

RETHINKING MUSEUMS IN THE DIGITAL ERA?

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ABSTRACT

Museums nowadays have to ensure a sustainable future. Apart from taking care of their collections and objectives, they must continue to be relevant and valuable to future generations. The digital environment imposes serious challenges to the traditional models set by museums. Strategies must be modified towards collaboration, iteration, and a commitment to audience engagement. Museums need to understand the interests and desires of target visitors and the communication channels they prefer. In this study we investigate what the main socio-economic determinants are of visitors of Romanian museums and how they are currently using digital tools in order to get more information before and during museum visits. Our study comprises a literature review and a qualitative and quantitative analysis based on an exploratory survey administered to 341 visitors of four major museums located in Bucharest. We aim also to identify the main factors requiring a new paradigm in museum management and we present these factors in a diagram in the last part of the paper.

KEYWORDS: *business model for museums, digital instruments museums, digital transformation.*

1. INTRODUCTION

The recorded history of museums goes back to the third century BCE, when the first known museum was opened in the University of Alexandria in Egypt. Since then the concept and culture of "museum" has developed across the world, based on human curiosity about humanity's origins and evolution. By their nature, museums as institutions have stayed conservative while the world around them has radically changed. In these fast-moving times the role of museums as preserver of cultural and historical memory of society is affected (Wilkinson, 2014). Transform, transforming, and transformative are common terms for describing museum spaces, the creation of objects on display, and experiences for visitors (Soren, 2009). Museum customers are also transforming the way in which museums interact and deal with provided cultural information. This new audience behaviour has resulted in museums shifting "from one way communication to becoming facilitators of conversation" (Hartig, 2018). Added value lies in creating an environment for interaction between artwork, visitors and society.

The traditional models of museums were based on a collection of objects, publicly funded and publicly accessible in a building. The mission of museums was to preserve and develop the collection and transmit national and global culture to the general public and to provide material available for research (Bertacchini & Morando, 2011). Museums need to balance cultural preservation with the need to participate in a continuously changing, fast-paced world (Ludden, 2014). This digital transformation can embrace many forms, from enabling museum visitors to use smartphones throughout the site to enrich their experience, to digitizing the collection and making it available online so as to engage people before or after their visits via online channels (Axiell, 2016). Museums today must not only create digital objects themselves, but also obtain the

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metadata via analogue objects – since metadata is the key to understand the cultural heritage (Klimpel, 2013).

This digital environment is forcing dramatic changes to the traditional models employed by museums. For museums, this implies the evolution from analogue to digital in every function. It not only calls for investments in new technologies, but also demands more inclusive and expansive ways of working and thinking (Levä, 2013). In the Digital Age, museums must adapt to audiences that are increasingly using technology (Bryant-Greenwell, 2014). This transition to the digital era and the new way of spreading networked digital information is likely to transform the way knowledge related to physical cultural collections is produced and managed, both by museums and users (Bertacchini & Morando, 2011). Each museum should therefore reconsider its policies in order to find the right balance between the economic value of the commercial exploitation of its digital collections and increasing the weight of its public mission (Hamma, 2005). “In an effort to be more agile, digital, and data-driven, museums are experimenting with techniques borrowed from the start-up and tech worlds and are applying them across the board. This is reflected in the design thinking that drives marketing strategy, exhibition design, and a desire to build out new revenue streams” (Ciecko, 2019, p.1).

To do this, museums need to understand the interests and needs of target visitors and the communications channels they prefer. To shed light on this, we conducted in 2018 a survey based on a questionnaire administered to 341 visitors of four major museums located in Bucharest: the Grigore Antipa National Museum of Natural History, the Dimitrie Gusti National Village Museum, the National Museum of Art of Romania, and the Bucharest Municipality Museum.

