WEB 3.0 BASED MARKETING STRATEGIES ADOPTION FOR TOURISM

Carolina Narciso, Filipe Mota Pinto, Paulo Almeida

Current web based society's behavior has being one important factor for tourism globalization. Indeed, web technologies have become indispensable for assertive marketing strategies and business objectives. Web technologies have evolved from largely static pages almost administrated by experts with html text and gif buttons (known as web 1.0) to a user centered dynamics (the ability to create web pages such as blogs, sites or discussion forums were transferred to mass) focused on ready to use contents publishing methods (recognized as web 2.0). This web based paradigm has introduced and explored the cross interest of rich interest applications (wkis, communication tools), social networking sites (social communities and folksonomies) and collaborative work (file sharing systems and web scattered applications). Recently industry and web players have been announcing the new 3.0 web paradigm dawn. The web 3.0 is assumed as next web shift, based on rich internet applications and social media, bringing them to whatsoever mobile devices, netbooks and digital signage. At this new emerging archetype the information is moving from pulling to pushing paradigm – the information is searched for filtered, personalized and delivered to end users based on explicit or implicit preferences, biofeedback and location.
The main objective of this paper is to study whether the use of Web 3.0 it would be an efficient and useful method for the implementation of tourism marketing and to evaluate direct impacts that Web 3.0 would have on costumer's decisions. Therefore we also present a study for the impact of Web 3.0 tools, both from the tourism supply and demand point of view.

Keywords: Web 3.0, Tourism, Marketing, Consumer`s

1 Introduction

Tourism players have tainted the way to reach and communicate with potential customers. Indeed, tourism markets' borders had already surpassed conventional agencies or tourism networks. Nowadays tourism players use technologies for market prospect study and work, targeted audience communication, consumers' identification or customers' relationship.
Indeed, since tourism markets have become global pulling local players to a global communication channel despite their general sparse resources.

Since some years ago, once again, web is moving her paradigm. Both consumers and business have shifted the way they purchased products and services, but more important, they have shifted the way they research, and find products and services (Tasner, 2012).

One of technologies flagships is referred as social media. As such, those technologies have introduced and providing social abilities through over web, mobile or any other digital support. Their enormous success have shaped actual society and at some way, transformed the way the way people relate to each other.

Linked to the technologies evolution, marketing had also moved towards for web and social media paradigm. Thus, has appeared, among others the social media marketing, which

basically involves the use of online social media tools— e.g., Facebook, Twitter, or LinkedIn— to reach consumers in innovative ways.

Given the increasingly large numbers of consumers using social media, businesses of all types are getting involved in social media in an attempt to reach new audiences and strengthen their ties with existing customers. However, the magnitude of resources available and the potential consequences of a failed social media marketing campaign have left many companies in a state of uncertainty (Perdue, 2010). Unfortunately, a wide range of companies from multiple sectors still do not understand social media and remain unsure of how to get involved in social media marketing.

This work intends to present technologies paradigm development and how it may be explored regarding tourism marketing web marketing strategy.

2 Technologies for tourism marketing

Tourism is a complex artifact, that cannot be tested it beforehand. Thus, many kinds of information are intensively required from customers or consumers. Tourism products are therefore dominated by information. Information technologies have accelerated changes in tourism's industrial structure, at consumer behavior and also the way it is managed and promoted.

From tourism players, the internet is used not only for information gathering but also for multiple comparisons or arrangements with the destination and its products. Actually potential customers have better access to information resources through the web, digital technologies or social media than by traditional means.

Some authors had already introduced sophisticated levels of technologies regarding tourism marketing development, as such: the ease with which information about facilities and events can be accessed is a critical component of a destination's success and visitor satisfaction(Sheldon, 1993); Internet will have a fundamental impact on the way destinations are marketed because the real business behind travel is information (Pollock, 1995);or, elements for a successful web site development (Benckendorff, 1998).

