to understand the advantages and the disadvantages of virtual destination cards, reported in the table below. It is clear that with a good technological infrastructure (Wi-Fi connection, SIM cards for tourists) and a dedicated tourist information centre, the disadvantages can be almost eliminated, while the advantages will be surely welcomed by the average traveller.

<table>
<thead>
<tr>
<th>Advantages of virtual tourist cards</th>
<th>Disadvantages of virtual tourist cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of waiting times for receiving the card.</td>
<td>Smartphone dysfunctions could create problems for card utilization</td>
</tr>
<tr>
<td>Elimination of shipping costs</td>
<td>The absence of internet connection could make card usage difficult</td>
</tr>
</tbody>
</table>
Card can be bought anywhere, with just a smartphone and an internet connection. The absence of an operator, and a point of sale could be seen as a disservice in case of need for assistance. They are environmental friendly, eliminating waste materials.

Table 29. Advantages and disadvantages of virtual tourist cards.

3.2.4 General insights about destination cards

The analysis of the destination cards of both the initial and the final sample, provided insights about the state of the art of this Type of ICTs and an occasion to compare Italian and international cards. The reflections emerged are listed below:

- Destination cards are a strong integration tool, through which destination stakeholder unite their forces to create a more complete and convenient tourist offer. As already mentioned, also including the destination card in the price of tourist packages is an optimal example of integration among local tourism stakeholders. In fact, it rises the attractiveness of the package and allows tourists to receive practically every service needed during the trip in a single purchase. The packages help also to involve and promote hotels inside the card development project.

- Apps, brochures or booklets are an important tool to inform tourists about the opportunities they have buying a destination card and to let them know all the practical information, determinant to have a seamless experience at destination. This is the reason why the great majority of the destinations sell the card with informative material included in the price.

- For many Italian destination cards, especially for the regional ones, it is evident that the cards were not developed with a tourism oriented approach, i.e. with the aim of improving the experience of the international tourist (this is valid also for the website). A clearly negative example is the Discover Calabria Card, that despite its name lacks even an English version of the website. This annual card offers discounts on a limited number of products and services dispersed all along the region. However the discounts are so low, that an average tourist staying for a limited period in Calabria would hardly have the time to use the discounts in order to regain the money spent for the card purchase. On the contrary, the card should be thought for giving real benefits to both international tourists and people of the region, following the examples of destinations like Venice and Trentino.
Some destination cards, like Valencia Tourist Card and Milano Card offer a very convenient economic advantage. This deal is very strategic, because it helps attracting tourists to the destination, where they will spend money for hotels, tourism services and restaurants, contributing and incrementing destination wealth.
3.3 All digital destination components

The analysis of destination websites and destination cards included in both the initial and the final sample, together with the literature review (in particular Gonzalo, 2012) opened the road for the clarification of the concept of “All Digital Destination”.

An all digital destination would be a destination in which stakeholders are perfectly connected among themselves and with the tourism environment, by means of a pervasive ICTs implementation.

This work allowed establishing which are the factors making a destination “all digital”. They are listed in the table below.

<table>
<thead>
<tr>
<th>Factors for all digital destinations</th>
<th>Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wi-Fi and mobile solutions</td>
<td>Ubiquitous internet coverage for tourists.</td>
</tr>
<tr>
<td>Destination Management System</td>
<td>DMS with personal account, itinerary planner, search engine transactional dimension.</td>
</tr>
<tr>
<td>Digital information desk</td>
<td>Presence of digitalized tourist information centre in strategic points of the destination, with operators assisting visitors also through social media.</td>
</tr>
<tr>
<td>Experiential e-commerce</td>
<td>Possibility to buy souvenirs of the destination online, after the visit.</td>
</tr>
<tr>
<td>Complementary Currency</td>
<td>Presence of an agreement within the destination to accept something else than national currencies as a means of payment.</td>
</tr>
<tr>
<td>Personal tourist profile</td>
<td>Tourist profile identifying him uniquely during his visit to the destination.</td>
</tr>
<tr>
<td>Virtual tourist card</td>
<td>Destination card that can be used and purchased directly from the smartphone.</td>
</tr>
<tr>
<td>Mobile Application</td>
<td>App developed on purpose for tourists visiting the destination, assisting them in their visit and even acting as a virtual card.</td>
</tr>
<tr>
<td>Online community</td>
<td>Presence of an online community or of a destination blog.</td>
</tr>
<tr>
<td>Big Data Analysis Systems and Management</td>
<td>Collection and analysis of data and KPIs with systems autonomously proposing or initiating predefined improving actions.</td>
</tr>
</tbody>
</table>