According to the Cultural Consumer Barometer for 2017, the most visited museums in Romania are: the art museums (46%); history museums (44%); ethnography and folklore museums (30%); natural sciences museums (24%). The four museums selected by us are the most popular, all of them being situated in Bucharest and using digital technologies in their relation with the public.

This paper is structured as follows: the first section includes a review of the existing literature on museums and museum management; the second section introduces the results of the survey and its analyses. The last section presents the main factors requiring a new paradigm in museum management. Our conclusions highlight the main challenges for museums in managing their collections in a digital environment.

2. LITERATURE REVIEW

What are museums for? Historically, museums have functioned as references of value through the preservation of artefacts. Museums are parallel mirrors: in them we see the history of the world and the alter-ego of ourselves. Whether the target subject of a museum is culture or history, science or art, nature or artefacts, bones or photographs – all museums are about humankind because humans have made them. Through their displays, installations and exhibits, museums show us how humans perceive and have perceived the world (Duke, 2014).

Museums have a fantastic potential to educate and open new horizons to their visitors. This potential is directly related to what a museum is and should be. According to ICOM’s General Assembly (2007), museums can be defined as “a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment.” ICOM acknowledges that this definition evolves “in accordance with the realities of the global museum community”; the museum concept must evolve and sometimes transform in order to survive and flourish in ever-changing societies.

The UNESCO Recommendation on the Protection and Promotion of Museums and Collections, their Diversity and their Role in Society (2015) stipulates that “...museums should be encouraged to use all means of communication to play an active part in society by, for example, organizing public

events, taking part in relevant cultural activities and other interactions with the public in both physical and digital forms.”

Museums are not only touchable, physical entities. Information technology (IT) has been in and with museums since the early 2000's and that has dramatically changed the outlook of these institutions. Now a screen touch is sometimes enough for a virtual visit. Furthermore, museums all around the world are now accessible via the Internet and social media are now integrated in many museums (Conciatori, 2014). The first entry point in the museum experience is often digital. This could mean a number of things. For instance, when marketing an exhibition, museums invite audiences to suggest new content for exhibitions or collections; creating educational experiences online; and challenging audiences to learn and share (Hartig, 2018). Digital technologies have the potential to facilitate access to museum collections, being in most cases a major broadcaster of their cultural content. Of course, this new paradigm leads to the necessity to ponder the pros and cons of excessive digitalisation versus the need of increased access. Practically, museums must reconsider their business models to capitalize on the opportunities and avoid the threats that the new digital environment brings (Bertacchini & Morando, 2011).

Today, museums look for new ways to engage visitors. Becoming more versatile allows museums to remain in closer contact with their customers and more responsive to their feedback. Dodge (2014) states that with online visits to museum websites and social media accounts far outpacing physical visits, it is time to understand that digital visitors are visitors too and both can potentially add value to museums. Other researchers (Navarrete & Borowiecki, 2016) point out that museums seeking to broaden their audience have placed their collections where the consumers are: online. By using social media channels, museums can reach far more online users than by inviting their public on museums websites, particularly those that are less well-known. One study (Marty, 2008) explored the role of museum websites for museum visitors and shows that most online visitors have rather clear expectations of the interaction between museums and museum websites. Therefore, museums managers and leaders should understand that their online presence has a direct impact on their reputation, reputation that directly impacts their bottom line: the physical visitors (Dodge, 2014).

3. RESEARCH METHODOLOGY

3.1 Objectives

Our research is an exploratory one and has the following objectives: to identify who are the visitors of Romanian museums at present; what the differences are between the characteristics of the visitors of four museums in Bucharest; how these visitors use digital tools in relation to museums, before and during their visit and what is their preferred/chosen behaviour. Thus, we elaborated and administered a questionnaire to 341 respondents who had visited one of the following museums: the Grigore Antipa National Museum of Natural History, the Dimitrie Gusti National Village Museum, the National Museum of Art of Romania, and the Bucharest Municipality Museum. The research was conducted in autumn 2018.