In effect information technologies have provided tourism organizations a global markets access: nowadays any destination might be visible and comparable worldwide through web permanently. Websites, social media pages, blogs, or any other kind of presence is a significant marketing tool for reaching the bigger market.

Despite the amazing world of opportunities, technology has also brought an increase in global competition. From one side web global communication media has provided opportunities for business growth and, by opposite, threats to the destination management.

Actually tourism industry must be fully attentive and compromised to changes of consumers' demands and building B2C online relationships provided and supported by a marketing strategy.

This is the significant awareness to have in order to foster their competence as a global market player. Online communication has to flow frequently between the supply and demand sides, within each side, and across the market place. It is no exaggeration to say that tourism is impossible without the web marketing strategies. Currently, organizations who could offer value to the right customer segments and are capable of e-tourism management would achieve tourism objectives successfully (Tanaka, 2011).

3 Web technology paradigms

The original internet was seen as a tool for business and utility. Webmasters created static websites and users visited and viewed them. Communication was between webmaster and client. On that time internet players focused only to get as much information as possible. Moreover, users' communications possibilities were combined between e-mail, forums or blogs.

With web 2.0 emerged a new strand: social web and social networking (people and communication centered). That new kind of technology paradigm came into the users' life, empowering their communications (Ryan, 2005) and their ability to produce, share and comment contents. It was then possible to sanction that web 2.0 has revolutionized the new generations creating almost a "new welfare" in which all communicate and are connected. Also, consumers' way of life eventually undergo some changes: they have greater access to information through different new media like computer, mobile phone, tablet, custom web applications and services, among others. As such, a new consumer mindset with a more closely technologies linked, and in more informed, critical and demanding (Sayre, 2010). Indeed, since users have been acting simultaneously as contents producer and contents consumer a significant dynamic has also take apart: social

This media paradigm paradoxically has introduced the concept of respect in society, based on web technologies, but also of personality and identity subjects: there are many people who identify himself with web communities (e.g. Facebook or LinkedIn) but seek recognition or even personal reward in virtual communities (e.g. second life). Such user identity is therefore registered in every database system working on backstage supporting all social web based technologies (Table 1). Users' action space it is very wide and powerful, allowing them to share, communicate and involve on social relations at global dynamics (and also virtual).

	Web 1.0	**Web 2.0**	**Web 3.0**
Actions	Information delivery Availability	Share Communicate Involve Global Social relation	Information coordination Subject oriented search Context results
Digital space	Corporate industry	Personal	Common profile

	Corporate business Skilled management	Community Social media Social Networking	Geo location oriented subjects One-size fits all social profiles
User Identity	Limited Casual Anonymous (almost)	Database everything Data oriented Cross DB informative	Privatization of data Web security level Secure access
Platform	Documents Files Sites and blogs	Social media Multimedia contents Systems integration Interoperability	Social web Web society

Table 1 web paradigms main characteristics

The web 3.0 might be viewed as the silent revolution of technologies. This paradigm is based on extrapolation of data, content and technology tools for semantics objectives. The action zone has changed from the font-office to the back-office in which computers become capable of analyzing all data on the web - contents, links, and transactions between people and computers: the “semantic web" generation, where’s machines are talking to machines (Tim Berners-Lee, 1999).

3.1 Reasons for users wish it to evolution of web 2.0 to 3.0

Despite many internet are still becoming familiar with many web applications, web paradigm and evolution is on the road and the new web 3.0 paradigm is starting to demonstrate the web 2.0 loopholes such as (Tasner, 2010):

- *Oversaturation* of users going to nowhere playing around with many different applications with the same content. In spite of such traffic around the web is welcome, marketers had just starting wondering how to target them and reach them: quite difficult with in such crowd. As example facebook is a powerful marketing tool just only when you know how to use it to reach out specific people or groups of people.
- *Misconceptions* and rumors created in the crowd of web 2.0 lacking for some reasoning might be very dangerous for marketing professionals. Those ideas usually involve large volume of users that are very difficult to reach using web 2.0 marketing methods.
- *Time*. Actually it almost possible to state that for a short lapse time available to get information, users are dying in applications contents (posts, video, tutorials, etc..) starving for information. As users have become more and more engaged with applications they have got more distracted by all the noise around minus important subjects.
- *Interaction*. During the last years users have been enjoying many different communication platforms until the moment that their contacts behave in anarchy.

