

Use of twitter and Facebook by top European museums

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Abstract: *With social media becoming so pervasive, museums strive to adopt them for their own use. Effective use of social media especially Facebook and Twitter seems to be promising. Social media offer museums the possibility to engage audiences, potential and active visitors with their collections and ideas. Facebook and Twitter are the market leaders of social media. This paper records the top European museums and their Facebook and Twitter accounts. It records the use of the two media, and by applying statistical analysis it investigates whether Twitter use is in accordance to Facebook use. Findings reveal that this is not the case. By using Principal Component Analysis and Cluster Analysis the paper finds that there is, however, a distinct group of top museums which manage to excel in both media mainly by adopting carefully planned strategies and paying attention to the potential and benefits that social media offer.*

Keywords: European museums, Facebook, Twitter, performance, activity, popularity.

JEL Classification: L83, M1, O1

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1 INTRODUCTION

Nowadays, the use of Information and Communication Technologies (ICT), web and social media are transforming all museums' operations and are enhancing their traditional functions (Hung et al. 2013). Social media are a natural complement to the work museums are doing on site and enable the implementation of educational, marketing and engagement-focused practices (Kidd 2011; Langa 2014). Use of social media aims at "creating an environment in which museums improve people's lives by facilitating the construction and strengthening of diverse communities, and by supporting social interaction among members of those communities" (Srinivasan 2009). Thus, museums are trying to keep up with this changing environment and to implement social media to their benefit (Effing et al. 2011) and use Facebook, Twitter, Flickr, Instagram, YouTube and the other

platforms in order to communicate their activities and exhibitions, organize participatory projects, conversations and debates, get more global audiences and potential visitors, grow institution's reach between and around individuals and communities, build and sustain communities of interest around the museum (Kidd 2011; Spiliopoulou et al., 2014; Tuğbay 2012; Villaespesa 2013). Chung et al. (2014) identified three distinct marketing applications for which social media are being used by museums: building awareness, engaging with the community, and networking. Moreover, the challenging economic times of recent years has significantly affected museums due to the cuts in public and private funding and has put increasing pressure on them to widen their appeal and to attract more visitors (Chan 2009; Garibaldi 2015; Goulding 2000). Thus, museums explore alternative ways to communicate effectively, and at low cost, increase attendance levels and self-generated revenues

(Silberberg 1994). In this context, social media seem to respond to this new demand (Garibaldi 2015).

As social media are two-way communication channels, they provide museums with a flexible, personalised and interactive way to connect their communities with their collections, to collaborate and engage in dialogue with the public and an opportunity to become more social and participatory (Capriotti & Kuklinski 2012; Huvila 2013; Trant & Wyman 2006). The flexibility and the ease of use of social media platforms have resulted in public's active participation and creation of user generated content (Agichtein et al. 2012; Fletcher & Lee 2012). User generated content is a powerful means for connecting visitors with the content and ideas in a museum (Durbin 2016). Social media offer the possibility to museums' visitors to express their experiences, share their memories and observations, upload their own paintings or sketches, photos and videos taken during their visit. In this vein, use of social media transforms visitors from passive observers into active participators, content creators and museum's ambassadors (Holdgaard & Klastrup, 2014; Kidd 2011; Villaespesa 2013).

Facebook is the market leader of social media. It is the first social network that has surpassed 1 billion registered accounts. On April 2016 Facebook had 1.65 billion monthly active users (Statista 2016) and five new profiles are created every second. Facebook users are active and consistent in their visits to the site as 1.09 billions of Facebook users log onto their accounts daily, making them a promising audience for marketing efforts (Zephoria 2016). In a museum's marketing strategy, Facebook is more than an advertising tool offering opportunities for direct communication with audiences, maintaining long-term presence in their consideration, and involving target audiences at the core of the museum experiences (Dudareva 2014).

Twitter is the most popular microblogging platform with more than 1.3 billion registered users (Smith 2016) and more than 320 million monthly active users (Statista 2016). These numbers indicate a large potential audience for museums that choose to embrace Facebook and Twitter (Whelan 2011). Museums were attracted by the ease of use of the platform and from the potentially large audience and started joining Twitter. By the start of 2010, over 1,000 institutions in 34 countries had joined Twitter (Museum Marketing 2014) and this number grows exponentially.