The importance of studying museum visitors has been recognised since the nineteenth century. The first published study regarding visitor characteristics, which was also interested in finding out their opinions about the exposed objects and monitoring the impact these objects had on visitors, was conducted in 1884 in a Liverpool museum. (Zbucea & Ivan, 2008). Recent studies highlight the fact that visiting museums onsite has been associated with several socio-economic determinants. These include: greater personal capital (as well as level of education and art education of visitors and of visitors' parents), gender (female reporting higher number of visits) (Navarrete & Borowiecki, 2016); higher levels of income (Falk & Katz-Gerro, 2015); stronger interest in institutions with better physical accessibility (Brook, 2016). According to recent cultural consumption barometers, Romanian museum visitors have higher educational and professional

training and an above average income; the majority being women, and their age is frequently up to thirty or above sixty.

3.2 Results and discussion

The demographic structure of our respondents is as follows: 59% women, 40% men, and 1% people who refused to declare their sex; 59% of the visitors were from Bucharest, 29% were people coming from outside Bucharest, 11% were foreigners, whereas 1% did not specify their residence. From the total number of respondents, 62% graduated a form of higher education, 27% graduated secondary studies, 10% graduated primary studies, and 1% did not declare the type of graduated studies. Regarding their occupation, 58% of the respondents were employed, 22% were university students, 10% were pupils, 2% were unemployed, 5% had other professions and 3% did not declare. The respondents who were between 26 and 39 years old were the majority – 37%, followed by young adults between the ages 19 and 25 – 26%. The adult respondents who were between 40 and 55 years old represent 20% from the total number of respondents whereas people between the ages 55-65 represent 5%. From our initial findings related to the visitors' profile, the following can be concluded:

- more women visit these four museums;
- most of the visitors live in Bucharest;
- those with higher education prefer to spend their free time visiting a museum.

As a first phase we investigated whether there were meaningful differences between the characteristics of the visitors from the four museums mentioned above. In order to do so, we applied chi-square tests in SPSS Statistics to verify if there is a statistically significant association between the features previously exposed and the four selected museums. The chi-square test is frequently used for testing the equality between two or more proportions in case of categorical variables (Jaba & Grama, 2004). In this type of analysis the hypotheses are formulated as follows:

Null hypothesis: Assumes that there is no association between the two variables.

Alternative hypothesis: Assumes that there is an association between the two variables.

The null hypothesis would be rejected if the p-value (the probability value or asymptotic significance) would be higher than 0.05.

As we can see from the tables below, the only variable that doesn't have the p-value less than the significance level is *gender*, with a p-value of 0.449. This means that there is no preference in choosing one of these four museums based on gender. Thus, we can conclude that there is a relationship between all other variables and the museums.

Table 1. Gender distribution in museums

	Gender		Total
	W	M	
MNINGA	87	58	145
MMB	45	36	81
MNAR	36	16	52
MNSDG	34	25	59
Total	202	135	337

Table 2. Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.649	3	.449
Likelihood Ratio	2.704	3	.440
N of Valid Cases	337		

When it comes to residency, our data show the following:

- foreigners prefer the Bucharest Museum the most (with 16% of total), Village Museum (with 11%) and Antipa Museum (with 10%);
- those from Bucharest will be most interested in the Museum of Art (75%) and the Bucharest Museum (62%);
- those from outside Bucharest will be most found in the Antipa Museum (36%) and in the Village Museum (32%) (Table 3).

Table 3. Place of residence distribution in museums

	Place of residence			Total
	Bucharest	outside of Bucharest	Not from Romania	
MNINGA	78 (53%)	53 (36%)	15 (10%)	78 (53%)
MMB	51 (62%)	17 (20%)	13 (16%)	51 (62%)
MNAR	39 (75%)	11 (21%)	2 (3%)	39 (75%)
MNSDG	33 (55%)	19 (32%)	7 (11%)	33 (55%)
Total	201	100	37	201

The chi-square test confirms that there is significant difference when choosing what museum to visit based on the visitor's place of residence ($0.038 < 0.05$), as seen in Table 4.