Table 30 Elements required for making a destination All Digital.
All digital destination is an emerging term, not yet diffused and widely accepted as others like Smart Destination. Moreover, the all digital destination seems to exist only in theory or to be part only of the future tourism market, since the components required are many and pretty innovative for being present in a destination nowadays. However, in some cases during the empirical analysis, many of these components were found. Brussels is a good example of an almost perfect all digital destination, since it has a very attractive and full of DMS functionalities website, a good Wi-Fi coverage, a personal account for tourists, an online community and innovative TIC. The only factor completely absent in this destination is the complementary currency.
3.4 Application – Longobard Ways across Europe

The following sections present the result of the application of the knowledge acquired about the influence of ICTs on destination management to the “Longobard Ways across Europe” itinerary.

3.4.1 ICTs as connection element for the Longobard Itinerary

Because of the fragmented nature of the itinerary destination typology, the implementation of ICTs in this case is particularly strategic and can act as the connection element allowing tourists to perceive the itinerary as a single entity. Hence, the central idea is the transformation of the itinerary in a smart destination, giving continuity to the tourist experience and forging the various clusters into a single conceptual entity, in the mind of both visitors and stakeholders.

The first important step is creating a supranational DMO, with the aim of marketing and managing the Itinerary as a whole. Without this entity, it will be very difficult to integrate and coordinate the thousands of actors that could be involved in the project. Longobard Ways across Europe DMO will use ICTs for creating a single entity out of the many fragmented destinations involved and for giving higher effectiveness to the destination management activity.

ICTs have then the vital role of acting as the connection element, as the “fil rouge” for the tourist experience so that the Longobard Ways across Europe Itinerary acquires sense as a whole. The most important objective for the DMO is to provide a pleasant, seamless, personalized tourist experience. For this purpose an optimal ICTs utilization and the involvement of every stakeholder is necessary.

3.4.2 Role of ICTs in the Longobard Itinerary tourist experience

This section presents the four phases in which the Longobard ways across Europe tourist experience can be divided, together with the tourist activities in each phase and the ICTs involved for the creation of an all digital Longobard itinerary.

While designing the tourist experience, the results and insights emerged from the empirical analysis of destination websites and destination cards were utilized for adding value to the results. The application of the knowledge acquired about destination cards is evident through the design of an all inclusive virtual tourist
card for the itinerary, supported by QR codes and available on smartphones through an app. The knowledge acquired about destination websites finds instead evidence in the proposal for the creation of a website divided in two parts, the first aiming at inspiring the tourist while the second at supporting him in the organization of its trip. Moreover, in the Longobard Ways website project, all the most important and diffused DMS functionalities were included and even further improved in comparison with those found in the cases.

Regarding the experience design, for each phase all the ICTs a DMO should make use of were selected. Moreover, the role of the specific ICT in the particular phase was explained. Section 3.4.2.1 was dedicated to the most innovative ICTs application in the tourism experience of this itinerary. Figure 26 shows a general scheme of the Longobard ways across Europe tourist experience.

![Diagram of Longobard Ways across Europe tourist experience](image)

**Figure 26.** The Longobard Ways across Europe tourist experience: phases, tourist activities and ICTs involved.

The tourist enters the cycle and if ICTs are utilized in an optimal way, he could reiterate it many times, visiting an always-new part of the itinerary and bringing benefits to all the clusters taking part to it. Finally, for every phase it is also possible to see which are the main activities a tourist performs, i.e. those activities in which a DMO should make sure to give him all the possible assistance to tourists for obtaining their satisfaction and fidelity.