"Participation, communication, and audience incentive will need to be considered together if social media are to provide viable and sustainable opportunities for the museum" claimed Russo et al. (2008). Active participation is a key aspect for the effective use of social media and an important strategy for museums (Whelan 2011). It is not only a matter of the audience but of the museum as well.

As social media appeal to present, future and potential museum visitors, it is interesting to understand their use by museums (Lossing 2009). However, research on the field is limited. Thus, the paper aims to fill this gap by recording and analysing quantitatively the performance indices of the top European museums' Facebook and Twitter accounts. It describes the activity and performance of these accounts and it associates their Twitter and Facebook performance. Next it associates Twitter and Facebook performance to their general popularity and impact. Differentiations among museums

regarding performance are reported. Finally, applying Principal Component Analysis and Cluster Analysis the paper describes a group of museums which excel in both social media.

2 RESEARCH ON MUSEUMS' USE OF SOCIAL MEDIA

Use of social media by museums seems promising. The adoption and adaption of social media is an important agenda throughout the museum's sector (Pett 2012), thus previous studies tried to investigate social media use by certain museums. Brooklyn Museum aims at acting as a bridge between the rich artistic heritage using new and traditional tools of communication, interpretation, and presentation. It utilizes social media to reach out to young audiences and to provide interactive learning tools and relevant forms of interpretation. Museum efforts have for the most part been successful, despite a very modest budget. Museum's experience shows that in order to be a good community member, museum need to participate by reading comments, posting responses, joining groups, providing a steady stream of fresh content being prepared for both the good and comments and being open to constructive criticism (Caruth & Bernstein 2007).

Pett (2012) using British Museum as a case study, attempted to dictate why and how museums should use social media. British Museum is the United Kingdom's most visited visitor attraction and aims to be: "A museum of the world for the world" (British Museum 2008, 3). By using social media, British Museum attempts to meet its mission statement (Pett 2012). British Museum uses social media to offer access to digital content, communicate ideas, encourage and facilitate discussion, and market to a world-wide online audience. Pett (2012) claimed that when social media are used correctly, the results are extremely beneficial to a museum, but not every museum can follow the same approach and mentioned "regardless of the exact details, a successful social media strand to museum life demands clear strategy, commitment, resources and personnel, directorate buy-in, marketing nous, a unique selling point (such as a particular collection) and a fan base to cultivate". Natural History Museum of Florence is a small-medium sized cultural organization that has engaged relatively early with social media. The museum maintains profiles at Trip Advisor, Flickr, YouTube, Facebook, Twitter and Foursquare. Lazzaretti et al. (2015) investigated the role of different social networks within the museum's communication activities and analysed them through direct interviews. The analysis confirmed that Natural History Museum of Florence use social media as an instrument for communicating and promoting museum's activities to actual or potential or visitors, rather than as an instrument of accountability and stewardship towards a broader range of stakeholders. These findings are consistent with the findings of Fletcher & Lee's (2012) survey of American museums' use of social media. Results indicate that involvement with social media is considered important. However, American museums use Facebook and Twitter mostly as one-way communication channels. Their social media strategies are focusing on event listing, posting

reminder notices, displaying online promotions and announcements, and reaching larger or newer audiences by increasing the number of fans. The adoption of specific strategies may be due to the conservative attitude of museum curators, who seem concerned with protecting of museums' collections from the proliferation of user generated content (Lazzeretti et al. 2015). The presence of Catalan museums on social media is also limited. Only 60% of them present a social media profile of their own, and the majority are significantly lacking feedback from their followers. Facebook followed by Twitter are the social media platforms that Catalan museums have a profile. Catalan museums allow users to vote with 'likes' for the exhibited artworks or activities organized, to add comments and to share them with other users.