Table 4. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.360	6	.038
Likelihood Ratio	14.004	6	.030
N of Valid Cases	338		

When applying the chi-square test on the variables *occupation*, *age* and *education*, their p-values were also lower than 0.05 (Table 5). These variables are interconnected (many of the visitors still being in school), so the interpretation of their significant differences between groups should be interpreted conjunctively. Children seem to prefer the Antipa Museum the most, with Village Museum and Museum of Art close to it, while students are equally distributed among the museums. The elderly appear to have a lack of interest in visiting museums or facing age-related difficulties. Regarding education (even though many visitors have higher education), we can conclude that most of the visitors can be assigned into that category, mainly because of the fact that many are still in school and probably have been brought to the museums by those that are college graduates.

Table 5. Chi-Square Tests

Variable	Pearson Chi-Square Value	df	Asymp. Sig. (2-sided)
Education	30.479	12	.002
Occupation	46.716	15	.000
Age	45.603	15	.000

Those that go alone to a museum are likely to be found in the Bucharest Museum, while those with family – in the Antipa Museum and those with friends in the Village Museum and Museum of Art.

Table 6. Preferences regarding the attendance in museums

	Visited the museum			Total
	alone	with family	with friends	
MNINGA	10(7%)	82(56%)	54(37%)	146
MMB	14(17%)	35(43%)	32(39%)	81
MNAR	5(10%)	15(29%)	31(60%)	51
MNSDG	4(7%)	18(30%)	37(62%)	59
Total	33	150	154	337

The chi-square test also confirms that there is a significant difference between groups with the lowest p-value of zero.

Table 7. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.559	6	.000
Likelihood Ratio	24.819	6	.000
N of Valid Cases	337		

An interesting finding is that, although there are many first-time visitors, there is yet too big of a difference between the number of newcomers (182 respondents, representing 53.5%) and those who have already seen the museum (158 respondents, representing 46.5%). This fact could be interpreted as a positive characteristic, giving us the reason to conclude that the previous experience must have been a qualitative one. The chi-square test reveals that there is a significant difference that the visitors' origin brings about: the most people who return to museums are usually from Bucharest (p-value being $0 < 0.05$).

Table 8. Place of residence distribution among those that visited/didn't visit the museum

	Place of residence			Total
	Bucharest	Outside Bucharest	Not from Romania	
Yes	89	60	31	180
No	112	40	6	158
Total	201	100	37	338

Table 9. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.186	2	.000
Likelihood Ratio	23.725	2	.000
N of Valid Cases	338		

Some of the reasons that determined that those who already visited the museum to come back, are: the experience of the visit as such was the one that could be found in the most visitors' answers, closely followed by the degree of satisfaction that was determined by the direct interaction with the exhibits/the environment (Table 10).

Table 10. Satisfaction-generating elements

The experience of the actual visit	99
The satisfaction level felt as a result to direct interaction with exhibits/environment	70
The organised events by the museum at that particular moment	25
The possibility to experiment by being involved in various activities	17
Other	12

The museum web page represents, as a means of information, the triggering element of a museum visit (36.6%). At the same time, though, recommendations of friends (32.2%) are also important, which means that the increase in the number of visitors is also determined by the impression the museum leaves on current visitors.

Table 11. Means of information used by visitors

Website of the museum	178	36.6%
Facebook page of the museum	58	11.9%
Brochure of the museum	30	6.2%
Recommendations from friends	157	32.2%
Traditional media (radio, TV, journals, magazines, etc.)	64	13.1%

And the most searched for information on the museum website concerns especially the opening hours and the entry fee (204 responses). Other search queries relate to the available collections (143 respondents), organised events (125 respondents), the possibility of accessing online services (101 responses) and educational programmes for children (72 responses).