### 3.4.2.1 Innovative ICTs for the Longobard Itinerary

This section describes two innovative ICTs applications that could be implemented in the Longobard Ways across Europe tourist experience:
**Longobard Ways virtual destination card:** The Longobard Itinerary experience can be digitalized by means of a virtual tourist card. Tourist will be able to buy every combination of services online and to make use of them simply scanning the QR code they receive after the payment. The QR code will be accessible from a personal account, so that tourists can show it from their smartphone either via their personal area on the website or through the virtual card function of the Longobard Mobile Application. For the success of this business model, the involvement of the majority of the stakeholders in the DMS is fundamental, together with their coordination and integration, which are among the most challenging DMO responsibilities.

**Complementary currency – Longobard Points:** Complementary currencies are agreements within a community to accept something else than national currencies as a means of payment. The community in this case is composed by all the stakeholders of the Longobard Itinerary together with all its tourists and citizens. It will be possible to pay for services on the itinerary also using Longobard points, through the personal account. The Longobard points can be obtained by fidelity challenges (visit all the museums in a cluster, coming back to an attraction with a friend, etc.) or alternatively converting euro to Longobard points to increase the longobard points availability. The usage of longobard points is managed by the DMS and is encouraged by a series of initiatives of the DMO.

**3.4.2.2 Phase 1: Pre trip – Pre decision**

In this phase, ICTs should engage the tourist and convince him to experience the Longobard Itinerary. The objective for the DMO is to enter the set of alternatives and to win the comparison with other destinations.

**Website:** An inspirational version of the website shows a home page with evocative pictures and videos of the Longobard Ways across Europe tourist experience, and provides essential information and argumentation for embarking on the journey. It presents also contents from social networks and reviews by other happy tourists, together with interviews with testimonials. A good example of inspirational home page found in the empirical analysis is the Tirolean website. The existing website already shows inspiring images, but there is no trace of videos nor of contents remanding to the tourist experience, with people living the destination.

**Social media:** social activity contributes at increasing the popularity of the itinerary, thus increasing also its inspirational power. Initiatives like video and photo contests, #MyLongobardWay page and testimonials involvement promoted by the DMO have an enormous diffusion power. Moreover, the presence in online communities and particularly in travel blogs and vertical blogs (archaeological blogs, historical blogs, etc.) could expand the potential visitors pool and helps
tourists in taking the decision to travel in a more conscious way. More in detail, the DMO should create and manage a Facebook page dedicated to the promotion of the destination, made popular among tourist through the utilization of every possible touchpoint. The DMO could also diffuse official inspirational videos through a YouTube account.

3.4.2.3 Phase 2: Pre trip – Post decision

The role of ICTs is now supporting the tourist in the trip organization, helping him to get the most from the experience and the DMO to improve it continuously.

Social media: Through socials, the DMO can provide ideas and suggestions about the most interesting places and experiences at destination, together with counselling and assistance in the trip organization. Some of the most fascinating experiences could be evidenced, maybe also through UGC, in order to maintain the inspiration. The stakeholders can be involved in the social activity too, with a standardized space on blogs or social networks to promote their products or services. Moreover, social networks and blogs allow creating relationships among tourists, together with opinion and comments exchange.

Big Data Analysis: It can provide essential insights about tourists buying behaviour and the most successful places and services in the destination, granting the DMO a deeper understanding of tourist needs and consequently a great personalization opportunity. Through a partnership with a specialized company, the DMO could analyse data through both streaming processing and batch processing (see Section 1.3.5.4 or Hu et al., 2014). This allows identifying the most successful products and services, the age and the characteristics of the visitors and then use the insights to improve customer segmentation and modify website contents to better fit to tourists’ expectations. Big Data Analysis would be used also to analyse past bookings data to anticipate traveller preferences and target them in real time with personalized promotional content, generating a high conversion probability.

Website: the tourist switches to the planning version of the website. DMS functionalities support the trip organization, providing tourists with all the tools necessary to plan their itinerary and purchase the desired services. The actual website, still in development phase, is not equipped with any of these functionalities.