Even though all museums allow Internet users to participate with comments and uploading images, there are filtering mechanisms on the content that users can add and none of the museums allows tagging artworks with keywords (Badell 2015). Lotina (2014) who examined how museums in Latvia use online channels for participatory activities recorded a similar situation. Latvian museums strive to provide learning for their audience, introduce and share values, and promote their products. However, she concluded that 'additional encouragement for the users' created contents, online community building and a wider usage of participatory tools is still needed'.

User generated content of Facebook profiles of Danish art museums, was investigated by Schick & Damkjær (2010) and found limited and of poor quality. The authors mentioned "most of the discussion rarely advances beyond small talk and the content shared lacks any immediately apparent theoretical or cultural importance" (37). Facebook is used by Danish art museums as a channel to reach potential and active visitors and not as an environment to interact with them. Gronemann et al. (2015) claimed that Danish museums use Facebook as a 'message board' offering brief visual and textual snippets aiming at establishing and maintaining a community of followers. Audience engagement and interaction is advanced when the museum acknowledges its catalysing role and incites and supports the communicative process. It is important for the museum to openly invite comments; follow up on answers even those that deviate from the expected; and finally ask questions only when really does not know the answer.

US museums also use Facebook as a platform for distributing information about their programmes and topics relevant for their collections. Museums' posts intend to inform and prepare people for the physical visit, reinforce the experience after the visit, or create independent, online experiences. Information developed on museums' websites and distributed through Facebook engage users the most (Kurtović & Miklošević 2015). Russo & Peacock (2009) investigated users' engagement with museums social media profiles and highlighted the fact that social media are creating new relationships between museums and the public. However, in order to create sustained participation in social media, museums need to reconsider their relationships with the public and explore user motivations and intentions for participation in social media activities. They claimed that social media should be viewed as living systems. Thus, it is a

challenge for museums to support the health of the ecology of the systems by maintaining the right level of contribution, understanding and nurturing their dynamics and carefully examine interests, motivations and rewards that drive others to the systems. In this vein, Damkjær (2010) suggested that a museum should not see itself as a static museum space, but rather as a dynamic museum place in order to create a collective culture.

Becoming a dynamic collaborative museum place indicates that the museum comes into being in the interaction between the users and the museum in an ever-changing process. In a collaborative culture, social media can be used for content creation (Kidd 2011) in the vein that not only the museum creates museum content online, but also the online audience have a voice in the content of a museum.

Through social media 'power of the crowd' is exploited for the museum's and the audience's benefit (Nierenberg 2014). However, a gap exists between the possibilities offered by social media and their use by museums (Kidd 2011). "Engaged audiences are a cornerstone in the foundation of a strong arts ecosystem" claimed Brown & Ratzkin (2011, 8). Thus, museums may support social tagging of their collections, and provide access based on the resulting folksonomy in order to open museum collections to new interpretations that reflect visitors' perspectives rather than museum's ones. In this way, the co-operation of museums and visitors may bridge the gap between the professional language of the curator and the popular language of the museum visitor, and may help individuals to see their personal meanings and perspectives in public collections (Trant & Wyman 2006). The level of dialogic communication by 120 museums in Spain was also investigated by Capriotti & Kuklinski (2012). They found that museums are not using all the advantages offered by the web platforms and social media applications regarding interactive, multidirectional and symmetrical communication. Museums make a very limited use of social media. They use social media mostly for one-way communication and share passive information.

Cross-country studies have also been conducted to investigate museums' social media use. Lopez et al. (2010) investigated presence of Web 2.0 spaces in museum websites. Two hundred and forty museum (arts, natural sciences, social sciences, and specialized) websites in Italy, France, Spain, England, and the USA were analysed. A low level of diffusion, especially in Europe was recorded. Significant differences in the use of Web 2.0 tools were also recorded among countries and different museum categories. Bocatius (2011) focused on the question 'What kind of Web 2.0 elements are already being used for Museum Education Services on-line'. She took into consideration the Jewish Museum in Berlin, the Städel Museum in Frankfurt and the Brooklyn Museum in New York. The findings from the case studies indicate that adoption of Web 2.0 by museums is still at an early stage but museums are getting more and more aware of it.