Table 12. Information searched on the website of the museums

	Yes	No
Collections	143	146
Virtual tours	72	216
Events	125	163
Visiting hours and entrance fee	204	84
Possibilities of accessing some online services (tickets, souvenir shop, library, etc.)	101	188
Forum's talks	28	260
Publications	49	239
Educational programmes for children	72	216
Programs for adults	2	64

Table 13. Possible actions after the museum visit

-to recommend the museum to friends and colleagues (from school, from the workplace, from social media, etc.);	251
-to participate to activities organised by the museum in the near future;	34
-to attend the event called "The Night of the Museums";	40
-others	4

Most visitors intend, after their visit, to recommend the museum to their acquaintances. The application of the chi-square test reveals, as would have been expected, that there are significant differences in visitors' preferences depending on their place of origin (for instance, a person in Bucharest will find it much easier to come back to the museum). This enquiry can become a point of reference for further research, given that the interpretation of data offers useful information in setting up a visitor's profile and in making decisions with the aim of attracting people towards visiting museums. Moreover, museums have the imperative of extending beyond the physical boundaries and of connecting with its public through digital media and through activities which merge with digital life present everywhere – on the streets, in shops or at school. When visitors move from outside the museum to the interior, physical space of the museum, they bring with them not only their own senses, but their own digital identity, and also information about their own behaviour (Giannini & Bowen, 2018). For this reason, museums are provoked to reinvent themselves: a new business model for museums becomes necessary, in the circumstances in which the interaction between the real and the digital and the active implication of visitors are essential for any museum, seen as a business. In the following section, we will discuss the factors that determine a new paradigm in Romanian museum management.

4. FACTORS THAT IMPOSE A NEW PARADIGM IN MUSEUM MANAGEMENT IN ROMANIA

Considering the environmental factors that enter the managerial equation, we discover opportunities and threats. On the one hand, the economic factors are in general rather positive: more and more social categories have a budget that goes beyond the "basic" needs and hence they develop educational and entertainment needs. The cultural factor, which takes tradition and aspirations into account, appears to be essentially positive. On the other hand, the potential impoverishment and loss of resources from the 'on duty' financier – the state budget – imposes the reconsideration of the subject and the building of a strong stakeholder network.

By far, the major impact of our current times is digitalisation. Whoever doesn't take this new information paradigm into account is going to become a 'museum exhibit'. The demographic impact needs to be understood and integrated: the aging population, the dramatic shift in cultural values and expressions of the Millennium and Alpha generations. Last, but not least, the fast pace of change at the international level and the globalisation trend with a huge impact on cultural change are arguments for changing the museum business model.