DMS Functionalities: the DMS is the backbone for destination management, since it provides many managerial and value adding functionalities:

- Personal area: the tourist creates a personal “Longobard” account, which identifies him in his Longobard Ways experience and grants him
personalized services. The personal area, managed through the DMS, allows offering tourists personalized services. At the creation of the account, tourists’ data and preferences are collected, to reach them with personalized proposal on the website from that moment on. Logging in at every access, tourists can see their profile, the products and services booked and the number of Longobard points at their disposal. From their personal page, they are in fact able to create an itinerary, to book and to purchase products and services, without reinserting their data. Finally, the account allows also leaving feedbacks and socializing with other tourists through the destination blog.

- **Suppliers’ area**: all the suppliers interested in becoming part of the Longobard Ways itinerary can access this area and create a “Longobard” supplier account. They will then be able to insert their services in the DMS through a standard page.

- **Search engine**: The search engine allows tourists to find products, services and activities offered on the itinerary, with the possibility to filter the results according to their preferences and the assistance of an interactive map.

- **Itinerary planner**: Tourists can create, save, print and share their own Longobard itinerary, linked to their account. They can add transportation, accommodation, special events, museums attractions and services, with the proper timing on a temporal scale.

- **Dynamic packaging**: The tourist can then add to his Shopping Basket all the products and services in the DMS he desires to buy online and then purchase them in a single procedure, paying using Euro or the Longobard Points.

- **Transactional dimension**: The DMS supports money transfer and the related services from tourists to supplier, both in Euros and in Longobard Points. After having bought the services, tourist receive a unique QR code, via e-mail and on the Longobard app, which will act as a virtual tourist card.

Through the DMS, The DMO is able to control the situation and more effectively manage the relationships with tourist and stakeholders. A CRM could be a valid support for this activity.

### 3.4.2.4 Phase 3: During the trip

ICTs in this phase of the trip have the role of assisting tourists in their visit and of helping the DMO understanding and satisfying their needs. The objective is providing a seamless and personalized tourist experience.
**Social media:** Social Media are a useful tool for DMOs to assist tourists in an effective way even when they are at destination. Some workers in each area or cluster could grant a non-stop problem solving activity, so that tourists will have the feeling of being looked after in any moment of their experience. Moreover, social networks are a means to share the experience at home. This activity should be encouraged, since it brings effortless and broad promotion for the itinerary. Finally, social media could be also a tool for introducing gamification in the tourist experience. Contests with prizes requiring capturing picture of destination peculiarities and #MyLongobardWay campaigns in destination are just two of the great range of techniques to transform a simple visit in an exciting experience.

**Mobile application:** The “Longobard app” is a powerful tool for tourists traveling along the itinerary. It allows accessing the personal account, buying services online, enjoying them and receiving information about attractions and Longobard history. In addition, it includes social, mobile marketing, security and emergency functionalities. The online purchase through the app can be performed with both Euros and Longobard Points. The products or services acquired can be enjoyed showing the related QR code directly from the dedicated section of the mobile application. Moreover, it provides an offline map, able to indicate Wi-Fi hotspots or points of interests nearby through LBS. For the main sites, the App could provide also a virtual visit with Augmented Reality technology.

**Big Data Analysis:** The strong digitalization of the Longobard tourist experience has as a consequence the availability of an enormous amount of data. The Big Data Analysis system helps the DMO to interpret them and to add value to them. It represents a tool for linking digital activities with physical activities on the territory, in order to foster continuous improvement and to verify destination success by means of appropriate KPIs. For instance, the virtual tourist card utilization provides precise and effortless data about tourist interests and tourist paths, the timing of their visit and their behaviour. The analysis of this data helps the DMO in building an always-improving tourist experience, which adapts in a fast way to the changes in and habitudes of the visitors. In fact, it is possible to introduce new activities in the destination and to concurrently test the results and correct the actions. The DMO should also organize a clever data collection from stakeholders, like hotels, restaurants and museums, in order to interpret them and to have a general view about the destination situation and the performances. Another application of big data analysis to the Longobard Itinerary is the use of the system to detect problems, accidents and disservices in real time and to immediately let the visitor know (through the Longobard app and social media) about it, proposing corrective actions and alternative solutions. Finally, the analysis of tourist behaviour (especially through batch data processing) could provide ideas for new business opportunities.
Website: When the website is accessed in destination, the mobile version is automatically showed. The visitor can then check his account, visualize the itinerary planned, purchase new services, open the QR code for service utilization or find practical, touristic and historical information about the places on the itinerary. This function of the website offers then the main services also to those tourists that do not download the Longobard App.