The use of social networking services by art museums and their effectiveness as marketing tools was investigated by Chung et al. (2014). Twelve museum staff participants in the Midwestern United States were interviewed. Three distinct marketing applications were identified for which social

networking services were being used: building awareness, engaging with the community, and networking. They claimed that Facebook is suitable for longer, richer, and more conversational information, while Twitter is suitable for 'spreading small amounts of information that may be time-sensitive, such as events of the day, exclusive offers from the museum store, or a special tour of the exhibition'.

Most museums are not taking advantage of the opportunities that Twitter offers mentioned LaMagnetica (2014). This digital marketing agency specialized in e-business consulting conducted a worldwide study to investigate if museums form a community or several different communities on Twitter and identify the main criterion that explains the observed community structure. Museums main pattern of relationship is local and communities match country groups. Thus, the main criterion for explaining community structure is country, not language. Topic plays a secondary role on interaction patterns. Principles of the small world apply in Europe, US and Canada, and it makes Twitter a very useful tool for museums wanting to engage with other museums worldwide, sharing experiences and learning from other museum's experiences.

Level of engagement and museums' relationship building was investigated by Langa (2014) by employing quantitative counting and categorization of content tweeted by a purposeful sample of 50 museums. Most the museums tweet several times a day focus on original content in their Twitter feed and the highest portion of them are cross-referencing social media platforms in their Twitter postings, like Instagram photos and Facebook posts. Regarding network expansion half of museums have a higher number of followers than the institution follows. Finally, six dimensions: count, reliability, content, findability, frequency and engagement were used to identify the level of engagement. Two types of activities were observed: participation such as museum replies to users who had already posted to the museum account and dialogic activity between a museum and a user.

Strategies that are used on Twitter to engage audience by the Smithsonian's Hirshhorn Museum and Sculpture Garden were investigated by Osterman et al. (2012). The two museums use Twitter in a consistent manner, focusing on: sharing links and resources, publishing upcoming activities and announcements and museum staff commentary or criticism. Moreover, they are trying to form active two-way communication and to engage creatively the public to utilize new social media tools. Villaespesa (2013) investigated the significant role that Twitter played during the festival 'Art in Action' at 'The Tanks', Tate Modern's new space dedicated to live art. She analyzed the tweets that mentioned 'The Tanks' during that period and covered the process of collecting, coding and analyzing the data following three different lines: Twitter as a communication tool, as a conversation tool to engage with the visitors and as an audience research tool. Espinós (2016) investigated the growth of a museum's community in social media and claimed that growth mechanisms related to triadic closure provide most new followers. Next are Twitter recommendations. Being a museum among the choice of tailored recommendations for new users from a certain location and within a topic of interest allows for a much faster

growth. Surprisingly, mentions and retweets allow only for a slow growth and account for a small share of growth in fast-growing museums. Thus, he proposed that a connection with a big player will create thousands of new triadic relationships that for the smaller museum are thousands of opportunities for growth and word spread.

These paper records indexes of Twitter and Facebook accounts of European museums, it presents their status and performance and locates the accounts that are most effective in exploiting the opportunities provided by the two social media.

3 RESEARCH METHODOLOGY

Europe.org offers a list of the top European museums (<http://www.europe.org>). The list includes top museums because of their popularity and the famous works of art they have in their possessions. Starting from this list a recording was done during 2-5 March 2015 and fifty-seven museums were recorded. For each museum, its Twitter and its Facebook account were recorded, if they existed. Next, several Twitter and Facebook activity indexes were also recorded. These include Tweets, Following, Followers, Favorites, number of Lists, Photos and videos, Topsy score (for the period 2 Feb to 4 March), Talked with, Top content (8 tweets), Tweets per day, Likes Facebook, Visits Facebook, Talk about Facebook. These are available indexes that can be found either directly from the social media or using specific apps such as Facebook Insights or using established commercial applications such as Topsy.com and Twtrland.com. Number of followers of an account, number of other accounts an account follows (following), and number of tweets, are recorded since they are indicators of Twitter performance. Topsy score is a complex index provided by Topsy.com social search and analytics site, which takes into account the retweets and mentions that matter for a particular Twitter account, as a measure of users' community involvement for this account. Top content 8 tweets is the total number of replies that these tweets get for the eight most popular tweets. It is a measure of effective reach that an account has to its followers. Number of followers the accounts talked with is the number of conversation they had on Twitter. These indexes were provided by Twtrland.com, Topsy.com and by using of NodeXL for Windows.