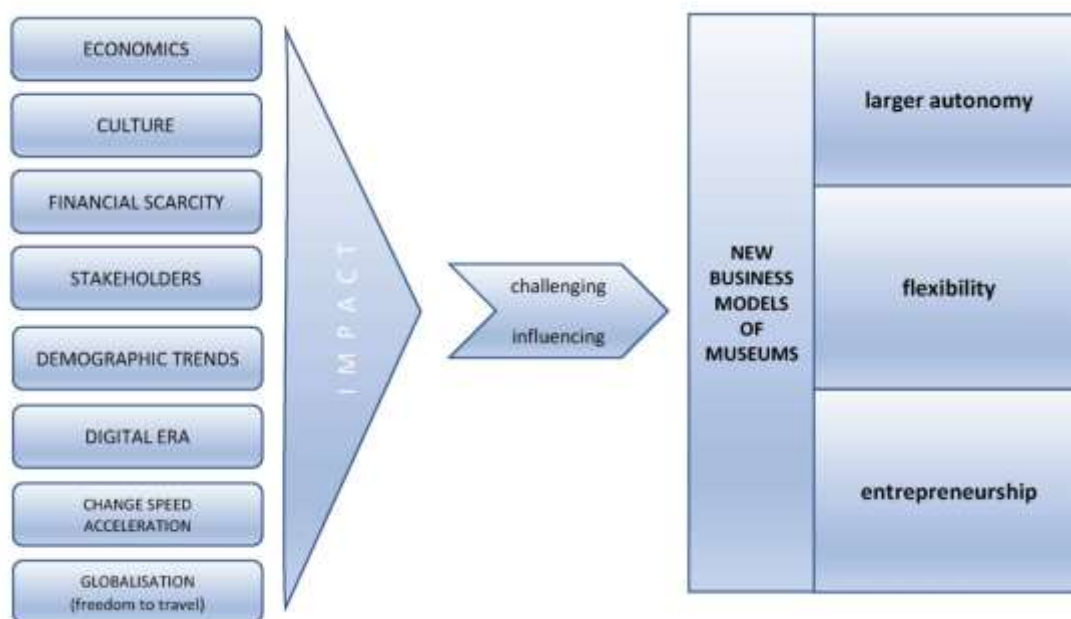


Figure 1. Factors that impose a new paradigm in museum management in Romania
 Source: The authors

“Aux grande maux les grands remedès” – the old French proverb can also be applied up to an extent to many kinds of activities in this challenging present. The rapid pace of change in the intensity of environmental factors we have already mentioned and the emergence of new ones, with high impact, far outpaces the rhythm of modifying the operating procedures in public institutions, which are bureaucratic structures by nature, linear ones, structures with the mentality of atomisation of personal responsibility. This accelerated evolution of the economic and social ecosystem makes the re-engineering of the public institution so much more imperative, in order for the public institution to survive and prosper: to increase its degree of autonomy, to be allowed flexibility and to be led by managers with an accentuated entrepreneurial spirit, selected as such. The four museums under analysis, just like the majority of museums in Romania, belong to the public sector.

Although there is no single, universal definition of the term of “business model”, many authors refer to the definition by Osterwalder and Pigneur (2009): “A business model describes the rationale of how an organization creates, delivers and captures value”. It should be noted that, historically, the purpose of the “business model” concept has been defined by emphasising value creation as a part of managing the development of new emerging technology. “What is the new business model for museums?” This is a tough question. While the distribution of funding sources varies from museum to museum, the basic financial model for years has been non-profit status supported by a mix of funding from earned income (e.g. museum shops can be profitable, but in most instances only break-even; educational programmes are good sources of earned income, if done well; and space rental for events, like weddings, are often more problematic than profitable); corporate sponsorship can play a large role as well, depending on the mission and policies of the museum (Merritt, 2009). Many people might think that the non-profit status of museums means that there is not a commercial side essential to their creation or growth. The truth is that even if museums do not generate their total income by themselves, there is always external support involved, be it from government, private funders or volunteers’ time. For example, the Louvre is miraculously funded by the French state and supplemented by other revenue streams from donations to licensing (the newly opened Louvre Abu Dhabi is a notable example). In contrast, non-profit museums in the United States came to exist through the civic-minded philanthropy and commercial acumen of bankers and financiers precisely because there was no government support (Gibbs, 2018).

An interesting *museum management model* is found at the Van Gogh Museum (VGM). The Van Gogh Museum houses the largest collection of work by one of the world's most famous artists, Vincent van Gogh. Its collection encompasses 200 paintings, 500 drawings and almost the painter's entire correspondence. Its financial model is as follows: it generates 50% of its income through ticket sales, with about 25% in grants from the national government and the remaining 25% coming from fundraising and commercial activities (Caines, 2015).

Given that roughly 85% of visitors come from abroad, its dependence on a healthy tourist economy and growing tourism is considerable – and vulnerable (the case with the Parisian museums is a sad example). Government funding is also under pressure, so it's critical to diversify income streams further and seek new business opportunities declared Axel Røger, Van Gogh Museum chief in 2015.