Since everyone has is own preferences to communicate actually in a group of ten users, almost seven use different applications for. Therefore Web 2.0 interaction undefined preference has become a stint on users ability for easy communication.

- *Openness*. A web 2.0 openness characteristic has become one of the most loopholes for users. Actually is often to get some "search suggestion" based on previous e-mail sent. That means users are becoming exposed and their more private human nature has started to become in risk. The web 2.0 openness has become a sticking limitation.

4 The Web 3.0 Paradigm

Web 3.0 terms has been coined to describe the evolution of web exploration use and interaction from background perspective (Naik & Shivalingaiah, 2008). Thus, a web back-office upgraded is expected to afford such behaviors and expectations from technology. Web 3.0 is defined as the creation of high-quality content and services produced by gifted individuals using web 2.0 technologies as an enabling platform (Berners-Lee, T., & J. Lassila, 2001) .

Actually, Web 3.0 is a term that is used to describe various evolutions of web usage and interaction along several paths. At this state of the technology's art users' action is subject oriented and based on context results. This information coordination ability is realized on web 3.0 digitals space, through common profile or geo location subjects. On context of digital convergence (one-size fits all social profiles) users crave security concepts and well-defined access due data privacy among web society behavior (Table 1).

Some of the most relevant technology concepts that will enhance web 3.0 paradigm are:

- *Ubiquity:* as an advanced computing concept where computing is made to appear everything, everywhere, all the time. The underlying technologies to support ubiquitous computing include web, advanced middleware, operating system, mobile code, sensors, microprocessors, new input/output and user interfaces, networks, mobile protocols, location and positioning and new materials. Ubiquitous computing evolves a wide range of research topics, as such sensor networks, distributed computing, mobile computing and networking, location computing, context-aware computing, human-computer interaction, and artificial intelligence (Poslad, 2009);

- *Content by location* it is systems' ability to receive and to deliver information (contents) based on location data or/and user's context (client system). It implies a deeply contents description though a set of parameters. Location concept evolves the GPS (global positioning system) technology. User's context evolves metadata description regarding contents use or user profile. Also, devices profile are considered

regarding contents availability and delivery. Mobile learning research has long understood the importance of locational context and the objects found in that location, to the process of meaning-making (Clough, 2010) and over recent years the capabilities of location-aware technologies has dramatically increased;

- *Geo reference action trigger* holds the capacity to chain actions throughout web applications and devices. Geo reference refers the ability to have adaptive delivery systems focused and activated by effect of location definitions (slightly different from content by location objectives). Combining GPS and digital compass technologies can provide a basic functionality for locating someone holding a device and computing their orientation within that environment. Action trigger expects to engage the end user across a set of pre defined linked contents. The use of this concept will therefore attend to surprise the user at any time based on site characterization where and according to your profile interests;

- *Augmented reality at mobile devices:* worldwide sold mobile devices have already exceeded the number of worldwide inhabitants. In addition mobile technologies development has been impressive: easy to use, huge processing capacity, multiple capabilities or enhanced valences are only few a much innovations available. Augmented reality on mobile devices is also stated as the technology capacity to extend human sense and abilities. At technology relevance it was the highest-rated topic, with widespread time-to-adoption being only two to three years (Johnson, Smith, Willis, Levine, & Haywood, 2011);

- Applied semantics at technology's backstage having a knowledge base (normally ontologies) about the meaning of web sources' contents stored in a machine-processable and interpretable way. An ontology is an explicit specification of the conceptualization of a domain (Guarino, 1995). An ontology is thus engineered by – but often for – members of a domain by explicating a reality as a set of agreed upon terms and logically founded constraints on their use (Mika, 2007). At web 3.0 paradigm, semantics are undoubtedly the logic support for all end-user aware-context and content by location information ability;