Finally, the rank of each museum in the specific list was recorded along with Alexa global rank. These are respectively measure of the general popularity of the museums and the popularity of their official websites.

The findings include the presentation of descriptive statistics of the abovementioned indexes. Next, a Principal Components Analysis (PCA) with Varimax rotation was used to produce components of the indexes in order to better describe and understand the activity of the Twitter and Facebook accounts. The formation of these Principal Components (PC) reveals patterns of social media use by European museums, which are discussed and commented.

The Principal Components (PC) are associated with the real world and web popularity of the museums, using correlation coefficients of the PC with relative ranks within the museums

list and the Alexa global rank. The results are discussed and comments are made.

At the last step of the analysis, an effort is made to distinguish museums that excel both on Twitter and Facebook as well. Using Two-step cluster analysis of the produced PC, a group of the most active accounts is located. This group consists of the accounts that have on average high values on every PC regarding both Twitter and Facebook presence. The paper describes this group of museums by investigating how the particular museums included in the group are using social media, whether they have a social media policy, etc. The paper concludes on the use of Twitter and Facebook by European museum and investigates how some museums manage to have a successful presence on social media as well as in real word.

4 FINDINGS

Below is a list of the recorded museums. Out of the fifty-seven museums, 42 have a Twitter account, 45 have a Facebook account, while 35 have accounts on both media:

The National Gallery, Musée d'Orsay, Historisch-Technisches Informationszentrum, Musée du Louvre, La Maison et les Jardins de Claude Monet, Museo Reina Sofia, Galleria degli Uffizi, Belvedere Museum, SENCKENBERG, The Hermitage Museum, KHM Wien, CCCB, Rijksmuseum, NHM Wien, Museu Nacional, Bcn, Museo del Prado, Museo L'Iber, Museum Santa Cruz de Toledo, Vatican Museums, Museums of Venice, Batak, British Museum, Polo Museale Firenze, GNM, Alte Pinakothek, MNAA, Mercedes-Benz Museum, Gallerie dell' Accademia, Wieliczka Salt Mine, Musée Toulouse-Lautrec, Tate Britain, Miniature Wonderland, Kreis Viersen, Schlösserland Sachsen, German Maritime Museum, Zeche Zollverein, Van Gogh Museum, Turm der Sinne, Camera Obscura, Galleria Borghese, Neanderthal Museum, Old Boat Lift Henrichenburg, Melngalvju nams, Palais Liechtenstein, Albertina Museum, National Archaeological Museum, Museo Bellas Artes, Muzeum Kolei Waskotorowej w Weneccji, Bodemuseum, SKD, Muzeum w Biskupinie, Guggenheim Bilbao, KremlinMuseums, Park Miniatur Zabytków Dolnego, CentrePompidou, Fundação Calouste Gulbenkian, Museo Egizio Torino.

Table 1 presents the descriptive statistics of the key variables of the analysis. The main conclusion would be that there is a great range and dispersion of the values for all the variables. Standard deviations are greater than the means. This reveals a high differentiation and diversity of the values of the used indexes among the museum accounts. Some museums are very active on Twitter or Facebook while others are not. However, mean values are statistically significantly high, providing evidence that in general the museums have a sound appearance on social media. The distributions of all the key indexes are positively skewed, meaning that the majority of the museums have little activity while there are some that are most active.

The Principal Component Analysis (PCA) with Varimax rotation resulted in forming three PC with eigenvalues over

one. Respectively, they account for 30%, 29% and 22% of the total variance of the initial variables (Table 2).