What are the paths to development chosen by VGM?

- VGM offers Van Gogh's paintings reproductions which are a new generation of very high quality 3D. These are manufactured with a technology developed by Fujifilm and provide reproductions of the image and the texture of the paint surface. According to the manager, Alex Røger, they are the logical next step in the history of paintings reproduction.
- Based on the expertise developed over the years by the VGM, museum professionals advise other existing arts structures and organisations as well as new museums on a range of issues – collections management, environmental sustainability, facilities management etc.
- The VGM launched a "Van Gogh Experience" – a multi-sensory display, three-dimensional educational journey that is represented in different parts of the world (Goumenou, 2016).

5. CONCLUSIONS

Modern businesses need to adapt to rapidly changing environments, stimulated by what new technology makes possible. Entire fields of human activity have to look at the overall picture, in order to fulfil the changing needs of their target customers. Museums also need a completely new approach and economic behaviour to reinvent themselves as businesses with entrepreneurial ways of thinking and behaving. There is a clear need for managers well-prepared to do things differently and have the courage to change the traditional and bureaucratic ways of the past (Shaw, 2014). Entrepreneurial behaviour and innovation represent the right way of approaching the future. Museums can apply entrepreneurial principles to encourage audience, drive innovation, and transform themselves into truly modern organisations that are oriented to take advantage of today's enormous opportunities (Ciecko, 2019).

Just like other organisations, museums need to consider all aspects of the environment in which they operate. Entrepreneurship must be regarded as a way that allows a museum to stay efficient and relevant while the world around it changes. And its managers must behave like a museopreneur – one who embraces or assumes characteristics of an entrepreneur to advance their museum's business model and general operations (Ciecko, 2019).

As Visser (2014) affirms, with the right attitude museums can play a pivotal role in tomorrow's societies, regardless of the changes in technology that no doubt will occur. What is needed is an attitude of inquisitive pro-activeness, where the consequence of trends rather than the trends themselves are the main focus of strategy and action.

Technologies develop and change continuously and museum staff should keep up with these developments. By doing that, they will be up-to-date on the lines to pursue and stay with. The trend that the future of cultural institutions lies in *interaction* grows stronger everyday through modern technologies and new ways to invite people to be involved and be part of the museum life. And mobile telephony will change every day not just the visitors' behaviour, but also their expectations and their involvement in museum activities. Therefore, museums must rediscover new ways of telling their stories, of involving visitors and of reflecting social consciousness. Taking into account

the universally-acknowledged truth according to which an imperative of the 21st century museums is represented by understanding the visitors' behaviour, necessitates that as part of their strategy museums embrace collaboration, iteration, and a commitment to audience engagement.

Three important things will strengthen a museum's digital presence: managing data well, creating elegant responsive designs, and engaging in online conversations (Ludden, 2014). Thus, visitors will have the possibility of expressing their real and digital identity according to their needs, and museums will be able to explore new ways of thinking and of reflecting the dynamics of social and cultural consciousness in the 21st century. This is why more autonomy, flexibility and entrepreneurial spirit are needed: the new generations – the Millennials, Z and Alpha – were all born under the influence of technology and, in order to meet their needs, museums need to think digitally, to accept the diversity and speed of an exigent public and, last but not least, to create innovative programmes designed for those who learnt in school that even culture can be 'only a click away'.

What we experience while visiting a museum is not only feelings of respect for ancestors and civilizations, but also a sense of pride regarding the phenomenal evolution and progress of humanity. If we understand that this long evolution was possible thanks to human initiative, learning-by-doing, innovation and risk-taking, then we will acknowledge that the entrepreneurial spirit was, is and should be part of human development (Grigore & Coman, 2016). We strongly believe that those managers who will invest time, energy and resources in designing a new and appropriate business model for their museums – will be the ones that will reap huge benefits in terms of customer engagement and reputation.

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