Finally, it is important to underline that, for the success of the ICTs introduction in the Longobard ways across Europe itinerary, the presence of a technologically enabling environment is vital. Particularly, a constant internet connection must be provided to tourists. This objective can be reached through Wi-Fi hotspots installation encouragement and through a facilitated SIM card buying, with international agreements for the countries involved in the itinerary. Moreover, QR code scanners must be provided to all the interested stakeholders, in order to allow them to participate in the virtual tourist card project.

3.4.2.5 Phase 4: Post trip

ICTs after the tourist experience have the role of collecting feedbacks and of maintaining the engagement and the fidelity towards the destination.

Social Media: They are used by tourists to share and review their experience, providing the DMO with an opportunity to have an idea about customer satisfaction. The DMO and even the tourism actors can collect feedbacks and encourage tourists to share and talk to their friends about their trip, obtaining a promotion potential that could be epidemiologic.

Website and DMS: The website can encourage the visitor to come back to the Itinerary and help him organizing his return, with special offers in case of repurchase. On the personal area, a completion bar can be seen for every macro area, with the percentage of sites visited, the statistics about the most visited places in the Longobard community and the level of “completion” of the Longobard sites for every tourist participating. This kind of gamification aims at arising in the visitor the desire to come back to the Longobard Itinerary. A section of the website is instead dedicated to the online sale of typical products.
CONCLUSION

The present work aimed at gaining some insights about the influence of ICTs on destination success and management. Even if empirical in nature, it allowed having a better understanding about the relationship between destination management and ICTs utilization.

Firstly, through the literature review it was possible to explore the centrality of the role ICTs play for the activities of a DMO. From the various articles analysed, a useful overview about the complexity of a destination emerged, together with the reasons for the centrality and delicacy of DMOs position inside tourism network. The role of DMOs as coordinators and integrators of destination stakeholders can gain enormous benefits from an optimal ICTs implementation, even if for obtaining destination success and competitiveness it must be accompanied by a clever and farsighted management activity. Moreover, the literature review highlighted the new challenges imposed by ICTs to local tourism, which have as a clear exemplification the enormous power recently gained by social media and Online Travel Agencies. The literature analysis clarified also the concept of smart destination and allowed compiling a list of the requisites for an all digital destination.

Secondly, the empirical analysis allowed having some overviews and insights about destination websites with their functionalities and destination cards. Destination cards are a powerful tool for integration among the different stakeholders in a destination, allowing DMOs to give visibility also to STE. They are also at the forefront of a radical transformation in completely digitalised tools, thanks to ICTs application and to the consequent development of virtual tourist cards. Websites were found to be increasingly important for destination success, with DMOs investing in their innovation and implementation, since they are becoming the business card for destinations. Examples of DMS functionalities on the DMO websites were encountered and analysed. The Destination Management System, a renowned tool for DMOs in the literature, was found to be still very rare in the destinations analysed and even when present its potentialities are often unexploited. The reasons for this phenomenon could be an interesting subject for a future research. Moreover, about both website and destination card, a gap between international and Italian experiences emerged, suggesting the need of a reflection about Italian Tourism Management politics.

Finally, the application of the knowledge acquired during the research to a real case clarified what could be the importance of ICTs for a destination. The design of the Longobard Ways across Europe tourist experience highlighted in fact two reasons, suggesting that the implementation of ICTs is fundamental for an optimal destination management. The first motivation is the response that ICTs
were able to give to the need of a connection element creating a single conceptual entity of the itinerary in the mind of visitors. The second reason is instead the fact that it was possible to introduce a great number of ICTs typologies, supporting visitors and DMO activities in every phase of the tourist experience, starting from the research for an inspiration to the sharing after the trip. This fact exemplified how value adding an optimal ICTs implementation could be, up to the point that it can broadly influence the success of the destination inside the increasingly competitive tourism market.
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