Table 1: Descriptive statistics of the Twitter and Facebook performance indexes

	Min	Max	Mean	Std. Deviation	Skewness
Tweets	3	25700	4294	5620	2.126
Following	0	42400	1965	6625	5.866
Followers	17	1350000	93215	230527	4.325
Favorites	0	11700	1306	2328	2.949
Lists	0	17	2.52	3.9	2.083
Photos and videos	0	4508	532	812	3.291
Topsy score (2-2/4-3)	0	24481	2703	6014	2.679
Talked with	0	1713	247	442	1.989
Top content (8 tweets)	0	6693	839	1575	2.396
Tweets per day	0	11.0	2.419	2.5258	1.497
Likes Facebook	62	1674620	141381	288854	3.527
Visits Facebook	21	1354105	88441	215463	4.956
Talk about Facebook	1	61669	3945	10141	4.479

The first component summarizes popularity and network characteristics of the Twitter accounts of the museums. The second PC has high loadings on Tweets, Photos and Videos, etc. It summarizes the activity of the Twitter accounts of the museums. The third account summarizes the Facebook indexes of the museums accounts.

An interesting finding is that since by construction the three PC are uncorrelated, it becomes obvious that Twitter popularity is uncorrelated with Twitter activity and more interestingly that both are uncorrelated with Facebook popularity. This means that small or large values of activity or popularity on Twitter could be associated either to small or high values of Facebook popularity. There is not a unidimensional appearance of the museums on the two social media. Twitter and Facebook are used to a low or a high degree by different museum organizations, and furthermore not in the same way or by having similar overall performance.

Table 2: Rotated components matrix for the key variables forming three Principal Components

	PC1: Twitter popularity	PC2: Twitter activity	PC3: Facebook popularity
Topsy score (2-2/4-3)	.833	.364	.298
Top content (8 tweets)	.809	.284	.390
Followers	.796	.249	.155
Talked with	.763	.520	.253
Following	.704	.004	.129
Tweets per day (Activity)	.179	.920	.076
Tweets	.280	.911	.112
Photos and videos	.404	.778	.150
Favorites	.063	.760	.197
Visits Facebook	.216	.079	.898
Likes Facebook	.401	.181	.861
Talk about Facebook	.150	.186	.810
Total variance explained	30%	29%	22%

Next, correlations are calculated between the three PC and the museums' ranks and an index of their overall web presence. The first is provided by the relative ranking in the Europe.org list which is used as the main registry of the study.

The second is the Alexa global rank, which provides an index of overall performance and popularity of the official websites of the museums. The first is an index of the real-world popularity and the second is an index of web popularity of the museums. Table 3 presents the correlation coefficients. The ranking of the museums list is significantly correlated with Twitter popularity and Facebook popularity, while Alexa global rank is significantly correlated with Twitter activity and Facebook popularity. Overall, there is evidence that social media performance is associated with the general appearance of the museums. Facebook is the medium which presents a significant correlation with both the performance indexes.

Table 3: Correlation coefficient between the three PC, and Alexa global rank and List rank of the museums

	Twitter Popularity & network	Twitter activity	Facebook popularity
Alexa global rank	-.298	-.404*	-.506**
List rank	-.413*	-.101	-.336*

(*: $p < 0.05$, **: $p < 0.01$)

Up till now the paper describes the area of social media use by museums as being diversified by means that the museums have different performance regarding each social medium, or regarding the differentiation of performance on the use of each single social medium. An interesting question to be answered is whether, despite this differentiation, there is a group of museums that do well on both Twitter and Facebook. If so, they could be regarded as the achievers in using social media effectively. To tackle this question Two-step clustering technique was used, since it automatically produces the number of clusters and it can work very well either using continuous or categorical data in a general application.