- Enhanced web and application security through a unified identification system (already started by application reference login). Besides some bio technology authentication

systems are ready to be integrated throughout hardware developments. Such Biometrics (or biometric authentication) refers to the identification of humans by their characteristics or traits. Biometrics is used in computer science as a form of identification and access control. It is also used to identify individuals in groups that are under surveillance (Jain, Ross, & Nandakumar, 2011).

5 Web 3.0 and Tourism Marketing

Web paradigm may play an interesting and powerful role for tourism marketing objectives. Therefore, its global capacity to spread contents and to endorse contacts can support large spectrum of marketing activities and to provide for tourism players new tools for a competitive market.

5.1 Tourism marketing web 3.0 technology's structure

For tourism marketing based on web 3.0 it was adopted a multi layer architecture approach (Figure 1) in order to better illustrate technologies requirements and constraints. On that base, as depicted bellow, it was identified three different layers: technology repository; contents production and technology tube.

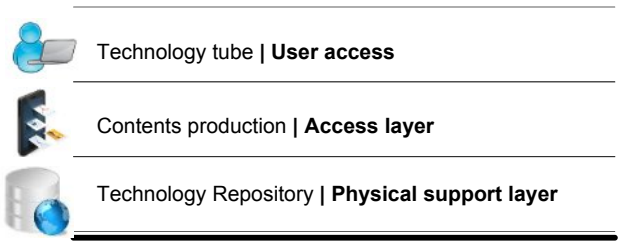

Figure 1 web 3.0 paradigm technology layer

On grounded layer technology hardware systems and devices carry physical support for all web communications, networks support, local or remote applications. This layer represents all physical efforts needed to guarantee for a possible social technology exists. Thus, just before to have in mind any approach for technologies use or adoption it is unavoidable to define and achieve all physical requirements.

The contents production layer holds all data and information necessary for web 3.0 existence. At this level several heterogeneous systems are used to provide a full bi directional contents

dynamics from production to validation schemas. Users or systems administrators have to have access for contents production but also for their validation and metadata endorsement.

The top level layer or technology tube encompasses all user interfaces and contents access doors. From this top layer users would be able to among others: to reach search results or expected information; to be suggested by recommendation systems throughout context-aware location algorithms and GPS technology; to securely share their experiences and retrieve contents related similar information.

5.2 Web 3.0 based tourism marketing model

Digital communication ability is one of the most important factors for a successful web strategy adoption. Based on proposed model it would be possible to consider the follow workflow (Figure 2) towards a tourism related community activity:

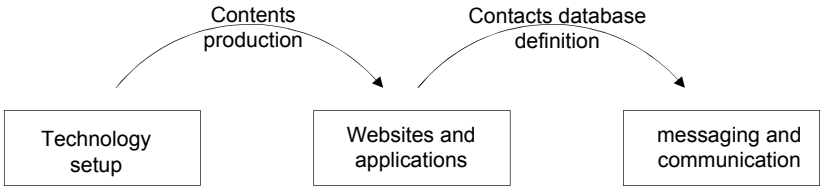

Figure 2 tourism marketing workflow

Technology setup tasks would include a set of websites and applications development regarding future consumers and customers marketing activities. These set of "web presence" represent all tourism existence at web paradigm. That is, websites are the public place where's identified user or anonymous might reach when performing their search. Applications (web, mobile, ipTV or any other) strengthen the capacity of tourism player to entail potential consumers and keep in touch actual customers.

Contents' production is one of the biggest challenges for the digital challenge. Contents activity is the key reference for any web marketing strategy. Indeed any web site or application without continuous update rapidly becomes obsolete and jejune at the web users' perspective.