Table 4: Average values of the key variables of the analysis for the two groups of museums

	The top-9 museums on Twitter and Facebook	The rest of the museums
Tweets	12920	1944
Following	6021	1020
Followers	383500	17450
Favorites	3843	639
Lists	4.78	2.08
Photos and videos	1514	298
Topsy score (2-2/4-3)	11454	379
Talked with	892	86
Top content (8 tweets)	2892	340
Tweets per day (Activity)	5.789	1.527
Likes Facebook	586196	63642
Visits Facebook	325863	30894
Talk about Facebook	16600	1704
Alexa global rank	100477	1273275

The method produced two clusters using the three PC as the variables of the analysis. These two groups of museums regarding their performance on Twitter and Facebook are very distinct. One group contains nine museums: Museo del Prado, the British Museum, Tate Britain (London), Centre

Pompidou, Museo Reina Sofia, CCCB, The National Gallery, Musée du Louvre and Van Gogh Museum. These all have high values on each of the three PC, that is they have high performance indexes using both Twitter and Facebook. The rest twenty-six museums may have high or low scores on the PC, but not on all of them. Table 4 presents the average values of the key initial variables for the groups (clusters) of the top-9 museums and for the rest of the museums. Values for the top-9 museums are significantly higher by 2.3 to 30 times than those of the rest of the museums. On average, they are 10 times larger.

Table 5 presents average values of the breakdown of the Twitter followers of the top-9 museums as they were provided by Twtrland.com. Top-9 museums have greater percentages of Twitter followers in the categories of celebrities, power followers, young followers and women. Their audience is distinct to some extent from that of the rest of the museums.

Table 5: Average values of the breakdown of Twitter followers regarding their demographics (provided by twtrland.com)

	The top-9 museums on Twitter and Facebook	The rest of the museums
Celebrities	4.1%	1.7%
Power users	29.1%	24.6%
Casual	56.4%	61.8%
Novice	10.7%	12%
Age 12-17	7.9%	7%
Age 18-24	41.4%	33%
Age 25-34	29.8%	32%
Age 35-49	17.5%	24%
Age 50-64	3.4%	4%
Men	40.6%	53.3%
Women	59.4%	46.7%

4.1 Description of the top-9 European museums on Twitter and Facebook

As mentioned Museo del Prado, the British Museum, Tate Britain (London), Centre Pompidou, Museo Reina Sofia, CCCB, The National Gallery, Musée du Louvre, and Van Gogh Museum have the highest performance on Twitter and Facebook. It is interesting to see how these museums conceptualize the use of social media, Twitter and Facebook. Navigation through their official sites and blogs and the relative content could shed some light on how these museum organizations respond to the increasing need and benefits of using social media.

The British Museum has a strong appearance on social media including Facebook, Twitter, Instagram, Google+, LinkedIn, Pinterest, Tumblr, YouTube, SoundCloud and Spotify. The museum has announced a certain policy and code of conduct on social media (British Museum 2016). It aims to helping people engage, discuss and learn through the use of social media. There are certain rules published online for the public involved in reading and commenting the updates originally posted by the museum.

Also, the museum organizes virtual events such as the world cup Twitter strategy where objects and collections from the countries participating in the world cup are demonstrated and

“tweeted” through the museum’s Twitter account; certainly, a very good example of marketing strategy and collaboration of marketers and curators (Shore 2014). A second example is a project regarding the Day of Archeology (Pett 2011). On 29 July 2011 more than 350 archaeologists documented their working day via social media submitting posts, photographs, video etc. The aim was to demonstrate the variety of the profession of the archaeologists. Comments were posted after being moderated under the hashtag #dayofarch.

The Tate Social Media Communication Strategy 2011–12 summarizes Tate’s Social Media Communication Strategy (Ringham 2011). Tate online, through increased activity on social media and integration of them into its marketing campaigns, aims to increase public engagement and understanding, broaden the audience, address to younger people, and be one of the leaders on using social media in the cultural sector. The museum has developed a strategy regarding goals, engagement, community formation, communication and integration of social media in the marketing strategy. Tate uses mainly Facebook (five main Tate Facebook pages: London, Liverpool, St Ives, Tate Shop and Tate Members), Twitter and YouTube, and Flickr, MySpace and Instagram. On Facebook Tate posts three times a day and receives one hundred comments. Six Twitter accounts (London, Liverpool, St. Ives, Tate Shop, *Tate Etc* and Tate Kids) give the opportunity for Tate to tweet timely information, up to six times a day. Tate measures indexes of performance and popularity aiming to increase people engaging with Tate’s social media and increase traffic. The museum consults a Social Media Steering Group and a Social Media Working Group in order to evaluate, measure and develop content, and discuss policy. Tate has established also a social media code of engagement.

The Louvre uses Facebook to address to people anywhere and collaborates with Paris museums community managers to communicate the views and perspectives of experts. On Twitter, they share a closing day hash tag, reporting on what goes on when their doors are shuttered to the public (Tripadvisor 2013).

The Van Gogh Museum runs a successful campaign on Facebook since 2014. Its fans are significantly increasing. The museum uploads information and video of running exhibitions. The museum conceptualizes its presence on social media as the continuation of Van Gogh’s quality - storytelling - and exhibition of his work. The museum also uses Twitter, and Google+ (Van Gogh Museum 2014).

Overall, we can conclude that performance on social media and especially Facebook and Titter is a mix of several components which might be summarized as follows:

- understanding of the potential of social media to reaching the public, promoting discussion and engagement,
- understanding that social media is part of the organizations presence to the people,
- understanding that social media can be incorporated to the organizations marketing strategy,
- understanding that social media could reach people beyond the standard audience of a museum,
- understanding that high activity and intense use of social media as information and updates providers could enhance engagement of the audience,

- understanding that social media as new as they may be, they can also offer an effective platform for continuation of offering the original values and philosophy of the organizations and the artists exhibited, and finally that
- social media need a professional look when it comes to management and marketing issues; they are not just announcement boards but they can be moderated and their structure and contents should be taken care of, so that they can deliver up to date high quality information.

There is strong evidence that top museums on Twitter and Facebook are leading not by chance but by implementing a sophisticated and well-planned strategy, which can increase the web-visitors flow and enhance the museum reputation and the overall ranking in real world.

The examples of Tate, the British Museum, the Louvre and Van Gogh Museum offer evidence that effective social media presence comes as an outcome of the realization that social media is a must-use technology; they are the modern powerful channels to engaging the public, promoting the museums, communicating exhibitions and news, and expand the audience. To arrive to such an outcome the museums have to take social media use seriously, involve communication and marketing experts along with curators to design and implement a strategy of communications and presence of the museums, take advantage of current events in order to link museums and their exhibits to today lifestyle, without however losing touch with the original aims and philosophy of the organization. For the top European museums, a high activity of their accounts, along with posting quality content that takes advantage of current events and the modern lifestyle, implemented through a well-planned strategy might be the key to a successful presence of the museums on social media.

5 CONCLUSIONS

In this paper, an effort has been made to describe the status of use of Twitter and Facebook by European museums, to explore how Twitter use is associated with Facebook use, and finally to distinguish top museums regarding the effective use of the two social media.

The findings of the paper are in accordance with the relative literature which describes a diversified context of using social media by the museums. Not all of them exploit in full all the advantages that social media offer. However, some museums do really well. The use of both social media is diverse. Within the group of the fifty-seven recorded European museums, there are some that do not use Twitter or Facebook or use them poorly. On the other hand, there is a minority of museums that are very active in using either of the two media. However, even in this case the use of the media does not necessarily converge; intense use and popularity in one medium do not go along with activity and popularity of the other. This finding reveals that museums might use Twitter and Facebook independently and maybe without having a specific strategy. In any case, they do not have a unified or unidimensional appeal on the social media. This is interesting since there is evidence that popular museums and museums

having high traffic scores of their official websites are associated with popular and active social media accounts. There is however a group of top museums that is very effective on both Twitter and Facebook. These museums are very popular in real world. Regarding their presence on social media, they have specific policies and goals which are announced and communicated to the public. They elaborate sophisticated strategies which are the outcome of experts planning. They publish online a lot and make efforts to embrace the modern lifestyle in order to engage new target groups of audiences. Social media become a new powerful channel for marketing and addressing to people. Realizing their potential and by carefully using them may result to elevate the relative popularity ranking of the museums and establish a broader frame of interaction with the public.

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