Then messaging and communication will arouse as the digital marketers' heart beat rate. Messaging systems encompass email platforms, mobile platforms, forums activity or any space where positive message might be posted and linked. Communication holds all efforts for contents delivery regarding effective user profile and context-aware location. Thus, database

systems based on web sites or applications records are expected to reveal as an important source of data and information.

6 Conclusions

Along this works it was shown that there are multiple and possible approaches for tourism marketing development through Web 3.0 paradigms. Considering actual social behavior and technologies tendency it was also clear that it would be an efficient and useful method for the development of tourism marketing strategies. Tough the impressive rate of technologies development this paradigm sets successful results on hands of web technologists, marketers and, the most important, users. Indeed, on web 3.0 paradigm consumers or customers are challenged to share their contents and experience throughout intelligent systems capable to deliver the correct message at the right place on the exact moment.

7 References

Benckendorff, P. (1998). *Destination marketing on the Internet: A study of Australia's Regional Tourism Authorities.* James Cook University.

Berners-Lee, T., H., & J. Lassila, O. (2001). The Semantic Web. *Scientific American*, *284*, 34–43. Retrieved from http://www.sciam.com/article.cfm?id=the-semantic-web&SID=mail&sc=emailfriend

Clough, G. (2010). Geolearners: Location-Based Informal Learning with Mobile and Social Technologies. *IEEE Transactions on Learning Technologies*, *3*(1), 33–44. doi:http://doi.ieeecomputersociety.org/10.1109/TLT.2009.39

Guarino, N. (1995). Formal ontology, conceptual analysis and knowledge representation. *International Journal of Human and Computer Studies*, *43*, 625–640.

Jain, A. K., Ross, A. A., & Nandakumar, K. (2011). *Introduction to Biometrics* (p. 311). Springer-Verlag. Retrieved from http://www.springer.com/computer/image+processing/book/978-0-387-77325-4

Johnson, L., Smith, R., Willis, H., Levine, A., & Haywood, K. (2011). *The horizon report 2011* (p. 32). Austin - Texas. Retrieved from http://net.educause.edu/ir/library/pdf/hr2011.pdf

Mika, P. (2007). Ontologies are us: A unified model of social networks and semantics. *Web Semantics: Science, Services and Agents on the World Wide Web*, *5*(1), 5–15. doi:10.1016/j.websem.2006.11.002

Naik, U., & Shivalingaiah, D. (2008). Comparative Study of Web 1.0, Web 2.0 and Web 3.0. In *6th International CALIBER 2008* (pp. 499–507).

Perdue, D. J. (2010). *Social Media Marketing: Gaining a Competitive Advantage by Reaching the Masses*. Liberty University. Retrieved from http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1135&context=honors

Pollock, A. (1995). Occasional studies: The impact of information technology on destination marketing. *EIU Travel and Tourism*, *Analyst*(3), 66–83.

Poslad, S. (2009). *Ubiquitous Computing Smart Devices, Smart Environments and Smart Interaction* (p. 455). John Wiley & sons.

Ryan, P. S. (2005). Wireless Communications and Computing at a Crossroads: New Paradigms and Their Impact on Theories Governing the Public's Right to Spectrum Access. *Journal on Telecommunications & High Technology Law*, *3*(2), 239.

Sayre, J. (2010). Web 3.0 Smartups: the Social Web and the Web of Data. *Midwest Web 2.5*. Retrieved from http://jeffsayre.com/2010/09/15/web-3-0-smartups-the-social-web-and-the-web-of-data/

Sheldon, P. J. (1993). Destination information systems. *Annals of Tourism Research*, *20*, 633–649.

Tanaka, A. (2011). *Comparative Study of e-tourism between Austria and Hokkaido*. Modul Vienna University, austria. Retrieved from http://www.modul.ac.at/uploads/files/Theses/Master/Thesis-2011-Tanaka-Akiko.pdf

Tasner, M. (2012). *Marketing in the Moment* (p. 224). Finantial times Press. Retrieved from www.marketinginthemomentbook.com